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Replacement of coarse screens, refurbishment of screenings treatment system, new screenings removal and transport station



Most advanced technology: HUBER machines on STP Linz-Asten, the largest sewage treatment plant in Upper Austria

On the largest sewage treatment plant in Upper Austria with a design size of 950,000 PE, the coarse screens were replaced and the screenings treatment system was refurbished. Furthermore, a screenings removal and transport station was built.

The entire municipal area of the regional capital Linz and 39 neighbouring municipalities with a total catchment area of 900 km² are drained via the regional sewage treatment plant Asten. In addition, the biodegradable wastewaters from big industry companies are processed, such as wastewater from the coke smelting works Linz of Voestalpine Stahl GmbH and DSM Chemie. The industrial wastewater amounts to approx. 30% of the total flow.

The maximum flow from the catchment area, which is drained primarily through a combined system, is 8.8 m³/s while the maximum dry weather flow is 2.7 m³/s.

The location of the sewage treatment plant is characterized by the Danube barrage Abwinden-Asten. The pondage of the dam power station extends up to the city area of Linz. The location of the sewage treatment plant in the city's eastern neighbour municipality Asten at the dam power station has therefore been selected to ensure the Linz sewers can drain by gravity on their way to the STP. The wastewater flow is lifted into the sewage treatment plant and there treated mechanically and biologically. The treated flow is passed to the tailwater of the power plant.

The four old parallel-flow rake screens on site with 80 mm bar spacing were installed long ago, around the year 1979, when STP Asten

went into service in the form it is now.

The fine screens were replaced in 2000 by revolving chain screens with 10 mm bar spacing. HUBER supplied the associated conveyors and screenings treatment systems for the new fine screens and the wash press for the coarse screens.

As the regional sewage treatment plant Linz is a training site for sewage works operators and also frequently visited as a destination of excursions, and of course for technical reasons as well, it was necessary to replace the coarse screens by a state-of-the-art solution and reduce the odour nuisance inside the screening chamber.

The old parallel-flow screens with 80 mm bar spacing were dismantled and HUBER Multi-Rake Bar Screen RakeMax® units with 35 mm bar spacing installed instead. The new screens have a smaller bar spacing and higher separation efficiency so that larger amounts of screenings are generated but the revolving chain screens can cope with this as their surface is cleaned very quickly.



HUBER Wash Press WAP® 2x8 with 16m³/h throughput each

Double screw conveyors with 600 / 500 mm diameter were installed at right angles to the four new coarse screens and the four fine screens, which are all arranged side by side. The screw conveyors transport the screenings into HUBER Wash Press WAP® units size 2x8. Each of the wash presses has a capacity of 16 m³/h raw material throughput.

The two double wash presses dewater the screenings and push them through four pipes installed at a steep angle, up to above the screenings loading point for removal and transport. At the end of these four pipes the screenings plugs are broken up to avoid undefined big agglomerations.

At four points, the broken up screenings fall into a screw which distributes them into one of two covered roll-off containers (which one depends on the direction of screw rotation).

Each of the containers has a gable-roof shaped cover. Under the “ridge” of the cover, a screw conveyor with open bottom distributes the material longitudinally in the container. When the container is full, the distribution screw reverses its conveying direction and starts to fill the other container.

The refurbishing project was planned by the engineering office Dr. Lengyel ZT-GmbH in Vienna. We would like to say “thank you” to the BDL engineers and the plant managers of STP Asten for the excellent collaboration right from the beginning up to commissioning – we always enjoyed the congenial and constructive working atmosphere very much!

Related Solutions:

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Related Products:

- HUBER Multi-Rake Bar Screen RakeMax®
- HUBER Screenings Wash Press WAP®

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