

Tyrolean Wastewater Associations Rely on ACAT DISSOLVING- AND DOSAGE TECHNOLOGY

FOTO: STEPHANIE ALBERT/PIXABAY



For more than 35 years we have been gaining experience in the construction of dissolving systems for a difficult to dissolve chemical: the polymer polyacrylamide. The process engineering knowledge of our field staff combined with the knowledge of our experienced employees of the Technical Centre Scheibbs made it possible to further develop the design and the control technology of our dissolving and dosing systems according to the latest requirements. Due to a close cooperation with the plant operators and their operating staff, the demand, the process engineering requirements and the wishes of the costumers were taken into account and individually implemented. The close cooperation with our customers and ACAT's flexibility in project implementation convinced three major Tyrolean wastewater associations.

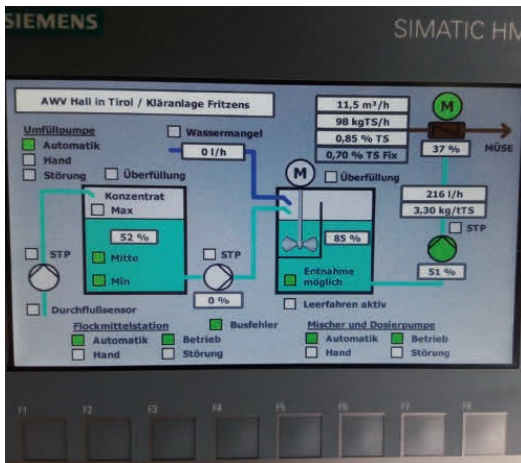
PROJECT WWA HALL, TYROL – FRITZENS

Link: <https://www.abwasserverband.com/>

Polymer dissolving unit FPU for sludge thickening with belt thickener

16 municipalities have one mission: "We pull together when it comes to cleaning the wastewater from the region and finally discharging it cleanly into the Inn". Large investments have been made in the past. Today the focus is on keeping the existing infrastructure at a high technical level, expanding and optimizing it." This concern was an occasion for the management, represented by Ing. Christian Callegari and for the operating staff, to take a closer look at the thickening of the surplus sludge.

The AWV (wastewater association) operates a

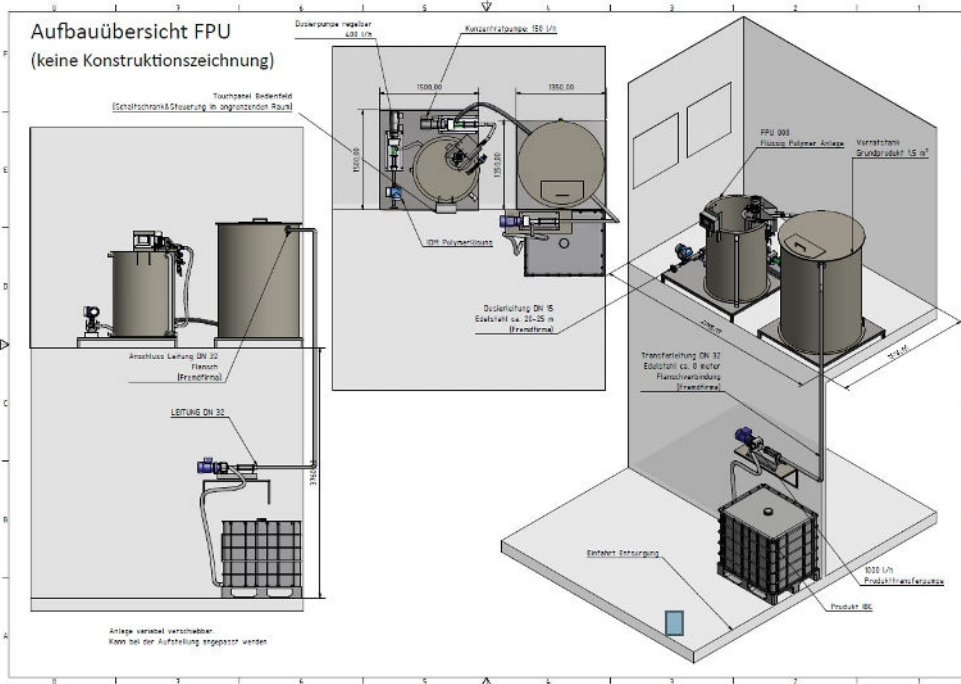


mechanical surplus sludge thickening system with a belt thickener. A liquid polymer is used for conditioning. The existing system was outdated, it was prone to failures and met no longer the technical requirements of the AWW Hall Fritzens. In October 2017, the technical options for an investment in the surplus sludge thickening system were examined and offers were invited. As ACAT is a long-standing supplier with a lot of experience in the field of sludge dewatering, our technical experts were also invited to an interview and to submit an offer. Together with the association our sales representative Roland Auer and the team of the

ACAT Technical Centre Scheibbs worked out a tailor-made offer. This offer convinced the board of directors both from a technical and a business point of view! The contract was awarded to ACAT in December 2017. The project was implemented within the desired assembly and commissioning deadlines in the first quarter of 2018 and since then the plant has been running smoothly.

Special features of the system

- The polymer is dosed proportional to volume and weight of the surplus sludge charged to the belt thickener.
- With an IDM the volume of the sludge is measured in m³/h surplus sludge, the online density measurement registers the current DS/h.
- The polymer is dosed with a controller in kg/t DS (dry substance).
- The mixing energy is adapted to the flow rate (kg DS/h) and is kept constant with a frequency controlled motor mixer.
- Assembly, electrical installation, programming of the dosing control and the integration into the existing control system were carried out by the Scheibbs Technical Centre.





AWV Hall Tyrol – Fritzens Polymer dissolving unit FPU for sludge dewatering with belt decanter

We would like to thank the management of the AWV Hall in Tyrol-Fritzens for the trust you have placed in us. Thanks also to the two plant managers Manfred Anfang, Hubert Klingenschmied and their teams for their active support and patience when the work sometimes lasted until late at night!

PROJECT ARAB GMBH – AWV WÖRGL, KIRCHBICHL AND SURROUNDINGS

Link: <http://www.arab-kirchbichl.at/>

Polymer dissolving unit PPU 3 for sludge dewatering with high-performance decanter

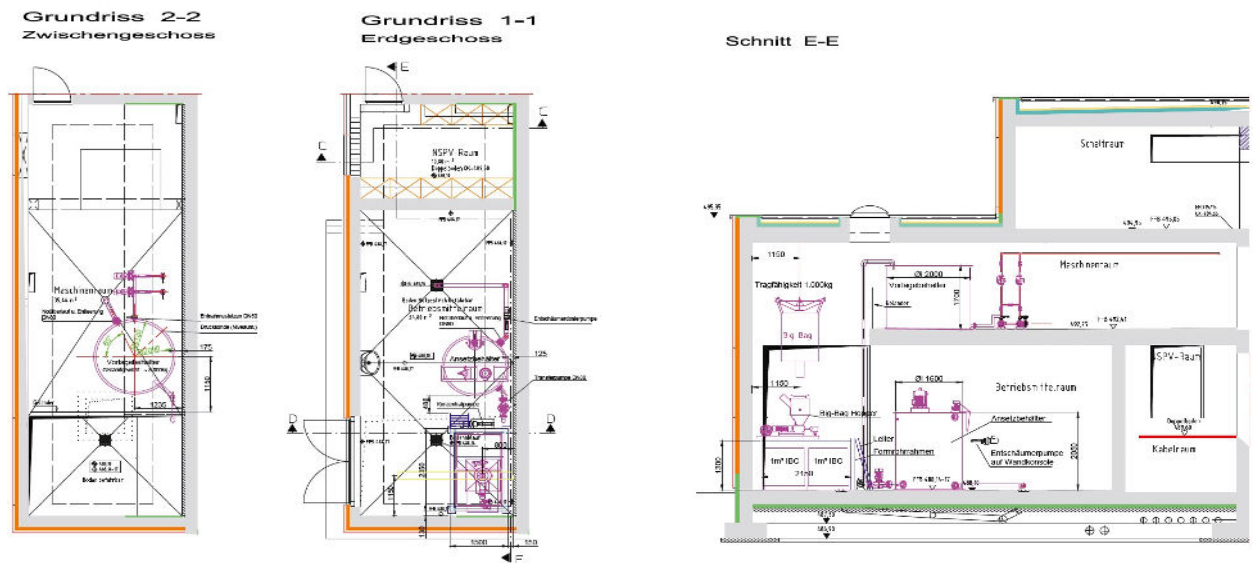
In Kirchbichl, about 55,000 m³ of digested sludge with a dry substance content of approx. 3.0 % is dewatered annually. The processing of food waste and the co-processing of a wastewater/sludge mixture from a nearby food processing plant have a significant influence on the quality and composition of the sewage sludge to be treated. In 2017, our sales representative Roland Auer installed a mobile FHM station for powder admixture on a decanter to optimize sludge dewatering. The system was then tested over several winter months. 40 % powder polymer was added to the liquid FHM. The dry substance of the sludge cake remained the same, but the cen-

trate was more stable with this mixture than in conventional liquid operation.

Due to the very good results, a new plant was planned being 100% compatible for the powder processing of both decanters. Together with the association and the Scheibbs Technical Centre, we prepared a tailor-made offer and an economic efficiency calculation was carried out. Our motto “a long-term partnership and the best solution for the customer” was able to convince the association’s decision-makers. The financial means for the conversion were released. The investment for the “New Polymer Plant” should have paid for itself within a few years. In autumn 2018 the plant was installed and since then the plant has been operating with a mixture of 60 % liquid polymer and 40 % powder polymer.

Special features of the system

- There are separate preparation and maturing tanks. The tanks are located on different floors.
- With a total tank volume of about 8,000 l, both decanters can be charged easily.
- Sufficient maturing time for the polymer solution is guaranteed.



Polymer dissolving unit PPU 3 for sludge dewatering with high-performance decanter

- After taking out the required daily quantity, the preparation tank with the FHM solution is run empty. When the decanter is started in the morning, a fresh polymer solution is automatically prepared first.
- A defoamer can be added to the preparation.
- The mixing ratio liquid polymer to powder polymer (in %) can be adjusted continuously.

Results

In a year-on-year comparison of 2018 and 2019, the dry substance content of the discharge was kept stable. Operating the same mode and adding a mixture of 60 % liquid polymer and 40 % powder polymer results in a cost advantage of over 15 % of the operating resources used. Another positive feature is the quality of the centrate. It is much more stable than when operating the plant with liquid polymer only.

We would like to thank the AWV Wörgl, Kirchbichl and the surrounding area for the confidence placed in us. Our special thanks go to the technical manager, Mr. Ing. Johann Kitzbichler, B.Eng. for his commitment and the coordination between the individual areas.



In one of the next issues of inside acat you can read about the Projekt Stadtwerke Schwaz – Waste water department Link: <https://www.stadtwerkeschwaz.at/>

Polymer dissolving unit PPU 3 for sludge dewatering with high-performance decanter Project award: December 2019 - commissioning March 2020