From screen building to sewage sludge drying: complete modernisation of the La Crosse wastewater treatment plant with HUBER

In 2021, HUBER Technology Inc., the Denver, North Carolina-based subsidiary of HUBER SE, was awarded the contract for the modernisation of the La Crosse wastewater treatment plant located on Isle La Plume. The city of La Crosse, with a population of around 52,000, is located in the state of Wisconsin, which is situated in the Midwest of the USA.

Total investment volume of around 60 million US dollars

The scope of supply includes a HUBER Multi-Rake Bar Screen RakeMax® CF in the screen building in the inlet to the WWTP, a HUBER Belt Dryer BT 18 for sewage sludge drying, and a HUBER Sludgecleaner STRAINPRESS® for primary sludge screening. The total investment volume of the modernisation package amounts to about 60 million US dollars.

Top seller: the HUBER Belt Dryer BT is one of the company's top-selling products.

The previously installed shredder at the La Crosse wastewater treatment plant.

Henk-Jan van Ettekoven (right), managing director of HUBER Technology Inc., at the start of the modernisation.

A HUBER Belt Dryer BT size 18 will be used at the La Crosse wastewater treatment plant in the future.

Screen building: HUBER Multi-Rake Bar Screen RakeMax® CF

One of the reasons for implementing this modernisation project were two defective shredders that were regularly flooded and caused significant bypass problems. HUBER solved this problem by installing one of its multi-rake bar screens, which has proven itself in thousands of installations worldwide. This allows work to be carried out on the operating deck.

The HUBER RakeMax® CF screen with its vertical design enabled the engineer to combine both shredding channels into one larger channel and to route 100% of the influent through one screen. This is capable of handling the full hourly peak flow. Special baffles for the inlet allow for an emergency overflow (bypass) in case of a power failure of the plant. The screen is also very easy to maintain because it has no bottom bearing and thus no submerged wearing parts.

Throughput of over 90,000 cubic metres per day

Due to the robust and vertical design of the HUBER Multi-Rake Bar Screen RakeMax® CF and therefore only minimal adaptations to the existing structure required, HUBER Technology Inc. could convince the customer. The screen is designed for a throughput capacity of 24 million gallons per day (90,850 m³/d).

The HUBER Multi-Rake Bar Screen RakeMax® CF consists of a U-shaped stationary bar rack arranged parallel to the direction of wastewater flow. The wastewater streams into the open face of the screen and then out through both the left and right bar rack. The solids are efficiently retained inside. The retained screenings are carried vertically upwards out of the concrete channel and transferred to the upper discharge area. Compared to shredders, the arriving screenings are efficiently removed from the wastewater stream.

Primary sludge screening: HUBER Sludgecleaner STRAINPRESS®

To ideally protect the digesters from disturbing solids entering from the primary sludge, a HUBER Sludgecleaner STRAINPRESS® separator was installed on the influent side. This is designed for a throughput of max. 314 gallons per minute (approx. 72 m³/h) with a solids content of 3.36% DR. In the solids discharge, the sludge screen achieves approx. 35% DR.

Sewage sludge drying: HUBER Belt Dryer BT 18

In addition to the modernisation of the sewage treatment plant, the customer also asked HUBER to address the existing problems in sewage sludge treatment. The recent wet weather made it difficult to apply the sewage sludge to the soil due to the odour nuisance, and storing the material for later spreading was not an option for the customer. Looking for new ways to treat and dispose of sewage

sludge, the customer opted for drying the sludge, thus ensuring long-term disposal security.

The best drying process: customer visited HUBER reference plant

In order to select the most suitable and best drying process, the customer visited HUBER's reference plant in Sheboygan, Wisconsin. There he could see for himself the quality of the HUBER belt drying system, especially since the turnkey plant built by HUBER in 2014 has been in operation to the customer's full satisfaction since completion.

Over 28,000 tonnes of sludge per year

The mechanical installation of the BT 18 belt dryer started at the beginning of August 2022 and has already been completed. The final commissioning of the dryer is scheduled for the 2nd quarter of 2023. The amount of sewage sludge to be dried in La Crosse will be 28,654 tonnes per year in the future.

Competence, development and innovation

In the coming years, HUBER will continue to develop the BT belt dryer and adapt it to the market situation. With competence, new innovative ideas and pioneering spirit, HUBER will continue to meet the challenges of the highly dynamic sewage sludge drying market. The La Crosse sewage treatment plant will add another project successfully completed by HUBER to the portfolio in the field of sewage sludge drying.

USA now second largest market for HUBER belt dryers

Meanwhile, the market for belt dryers is growing for HUBER Technology Inc.: In 2022, HUBER's US subsidiary was awarded three more belt dryer projects – the USA is now the second largest market for HUBER belt dryers. So far, there are 8 installations in the USA with a total of 9 dryers. The sizes range from the BT 10 belt dryer to the largest available size, the BT 30 belt dryer.

HUBER belt dryers installed in the USA:

- Mooresville, North Carolina
- Sheboygan, Wisconsin
- Savannah, Georgia
- Springdale, Arkansas
- Jordan Basin, Utah
- La Crosse, Wisconsin
- Swatara, Pennsylvania
- Hickory, North Carolina