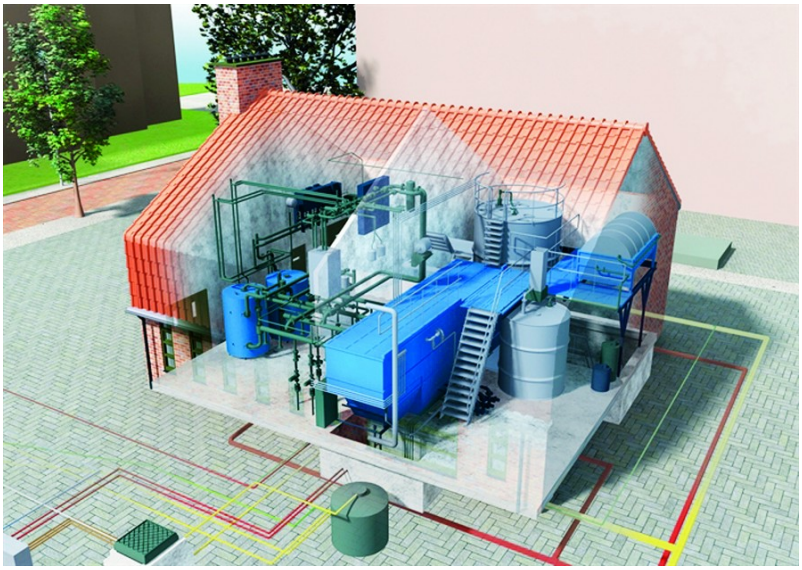
Waterschoon, Sneek

Waterschoon © Waterschoon

A sustainable and innovative water treatment system has been installed by several local entities; Wetterskip Fryslân, Woningstichting de Wieren, STOWA, the municipality of Súdwest-Fryslân and DeSaH bv, in the Noorderhoek district of Sneek. Wastewater from 232 new homes is collected separately at the source and cleaned in a small treatment facility in the district. The Waterschoon project is the first in the world on this scale.



Nutsgebouw impression © Waterschoon

(http://www.groenblauwenetwerken.com/cms/../uploads/Noorderhoek-sneek-resize_waterzuiveringssysteem_Centrale1.jpg)

SEPARATE AT THE SOURCE

In this district organic waste together with water from toilets (blackwater) is collected through a vacuum system. The special vacuum toilets need only 1 litre of water per flush, while a standard toilet uses 7 – 8 litres per flush. Household wastewater (greywater) is discharged from the home. The blackwater and the greywater are treated separately in a local wastewater treatment plant in the district itself. The greywater is then discharged into the rainwater sewer system. The greywater from showers and washing machines is less dirty but has much more volume than the blackwater. By treating them separately the treatment is simpler and uses less energy. In regions with water shortages the treated greywater could be used for toilet flushing or horticultural businesses.

BIOGAS PRODUCTION

Blackwater from all connected homes comes together in a fermentation installation in the energy building. During fermentation biogas is released which is partly used for heating homes and tap water. Around 12 percent of the total gas demand in the district is produced this way.

HEAT EXTRACTION

The greywater, coming from the washing machine, dishwasher, bath and shower is also treated in the energy building. Most of this water is heated and still has – even after transport – a high temperature. This heat is extracted and used to heat homes in the district.

ENERGY AND WATER CONSERVATION

A savings of 10 percent can realised on heating the houses by extracting heat from the sewer water. Producing biogas from sewer water means an extra savings of 10 percent. This is

combined with a thermal energy storage installation and a heat pump located in the energy building. Further advantages include:

- Water conservation by households (25-50%)
- Removal of harmful substances (more than 90%) from the wastewater, such as nitrogen, phosphate and drug waste
- Reduction of polluted by-product streams (sewage sludge)
- Generation of energy from wastewater, and therefore savings on space heating and with that a reduction of CO_2 emission.
- Conversion of chemical elements such as phosphate into fertilizer

[Waterschoon, 2011]

Source: http://www.urbangreenbluegrids.com/measures/waterschoon-sneek/

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Green-blue urban grids make cities sustainable, resilient and climate-proof. This website and the design tool will help to find fitting measures and inspires with attractive examples.