HUBER Technology Hungary
Silex Water Technologies Kft.



# Storm Screening Case Study at Crankley Point STW

## A HUBER Technology Wastewater Case Study

HUBER Technology recently completed a project at Crankley Point STW located in Newark.

The scheme was part of a £60 million investment by Severn Trent Water in Newarks waste and water systems to prevent flooding at around 400 homes in Newark. Part of this work involved the construction combined sewer tunnel 2.8m in diameter with a new terminal pumping station built at Crankley Point STW.

## Project Profile

HUBER Technology were first approached to look at the outline design of the project in 2012 directly by Severn Trent Water and as the project developed further in 2015 with NMCN and the BNM alliance

Through this early involvement in the project we were able to develop the most cost effective solution which provided the best solution for this challenging project.

The terminal pumping station features four dry weather flow pumps which pump the flow directly into the inlet works and six storm pumps which are used only in storm conditions. Each storm pump is capable of pumping 1,000 l/sec each and the combined flow of 6,000 l/sec needed to be screened to prevent debris from entering the River Trent

A working scale model of the complete pumping station and screen chamber was constructed to ensure that it worked correctly; this allowed us to ensure the screens would function in the way they were designed.

## HUBER Technology Supplied

- 2 x HUBER Storm Screen ROTAMAT® RoK1

*Scale model of the complete pumping station and screen chamber*

## Objective

The two storm screens were designed to screen the full maximum storm flow of 6,000 l/sec delivered from the 6 storm pumps. The 6mm two dimension screens prevent debris and screenings from entering the River Trent during storm conditions, both screens will operate as soon as a storm pump starts.

Any screenings captured by the screens will be discharged back into the dry weather flow channel to be treated and removed by the current inlet works.

*Storm Pumping Station*

*Screen Chamber*

## Solution

Through the early involvement in the project, several possible solutions we developed using a variety of screen designs depending on the flow rates and design of the pumping station.

Options were considered using up to four screens and different solutions to potentially remove the screenings into a dedicated screening handling plant.

The final solution involved the use of two 700mm diameter screens with a length of just over 8,000mm, mounted on opposite weirs to screen the full flow. The screenings collected by the screens are transported by an auger to the non-drive end where they are

discharged via a discharge scraper into the dry weather flow channel. This allowed the screenings to be returned to the flow to be removed by the inlet screens at the site.

By utilising a double dissipation zone cover on the screen we could ensure no storm flow would bypass into the dry weather flow channel and then overwhelm the inlet works. The double dissipation zone prevents flow from entering the screen over the weir but allows any flow transported by the auger to pass to the outfall.

The screens start to operate when the storm pumps start and will run on after a storm event to ensure the screen basket is clean for the next storm event.

The project was successfully completed and commissioned in December 2018 and is now ready to operate.

*“The high profile nature of the project meant that it was imperative we engaged early and effectively so that a suitable innovative solution could be agreed.” The project was delivered on time and to budget and is an excellent demonstration of close involvement with the water company and the contractor.”*
(Richard Willis, Area Manager)

*Installation photo*

*Pumping station and screen chamber*

*Storm screen operation*

A HUBER csoport képviselete

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