Stormwater Overflow Pumping Schlosstal Winterthur

Application market	Construction
Market segment	Dewatering & Drainage, Flood Control
Pumped medium	Stormwater
Pump product	Immersible
Country	Switzerland

Challenge

The wastewater from the city of Winterthur is fed to the sewage treatment plant via a drainage system. During heavy rain, this drainage system was regularly overloaded. Various overflow basins, spread all over the city were built to collect excessive rainwater. Reliable pump solutions with the lowest possible amount of maintenance were demanded to pump the rainwater from the drainage system into one from the newly built rainwater overflow basins called “Schlosstal”, which is designed for a 100 year flood, as well as for emptying the basin after the rain event.

Solution

Use of a total of five Hidrostal Screw Centrifugal Pumps for the reliable discharge of the drainage system into the overflow basin. Depending on the current demand, one pump after the other can be cascaded in up to a maximum overall flow rate of approx. 3000 litres per second. After the rain event has subsided, the overflow basin is emptied back into the drainage system via two drain pumps. All pumps are equipped with Prerotation type accessories, a self-cleaning sump system that removes floating layers and prevents build-up of debris in the basins.

Benefits

The task could be solved to the full satisfaction of the customer:

- → Safe protection against flooding thanks to reliable and efficient discharge of the drainage system
- → Low overall maintenance using Prerotation system, therefore cost-effective operation of the entire plant

Quantity of units sold	5 (overflow pumps)	2 (drain pumps)
Pump type	I16K-HD1 + IEVS8	E05Q-SL1 + EEXA6
Motor data	37 kW / 8 pole / 400 V / 50 Hz	5.2 kW / 6 pole / 400 V / 50 Hz
Duty point	Flow: 550 litres per second Head: 5.3 meters	Flow : 54.0 litres per second Head : 5.7 meters
Material combination	Cast iron pump body and wear parts, nodular iron impeller	
In operation since	2011	