

# STRONG IN FINLAND

## INVESTMENTS IN NEW DEWATERING PLANT PAY OFF QUICKLY

The dewatering of sewage sludge is a central key to the massive reduction of operating costs in most sewage treatment plants around the world. Over the past decades, decanter centrifuges have proved to be one of the most suitable separation systems for precisely this type of dewatering. This is not surprising since decanter centrifuges are durable, robust and require very little maintenance. However, the long service life of these machines means that many European sewage treatment plants are still using machines that have been in operation for several decades.

Two operators of sewage treatment plants in Finland have now seized the opportunity and are focusing on technological evolution in the field of sewage sludge dewatering. Within a few weeks and months, the new decanter centrifuges from Flottweg reduced the operating costs of sewage sludge dewatering so massively that amortization was possible within a short time.

### SEWAGE SLUDGE DEWATERING AS THE KEY TO COST REDUCTION

During the treatment of municipal waste water, a large amount of so-called sewage sludge is produced at the end of the process chain. In order to transport, recycle, dispose or incinerate the dewatered sludge, it is essential that the sludge has a high dry solids content. Further important factors are the economical use of polymers, water and energy as well as reduced wear. Looking at the overall balance, about 75% of the costs are attributable to the disposal of the sewage sludge, 15% to polymer consumption and the rest to energy and other ancillary costs. It can be concluded from this that efficient sludge treatment leads to savings in all of these three cost blocks.

For this reason, two operators of sewage treatment plants in Finland have decided to reorganize their mechanical treatment processes.

A look into the underground  
Sewage treatment plant in  
Turku Finland.



The Xellefor series in use in the Seinäjoki sewage treatment plant. The disposal costs were reduced by a quarter.

## UNDER THE CELLARS OF THE STUDENT CITY - RAPID AMORTIZATION AT THE TURKU SEWAGE TREATMENT PLANT

Turku - located where the river Aurajoki flows into the Baltic Sea - is the sixth largest city in Finland with almost 200,000 inhabitants. The city is the seat of the Archbishop of the Evangelical Lutheran Church of Finland and an important research location in Finland with various universities, academies and research companies. The city's only sewage treatment plant is similarly innovative.

Turun seudun puhdistamo Oy is a waste water treatment service provider owned by 14 municipalities. The company offers its owners high-quality waste water treatment services. The waste water association's waste water treatment plant is in Kakolanmäki. The plant processes the region's industrial waste water and that of almost 300,000 inhabitants in the region of Turku. Built completely beneath the city several years ago, seen from inside, the waste water treatment plant has the appearance of a small town.

Until a few years ago, the entire sewage sludge dewatering process was performed with two older

decanter centrifuges. In view of the weak separation results, it was then decided to take a proactive approach to the treatment of the waste water:

„The acquisition of new dewatering systems became a hot topic when we renewed our sludge treatment contract in 2018. We decided to launch an EU-wide tendering procedure in order to replace our machines with modern decanters and thus achieve maximum dryness. Flottweg was one of the bidders,” explained Jouko Tuomi, process engineer at Turun seudun puhdistamo Oy. After detailed examination and consideration of several key factors, the decision was made to purchase two decanter centrifuges from Flottweg.

After two years of service, Jouko Tuomi looks back positively on the decision: „In these years we have saved sludge costs of € 150,000 per year because the dry matter content has increased by about five percent. At the same time, we have saved polymer costs of about €15,000 per year and energy costs of about €3,000 per year“

As a result of the savings, the operators of the plant have succeeded in recouping the purchase costs of a machine within just one year.

## MASSIVE SAVINGS THANKS TO TOP PERFORMANCE

Also in another city, it was recently decided to invest in new dewatering plant. The Seinäjoki sewage treatment plant is designed for the equivalent of 100,000 inhabitants and currently operates at around 90 percent capacity. However, the sewage treatment plant also receives its waste water from industry. For example, a nearby large dairy produces waste water that is a little more fatty than is usual.

The sewage treatment plant looks back on 20 years of centrifugal tradition. Since the company was satisfied with the technology due to its low maintenance requirements and good results, the company once again opted for a decanter centrifuge.

„After detailed discussions with my colleagues from all over Finland, we also decided on a decanter centrifuge from Flottweg. Good results were obtained in nationwide tests, so the decision was not difficult,“ commented Juha Korpi, manager of the Seinäjoki sewage treatment plant.

After only a few months of operation a clear picture emerged. The sewage treatment plant can currently



The award-winning user interface Flottweg INGO ensures for safe operation thanks to intuitive designs.

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Two Flottweg C Series centrifuges handle the wastewater of the city of Turku.

reduce its sludge treatment costs by around 25 %. This is also the reason why Juha Korpi is very happy with his decision: „We are very happy with the Flottweg machine. The commissioning went very smoothly and the delivery took place on schedule. The machine’s high performance enables us to amortize the investment within approximately 2 years“

## CONSIDERABLE ACCLAIM IN THE EXTREME NORTH

The most important goal in dewatering is to maximize the reduction of the volume of sewage sludge. Massive savings potential for sewage treatment plants worldwide can be discovered here. The decision to use state-of-the-art separation technology for dewatering sewage sludge is paying off. The examples from Turku and Seinäjoki in Finland prove this. Here the savings are so enormous that the purchase is amortized within a few months. A comparison is therefore worthwhile.



**DO YOU HAVE ANY QUESTIONS?  
WE ARE HAPPY TO HELP YOU**

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