

Silt Removal is a 'Must' for Link Road

Project profile

Objective

The new Kirkintilloch Link Road required a sustainable drainage system to protect wetland and waterside wildlife habitats. Space restrictions on a 1.1 km stretch of road meant that attenuation ponds could not be used.

Solution

Three Hydro Downstream Defender® Hydrodynamic Vortex Separators were installed to remove silt and pollutants from the surface water runoff of this 1.1 km stretch of road.

Product profile

- Removes fine particles, oils and other floatable debris from surface water runoff.
- No risk of pollutant wash out.
- Easy to install and maintain.
- Repeatable, reliable performance.
- High efficiency over a wide range of flows.
- Adaptable.

Construction of a new £30 million road to the north of Glasgow linking the town of Kirkintilloch to the motorway network has been achieved to high environmental standards. It required the installation of three Downstream Defender® Hydrodynamic Vortex Separators (HVSs) from Hydro International to remove silt and pollutants from surface water runoff near the town centre. The Kirkintilloch Link Road, built as part of the town's £56million regeneration programme, opened in December 2010.

An extensive environmental programme for the road included the creation of new wetland and the protection of waterside wildlife habitats, so a sustainable drainage solution for the road's 5.1 km length was paramount including the siting of five attenuation ponds at points along the route.



But space restrictions presented a challenge to draining a 1.1 km stretch at the northernmost end of the road in Kirkintilloch town centre. So Hydro Downstream Defender® HVSs were specified to meet silt removal targets set by East Dunbartonshire Council and the Scottish Environment Protection Agency.

"The road is built in a former railway cutting and the proximity of buildings at the top of the cutting and relatively narrow cutting base width meant there was no room for an attenuation pond" says Michael Gordon of Consulting Engineers WYG.

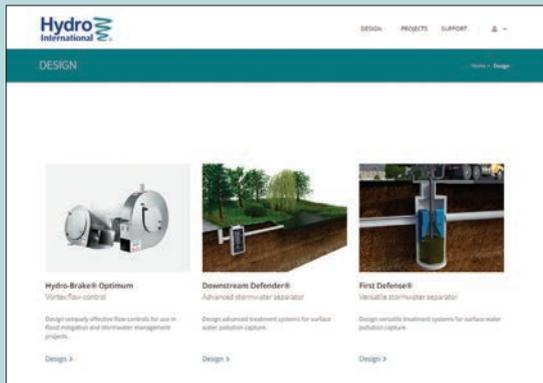
"The Downstream Defender® HVSs were installed at the Townhead Junction in Kirkintilloch and are integrated with a system of linked drainage trenches that help clean the surface water discharge into the nearby river, the Luggie Water.

"Treating surface water runoff to remove silts, oils and other pollutants was a fundamental requirement to protect the sensitive live watercourse. Downstream Defender® HVSs provided the ideal solution, achieving the minimal head loss parameters required and offering the best sediment removal performance."

The new stretch of the A7 between Carlisle and Langholm has been built to replace the original winding trunk road which had no overtaking opportunities and a poor accident record. The Hydro Downstream Defender® is the first to be constructed on Transport Scotland's trunk road network.

Minimising the environmental impact of the scheme was a

key consideration for the council and Transport Scotland. A SuDS-compliant drainage solution was one of a range of strict environmental requirements, including measures to facilitate the movement of fish and mammals, preserve habitats and provide sympathetic landscaping. As part of the project, the original road is to be de-trunked and part of it converted into a cycle path.



Design a Downstream Defender® with our Online Design Tool

Our online design tool now enables you to design your own Downstream Defender® or First Defense® stormwater treatment separators as well as Hydro-Brake® Optimum.

The tool also allows you to save project designs and submit them to our expert technical team for a free design review.

hydro-int.design

The Hydro StormTrain® Series of Surface Water Treatment Devices

The Downstream Defender® is one of the Hydro StormTrain® Series of surface water treatment devices. Each device delivers proven, measurable and repeatable surface water treatment performance. Each can be used independently to meet the specific needs of a site or combined to form a management train. They can be used alongside natural SuDS features to protect, enable or enhance them. To find out more visit hydro-int.com/stormtrain or search "hydro stormtrain" online.



First Defense®
Vortex Separator



Downstream Defender®
Advanced Hydrodynamic
Vortex Separator



Up-Flo™ Filter
Fluidised Bed Up Flow
Filtration System



Hydro Biofilter™
Biofiltration System

Learn more

To learn more about how the Downstream Defender® can help you to manage water more effectively, visit hydro-int.com, search **Downstream Defender** online or contact us:

Americas
+1 (207) 756 6200
inquiries@hydro-int.com

Asia Pacific
+61 436 433 686
enquiries@hydro-int.com

Europe & RoW
+44 (0)1275 878371
enquiries@hydro-int.com

Middle East
+971 506 026 400
enquiries@hydro-int.com