



Hydro-Jet™ Screen

Retrofit Rotary Jet™ Screen to Storm King® Overflow

Dalgety Bay

Project Profile:

- Retrofit to existing Storm King® Overflow chambers.
- Upgrade to existing performance.
- Minimum cost option.
- Screening and water quality improvement achieved.

Product Profile:

- Hydrodynamic separation and integral storage with Storm King® Overflows.
- 6 mm two dimensional screening from Rotary Jet™ Screens.
- No power required.
- Self-cleansing and self-activating.

Three Rotary Jet™ Screens, designed and manufactured by Hydro, have been retrofitted into existing Storm King® Overflows at Dalgety Bay, just north of Edinburgh, upgrading their performance to better than 6 mm solids removal in two directions.

The Rotary Jet™ Screens improve the performance of the existing Storm King® Overflows, one at East Sealstrand and two at West Sealstrand. The original design met the performance specification equivalent to that provided by a 12 mm bar screen which was the standard required in 1993 by the Forth River Purification Board. The current standard is now 6 mm in two directions and East of Scotland Water Authority (EoSWA) was required to upgrade the system by the Scottish Environment Protection Agency (SEPA).

According to Brian Sutherland of Waterway Consultancy, who were commissioned by EoSWA to come up with the optimum design solution, the selection of Hydro's new, higher specification Rotary Jet™ Screen meant that they were "able to retrofit at minimum cost, and without a lot of work or disruption, as the existing Storm King® chambers only required minor construction modifications, which was of great benefit to the client EoSWA". Additionally, the system does not require an external power source and is self-cleansing, maintenance is low and the lifetime costs are minimised. Overall, the Rotary Jet™ Screens compared favourably with traditional, mechanical options which were also considered by the Waterway Consultancy.

Rotary Jet™ Screens and Storm King® Overflows are designed to reduce the polluting impact of storm overflows which would otherwise by-pass any treatment process.

Here at Dalgety Bay, storm flows in excess of the sewer capacity are diverted to the Rotary Jet™ Screen and Storm King® Overflow system for treatment prior to discharge to the Firth of Forth.

The overflows use a combination of hydrodynamic separation (provided by the original Storm King® Overflows) and 6 mm aperture screening (provided by the Rotary Jet™ Screens), thus giving a total level of treatment able to remove a range of sewer solids through from grits and settleable organics through to neutrally buoyant aesthetic pollutants to floating debris.



This case study forms part of a series demonstrating the flexibility, cost-effectiveness and extended track record of the Hydro-Jet™ Screen. Other case studies include:



Retrofit to Existing CSO Chamber



Package Unit



New-Build Rotary Unit with Storm King®



New-Build Concrete Chamber