



Wastewater treatment plant Basel, Switzerland

Client: ProRhenio AG
2020 - 2023

Expansion of one of the largest sewage plants in
Switzerland



The existing Basel wastewater treatment plant (WWTP) has a capacity of 470,000 PE



Initial situation

The Basel WWTP has been in operation since 1982 and is reaching its limits.

The expansion of the WWTP should not only increase its capacity, but also improve the wastewater treatment process in accordance with the new legal requirements. In the future, it will be possible to eliminate not only carbon, but also nitrogen and micropollutants from the water. The expansion will also improve the energy efficiency of the plant: The sewage gas produced in the new system will be fed into the gas distribution network of the city of Basel as climate-neutral biogas.

Construction period

7 years

New capacity

**520,000
population
equivalents
(PE)**

Reduction of micropollutants

> 80%

Special challenges

A WWTP of this size requires more than 700 different valves, many of which have large nominal sizes or need to be made to measure. Since the production capacity of the Sistag factory is limited, each individual step had to be planned and scheduled meticulously. Some of the work on site had to be performed while the water treatment plant was operational.

Wey MFC DN 700 knife gate valves in the biological treatment unit



Approach

In order to provide the large number of valves, the equipment was produced, delivered and installed in several stages.

A project team coordinated the work at the Sistag factory and at the construction site. Large knife gate valves with nominal sizes of up to 1,200 mm needed to be processed with special machinery and transported with cranes. Since the project involved almost 50 custom-made water control gates, the Sistag team visited the site several times to inspect the conditions, take measurements and install the valves. Some of the installation work was performed at night when less wastewater flows through the main inlet of the WWTP and the flow can be rerouted. The water control gates could often only be installed under very confined conditions. The knife gate and butterfly valves were installed by the pipeline construction company.

Stage 1

Dec. 2020 – April 2021
689 knife gate valves and butterfly valves for the biological treatment stage

Stage 2

Aug. 2021 – June 2022
46 water control gates for the pre-treatment unit, main inlet, grit chamber and vortex drop shaft

Stage 3

Planned for 2023
Further water control gates for micro-pollutant elimination and sludge processing

Total number of valves

735

Special valves

Type 2 sluice gates for water columns up to 5,500 mm



Category
**Knife gate
valves**

Product series
MF, VN

Nominal size
DN 50 - 1200

Actuator
**Manual,
pneumatic,
electric**

Number of valves
574



Category
**Water control
gates**

Product series
**Sluice gates,
stop logs,
stop gates**

Width
800 – 3800 mm

Number of valves
46
+ more being planned



Category
**Butterfly valves,
check valves**

Product series
**TF13, TF20,
TW20, RSK**

Nominal size
DN 65 - 400

Actuator
**Bevel gear,
pneumatic**

Number of valves
115

«A project of this size involves tremendous team effort on the part of everyone.»

Werner Jurt
Sistag AG Project Manager

Planned commissioning

2022 – 2025

in stages

Expected service life

> 25 years

All valves are expected to last for at least the service life of the treatment plant. The water control gates are generally expected to remain in operation for up to 40 years.

Next steps

Most delivered valves are already in operation or will be in operation soon. The last stage will take place in 2023 with the delivery of further large water control gates.

The cooperation with the planning office and the customer has been extremely positive. Despite the limited production capacity and the significant coordination effort, all valves could be delivered and installed on time.



Two TW20-6 DN 125 butterfly valves on the roof of the new building

**Contact us to
discuss your
individual
application.**
**We show
solutions that
work.**

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