

Stafsjö®
SINCE 1666

Case

Innovative wastewater project in Stockholm



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Stockholm is Sweden's capital and home to more than one million people. With an increasing number of residents, every year more and more need to shower, use the toilet and carry out other activities that generate wastewater. The wastewater treatment system is currently being upgraded to cope with continued growth and to meet increased environmental requirements.

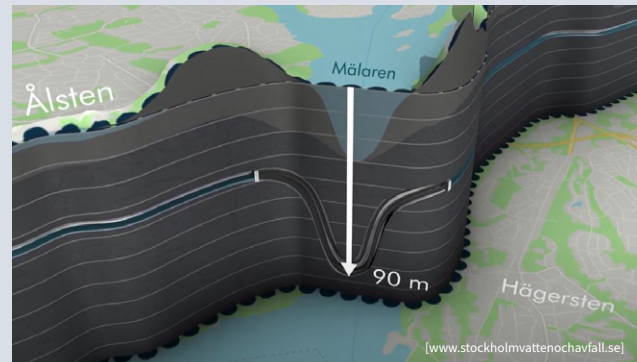
Sweden has committed to reducing phosphorus and nitrogen emissions into the Baltic Sea, which contribute to eutrophication. These commitments are regulated by the Baltic Sea Action Plan and the EU's Water Framework Directive. In addition, lake Mälaren, which is a source of drinking water, must be protected for the next generation of Stockholm residents.

The Henriksdal wastewater treatment plant together with Sickla facility, are now being transformed into one of the world's most modern wastewater treatment facilities, where new technology will handle more wastewater within the same space more or less. The Bromma wastewater treatment plant, which is unable to meet future environmental requirements, will be closed. Instead, the wastewater will be directed through a new tunnel to the Sickla facility that will house coarse purification, sand traps, and primary sedimentation. From the Sickla facility wastewater will be forwarded to the Henriksdal plant for further purification with a new efficient membrane technology. The new process technology will not only double the purification capacity, it will also reduce outgoing levels of microplastics, bacteria, nitrogen, phosphorus and organic materials to meet stricter purification requirements.



New Wastewater Tunnel

A new 14-kilometer tunnel is being built under Stockholm to transport wastewater from the Bromma plant to the Sickla facility for the initial purification stage. The main tunnel is approximately 4,5 meters wide and 5 meters high. The tunnel begins at 27 meters below sea level in Åkeshov and then follows a downward line to the Sickla facility under Hammarbybacken, where the level is minus 43 meters. The tunnel slopes at 1 meter per each kilometer. The slope of the tunnel allows wastewater to flow by gravity.



When the tunnel passes under Lake Mälaren, the tunnel dives to its lowest point of 90 meters below sea level. In this section, the wastewater will be led through a number of pipes. The pipes can thus be continuously flushed clean to avoid challenging sedimentations. Several isolation valves will be needed to isolate the pipe sections during the flushing sequence.

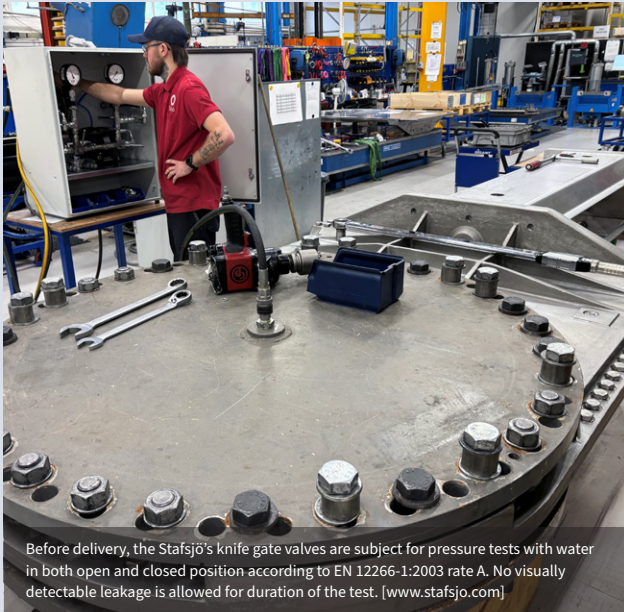
– We are very proud to be part of this project in Stockholm that will have a significant positive impact on the environment of lake Mälaren and the Baltic sea. The 16 pieces knife gate valves type MV DN 1200 (48”), all in full stainless steel, will provide reliable isolation performance for many decades to come, says Andreas Johansson, Sales Director at Stafsjö.

The original knife gate valve type MV was initially introduced almost 100 years ago. This valve model has been further developed over the years to meet various industrial standards. It has become a standard in many industries – especially popular for its ability to always perform and provide reliable isolation. Its modular design and the ease of maintenance will further support an extended life span and a low cost of ownership.

– I am very proud and also pleased that Stockholm has chosen to invest in such a reliable product solution as the stainless steel MV knife gate valve. The fact that the valves are manufactured just two hours from the installation site in Stockholm is quite unique in a globalised world, says Andreas Johansson.

Environmental benefits of the project

- Reduced emissions into the Baltic Sea
- Lake Mälaren will be cleaner
- No malodorous sludge in residential areas



Before delivery, the Stafsjö's knife gate valves are subject for pressure tests with water in both open and closed position according to EN 12266-1:2003 rate A. No visually detectable leakage is allowed for duration of the test. [www.stafsjo.com]

About the project

- The work on investigating Stockholm's future wastewater treatment began in 2012.
- An initial decision to implement the project was taken by the municipal council in May 2014.
- The upgrade of Henriksdals wastewater treatment plant began in 2015 and the plan is to have it completed by 2031.
- The expansion of Sickla facility began in 2019. In 2028 it is planned to be fully operational.
- The tunnelling from Bromma to the Sickla facility began in 2020 and it is scheduled to open in 2027. In May 2025, Stafsjö completed the supply of the 16 pieces MV DN 1200 (48") knife gate valves.

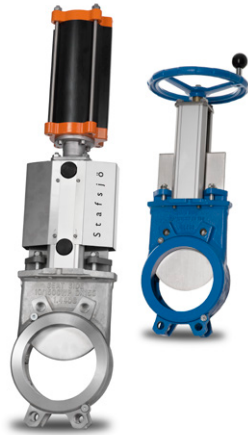
Further information:

<https://www.stockholmvattenochavfall.se/projekt/stockholms-framtida-avloppsrening/>



Stafsjö had the honour of supplying 16 pieces MVE DN 1200 (48") knife gate valves to Stockholm's future wastewater treatment system. Each valve were packed in custom made wooden boxes for safe transport and storage before reaching its final destination. [www.stafsjo.com]

Recommended product range for wastewater treatment



MV

This is a uni-directional high performance valve used on both dry media and liquid fluids such as wastewater, biomass, dewatered sludge and reject, for on/off or modulating operation. Available from DN 50 (2") all the way up to DN 1800 (72"). The modular design and ease of maintenance, with replaceable sealing parts, ensures low cost of ownership and makes it a sustainable choice.



WB14E

This is a resilient seated high performance shut-off valve with superior flow characteristics, offering bi-directional zero leakage shut-off up to size DN 900 (36"). A fully lugged valve body makes it suitable for dead-end service and a reliable product solution for maintenance personnel. Introduced in 2016, this product will bring valuable features to water and wastewater processes for many years to come.



WB & WB11

These are semi-lug type (wafer) shut-off valves in coated nodular iron, often used as economical valve solutions in biomass and wastewater systems. Valuable features such as superior flow characteristics, bi-directional zero leakage shut-off and integrated flange sealings (up to DN 600) comes with it as standard.



WB14

This is a fully lugged shut-off valve in nodular iron, available from DN 50 up to DN 600 (2" - 24"). Features such as superior flow characteristics, bi-directional zero leakage shut-off and integrated flange sealings comes with it as standard. The dead-end capability adds another safety feature valuable for operating and maintenance personnel.



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