

Hammarby Sjöstadsverket tests new treatment methods

Hammarby Sjöstadsverket in Stockholm, Sweden, was built as part of the Hammarby Sjöstad initiative, with the aim of halving environmental impact by demonstrating new technology and innovative solutions. The facility is now continuing to serve as a development centre for new water treatment technology.

A sewage treatment plant was built as part of the Hammarby Sjöstad project to test new treatment processes and technology. The Royal Institute of Technology and the Swedish Environmental Research Institute (IVL) took over Sjöstadsverket in 2007 to turn it into a centre for innovative municipal water treatment. It will contribute to demonstrating Swedish water and environmental knowhow through research. The plant will strengthen development in the industry and improve the prospects for Swedish exports in water and environmental technology.

Sjöstadsverket is a very successful example of how innovative investments can lead to great progress which in the longer will benefit the whole of society.

POSITIVE EFFECTS ON ENVIRONMENT AND ECONOMY

- Improved prospects of raising biogas production and reducing phosphorus emissions biologically by completely separating wastewater from households from surface and drain water.
- Lower levels of heavy metals in the sludge, since surface water is treated separately. This improves the prospects of returning the sludge to the ecocycle.
- The plant recycles nitrogen as effectively as urine separation in the home.
- The project enabled smaller and innovative companies to test innovative solutions.

Photo: Thomas Henrikson



IMPLEMENTATION

Four parallel lines were constructed to treat incoming wastewater: aerobic treatment with active sludge with biological nitrogen and phosphorus reduction, aerobic treatment with drum filters, membrane bioreactor and reverse osmosis, anaerobic treatment with fluidized bed and reverse osmosis and anaerobic treatment with UASB (Upflow Anaerobic Sludge Blanket) and biological polishing. A separate part deals with the sludge.

The purpose of the parallel lines was to test different solutions under otherwise identical conditions. Due to problems of getting one of the lines to work satisfactorily, another line was installed during the course of the project, on a smaller scale.

Treatment has not been devoid of problems. But modifications and new solutions have enabled many problems to be successfully solved and important lessons to be drawn.

POTENTIAL AND FUTURE BENEFIT

It is important to create sustainable and ecocycle-adapted water and wastewater systems, both for infrastructure and for environmental efforts. Re-use of nutrients, energy and water in the wastewater is part of the ecocycle adaptation of wastewater systems. Developing, testing and commercialising new environmental technology in this area is therefore strategically important.

WHY BEST PRACTICE

The lessons learnt can be scaled up to significantly larger treatment plants. These results will benefit the wastewater industry throughout northern Europe.

Sjöstadsverket will offer an arena for long-term cooperation between researchers, municipal sewage treatment plants and industry, and provides a place where Swedish companies can demonstrate technology and methods to national and international operators.

The project has attracted world-wide attention. Around 30 university students have undertaken degree projects at the plant, and many environmental technology firms have tested out their ideas.

FOR FURTHER INFORMATION

Contact:
Östen Ekengren, IVL, +46 (0)8-598 563 43, osten.ekengren@ivl.se
Berndt Björleinius, Stockholm Vatten VA AB, +46 (0)8-522 124 85, berndt.Bjorlenius@stockholmvatten.se

Contractors/providers:
Stockholm Vatten, AnoxKaldnes, IVL, JTI, Tyréns, SWECO, Goodtech MRab, Nordcap, Hydrotech, Uppsala University and others.

The project on the Internet:
www.sjostadsverket.se

For further information on Best Practice:
www.swedishepa.se/bestpractice
www.naturvardsverket.se/mir

FACTS

LIP Stockholm 1998
Action 1
Grant: MSEK 15
Environmental investment: MSEK 28

