SITE VISIT 2 – Demosite wastewater treatment technology Leeuwarden, hospital waste water, Antonius hospital Sneek and "WATERSCHOON"; black and grey wastewater separation at source in Sneek

Organisation: The Frisian water authority Wetterskip Fryslân and the municipality Sudwest Fryslan, housing organization Elkien, research institute Stowa and consultancy DeSah

Description of the site visit

The visit will be conducted over two cities: Leeuwarden and Sneek. Wetterskip Fryslân has built a demosite at the waste water treatment plant (WWTP) Leeuwarden in close collaboration with Wetsus. The demosite is a research site for wastewater treatment technology that is unique in the Netherlands and in the world. The demosite in Leeuwarden facilitates companies, research institutions and water authorities to conduct quick and efficient research in order to promote the development of innovative and sustainable wastewater purification technologies. All of the existing process flows of a WWTP, such as influent, effluent, sludge, have been made available at a central research location at the demosite. The site has been set up in 'plug & play' fashion, allowing research equipment to easily be connected to the piping. There is room for at least four 40 foot containers for technological research.

Photo 1 and 2: "Plug & Play" at the demosite wastewater treatment technology Leeuwarden

The other part of the visit will begin at the Anthonius hospital in Sneek. In 2014, the Sudwest Fryslan municipality and Wetsus collaborated to create the water technology company Desah, the Frisian Water Authority and Antonius Zorggroep, a research facility near this hospital. This demosite is built for companies and research institutes to easily test, demonstrate and upscale technologies for treatment of hospital waste water.

Wastewater from hospitals receives special attention due to the presence of residues of medical drugs and antibiotic-resistant bacteria, which are not always removed in a conventional waste water treatment plants. Permits are available. A company can easily connect their pilot to the existing facilities and it is plug and play.


Photo 3 & 4: Demosite available at the Anthonius hospital in Sneek

The last part of the visit will be at the "Waterschoon" project location in Sneek, where the wastewater of 150 newly-built houses is collected separately at source and purified in a small sewage treatment plant located in the district. In the houses, black wastewater derived from vacuum toilets and kitchen grinders is collected seperately from the grey wastewater from the shower, washing machine and dish washer. The local sewage treatment plant converts the black water directly into biogas. Heat is being recovered from the grey water effluent. Both the recovered heat and the produced biogas from the Waterschoon treatment plant are being delivered back to the houses in the district. Part of the nitrogen and most of the phosphate are converted into struvite, an alternative soil fertilizer.


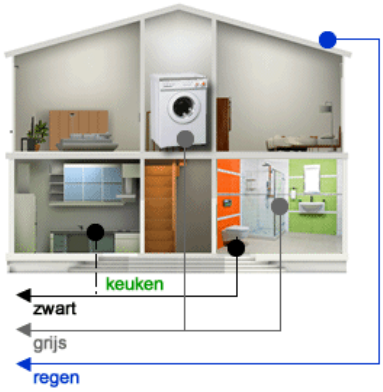

Photo 5 & 6: The small sewage treatment plant of project Waterschoon in Sneek where Separation at source of black (zwart), grey (grijs) and rainwater (regen) takes place.

What is innovative about these projects?

Facilitating research can eventually lead to cost savings and / or improve the functioning of the sewage treatment plants. Water technology companies can move faster to market launch and sales of a newly developed technology. The demosites can quickly lead an idea into a successful and profitable technology.

Time/accessibility/other information:

The tour will start at 9:00 and will depart from Leeuwarden. After a 15 minute, ride the visitors will spend 30 minutes at the WWTP of Leeuwarden. After this, the tour will continue at Sneek, where visitors will first go to the site of the Anthonius hospital for 45 minutes before going to the "Waterschoon" site to finish the visit and then return to Leeuwarden. The maximum number of attendees is 50 persons.