

TANK SYSTEM

The first elevated tank system with HydroSystemTanks® in Norway

The development of a new business park in the Norwegian municipality of Øvre Eiker required the construction of a new water storage tank with a volume of at least 2 x 600 m³ and a pressure booster system in order to guarantee the drinking water supply for the entire municipality.



At the beginning of the year, the construction company commissioned with the development, Isachsen AS, was asked by the municipality to obtain a proposal and an optional quotation based on the HydroSystemTanks® for the elevated tank system of Hydro Elektrik AS. The initial coordination could take place on site at the end of January. Most of the final negotiations following the positive decision and the subsequent detailed planning had to be done largely via web conferences during the lockdown. Close coordination between all those involved

was necessary, since neither the municipality nor the construction company had the necessary knowledge to build a stainless steel tank system.

Hydro-Elektrik AS was in charge of the project. Another target specification was that the system had to be operational by the end of November. This goal was achieved by way of a tight schedule, good preparation and extremely motivated cooperation between all those involved in the HydroGroup® - despite the constantly changing difficulties caused by the coronavirus regulations. The tanks were, so to speak, made from the roll using a new production technique with largely prefabricated elements.

In addition to the two tanks, the scope of services included a frequency-controlled pressure booster system with 3 x 30 kW, the complete pipeline installation, the cleaning system for cleaning the inside of the tank, as well as the steps and platform systems.

The building was coordinated according to requirements by the Norwegian client Isachsen AS, and was realised as a steel-structured hall



with thermally insulated panels. A room with an emergency power generator is integrated between the tanks.

For the HydroGroup® this project represents a lighthouse project in a completely new market environment. Stainless steel tank systems are already present in some Norwegian municipalities, but this high-quality technology and the design with free-standing tanks is still a novelty.

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WATER TREATMENT

Clear water for the East Frisian island of Juist

A self-sufficient water supply on the island of Juist has existed for more than 300 years.

This is thanks to a so-called freshwater lens under the island, from which the drinking water is obtained. The groundwater body also extends into the island's peaty and humus-rich layers. The water dissolves so-called humic substances from these layers, which result in a yellowish colouration. The groundwater also has an increased iron content, an insufficient oxygen content as well as excess carbon dioxide and traces of hydrogen sulphide.

The existing system for deferrization using dry filters and for degassing was in urgent need of

replacement. However, after the system had to remain in operation until the new system was completed, an extension was built for installation of the new filters during the winter of 2017/2018. A process change also occurred as part of the new concept with environmentally-friendly ozone biofiltration. The raw water from the 24 wells is first aerated in order to expel excess carbon dioxide and, above all, hydrogen sulphide from the water.

Following intermediate storage, the water is fed to the three ozone bio-filtration systems. Following bio-filtration, the water flows through the existing open filter system to the pure water tanks. The system, built in three lines, has a capacity of 3 x 30 m³/h. Commissioning took place at the beginning of the season in May 2020. Since the plant was commissioned, the changing yellow colouration in the drinking water has no longer been an issue for the Juist's residents and tourists.

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THE OZONE-BROMINE METHOD

DIN 19643-5

As Part 5 of the Swimming Pool Standard DIN 19643, the ozone bromine process was included in the series of standards following intensive preparatory work.

The standard bears the somewhat bulky title „Process combinations using bromine as a disinfectant, produced by ozoning of bromide-rich water.“

The application for standardisation was submitted by Hydro Elektrik as long ago as 2009, and publication is expected in early 2021.

INTERNET-RELAUNCH

Following a relaunch that was necessary for technical reasons, the www.hydrogroup.biz web site was unveiled several weeks ago with a new outfit and its usual clear structure.

An appealing, informative and up-to-date web-site is of great importance now that trade fairs are becoming less and less important. The offer will be expanded with additional content in the coming months.

New water treatment for paper mill

RWT GmbH supplied a condensate cleaning system (CCS) and three-line additional water treatment for a paper manufacturer in Brandenburg.



Teamwork within the HydroGroup® resulted in a condensate cleaning system (CCS) for treating the reflux condensate.

Hydro Elektrik delivered two raw water and two pure condensate tanks made of duplex stainless steel with a total storage volume of 400 m³. Between the storage tanks, the condensate is first cooled via a recuperation system with plate heat exchangers, and particles are removed using a hydro-anthracite filter. The dissolved salts are then removed using ion exchange technology. The constellation of the desalination stage should be emphasised: The cation and the anion exchangers are operated in the upflow counter-current process, known as the floating bed. If this circuit is in regeneration, a mixed-bed filter is available to process the 180 m³/h of condensate.

This innovative process promises several advantages over the often used condensate desalination process, consisting of a co-current cation exchanger and a mixed-bed filter. A longer service life of the ion exchange system and, above all, the lower consumption of chemicals and the saving in wastewater speak for themselves when it comes



to the CCS realised here.

The wastewater produced by the condensate cleaning system is treated with the help of a neutralisation system so that it can be reused in the paper machines' fresh water tank. A three-line water treatment system was also realised for the replenishment of additional water. This consists of a permeate-graded reverse osmosis system with a downstream electrical deionisation system (EDI) for each 15 m³/h of diluate output. The result is pure water with a conductivity of less than 0.08 µS/cm.

The entire system technology is automated and is controlled by SIVACON switchgear with plug-in technology and a Siemens S7 PLC.

Commissioning of the entire system has already been completed so that trial operation can be started at short notice. For RWT GmbH, this is one of the largest orders in the company's history with a value of approx. 3,700,000 Euros.

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TANNHEIM LOCATION

Outdoor facility ready



In November 2019, the entire administration of Kühle GmbH in Tannheim moved to Robert Bosch Straße. The outdoor facility was completed at the end of September this year.

MOBILE SYSTEM

Ultra-pure water trailer successfully in operation for almost one year

For 11 months, the mobile RWT ultra-pure water system has been ensuring the reliable operation of a waste-to-energy plant during the renovation of a stationary demineralisation system.



The ultra-pure water trailer reliably produces 20 m³/h of deionized water in VGB ultra-pure water quality. The rarely-required changing of the filter cartridges and a process chemicals refill interval of a few days mean that the customer's staffing costs are low. In addition, maintenance work by RWT for mixed-bed filter resin changes is very seldom required thanks to the oversized mixed-bed filters.

The permanent monitoring by RWT GmbH of the water quality produced by the ultra-pure water trailer generates additional customer benefits in addition to operational safety and convenience, as well as cost calculability.

In 2021, the mobile ultra-pure water system will be available again for new areas of application.

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