



STEBATEC[®]
Measure - Control - Regulate

Reinhalteverband Mühlthal & Region Böhmerwald

Throttling and metering the outflow from the Erlet storm water basin of the Ulrichsberg sewage treatment plant

- Weather controls outflow rate
- Simple installation and maintenance-friendly design
- Successful trial operation



The new partly filled pneumatic outflow controller of the Erlet storm water basin with maintenance cover removed.

Starting situation

The Upper Austrian Reinhalteverband Mühlthal & Region Böhmerwald comprises 24 municipalities and manages about 1,000 km of sewer, 18,000 sewer shafts, 300 pumping stations, 60 storm water basins and 5 sewage treatment plants. One of the storm water basins, the Erlet basin near Ulrichsberg, consists of two storage pipes each 30 m long and 2,000 mm in diameter.

The pipes store the rainwater and retain it before it enters the main sewer towards the Ulrichsberg sewage treatment plant. The outflow is reduced by a throttle weigher at the outlet of the structure. For reasons of operational safety and the throttle and in view of growing demands on the sewer management, an alternate throttle solution was required which would also measure the flow.

Requirement

- High measuring accuracy across the full range from Q_{\min} to Q_{\max}
- Ensure uniform outflow rate
- Quick change of the outflow rate from the control room
- As little structural intervention as possible
- High reliability and self-monitoring
- Little maintenance

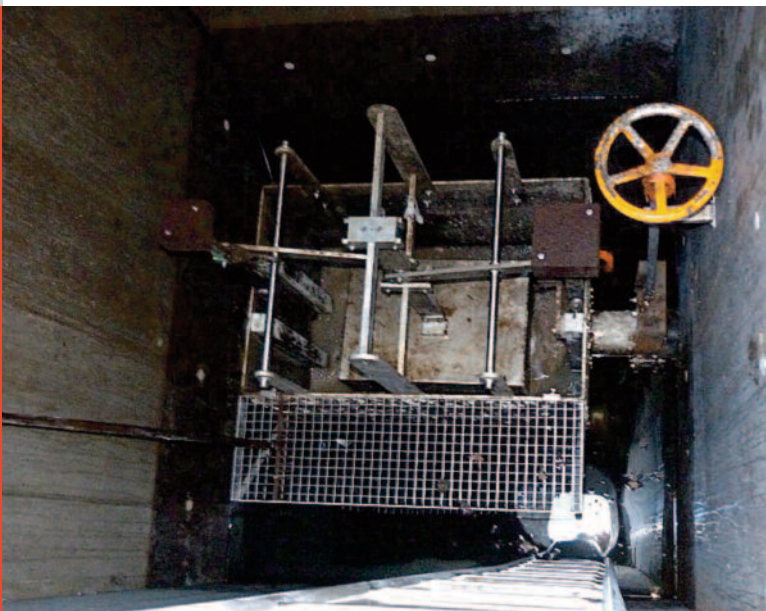
Executing company
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Implementation

The Erlet storm water basin is a major part of the sewer management system of the Ulrichsberg sewage treatment plant. To ensure that the flow would be measured exactly also in situations with no rainfall and the outflow was controlled, we opted for a partly filled pneumatic throttle unit of 200 mm nominal width which provided the required measuring accuracy and also the throttling range from 26.2 l/s to 50.0 l/s. It was

set up dry in the available throttle shaft of the basin. Only a manhole cover had to be made wider to ensure good access.

An air compressor in the control cabinet 60 meters away actuates the throttle unit. Considering the length of the line, the control valve was positioned directly in the throttle shaft. So the old place of the control cabinet could be retained and there was no need for a separate cabinet for the throttle system. The control unit supplied by STEBATEC was integrated in the available con-



The fairly outdated throttle weigher in the throttle shaft of the Erlet storm water basin.



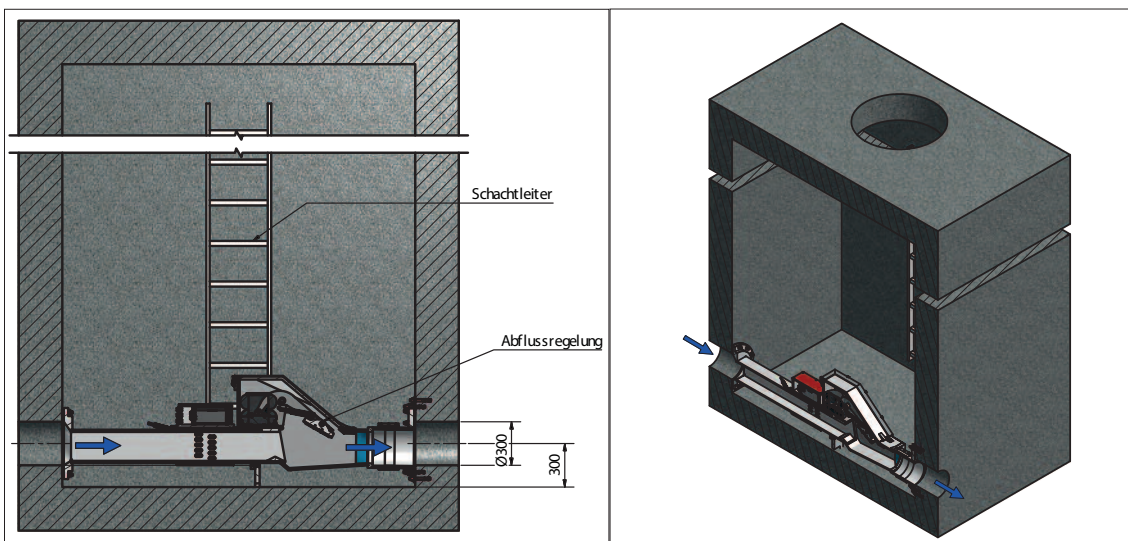
The partly filled pneumatic outflow control unit set up dry in the shaft also measures the flow.

trol of the storm water basin and all functions of it can be controlled directly via data line from the control room.

The STEBATEC throttling unit in the Erlet storm water basin now is in full control of the basin as a function of the rainfall, which makes the maximum possible retention volume available at any time. Access for maintenance of the system is

possible through the service cover without removal of the outflow controller; besides the operation of the unit can be inspected visually.

Fueled by the successful installation and start-up as well as the results of the trial operation in fall 2016, another four storm water basins of the Reinhaltverband will be equipped with the system by STEBATEC in spring 2017.



Existing throttle shaft with the new outflow controller: Sectional view along the outflow axis.

Maintenance and repairs are no problem because access is very comfortable.



Klaus Pflieger, managing director of the Reinhaltverband Mühlthal & Region Böhmerwald, is glad about the new situation, which is much better now.

The open control cabinet of the new outflow control system which is connected to the control room.