



Ootmarsum



The Ootmarsum wastewater treatment plant (WWTP) must be modernised, and needs a more effective treatment of the sewage. The WWTP discharges the treated wastewater into a water system with considerable ecological potential. An innovative approach to the urban water cycle in a region of significant natural value requires a coordinated effort. Therefore also participation in the European Interreg IIIB programme (Urban water cycle) was sought. The choice fell on the option, referred to as a hybrid system: alongside a conventional treatment system with sand filtration, a membrane bioreactor (MBR) is installed. This leads to a good price/quality comparison.

The following parts of the WWTP are co-financed by the Interreg programme:

1. Disconnection of sewerage water: The rain water flow of a number of neighbourhoods has been disconnected from the sewerage system to prevent overflows into the stream system during heavy rainfall. Combined with extra buffer facilities in the sewerage system the WWTP did not have to be hydraulically extended.

2. Buffer sedimentation tank: after the wastewater has been distributed over the purification system the MBR supply flows to the buffer sedimentation tank. The wastewater is buffered in this tank and then it is processed via the MBR in controlled quantities. If the supply of sewerage water is too large the buffer tank overflows and the sewerage water enters the conventional part of the WWTP. The concentrated wastewater from the bottom of the buffer tank is pumped to the MBR which

- as a result of this - mainly becomes more biologically loaded. Removal of floating layers also takes place in the tank.

3. Measurement and control technologies: the effluent of Ootmarsum WWTP must meet strict legal requirements. With simple measurement and control technologies good effluent qualities can be realised. To achieve an even greater removal of mainly nitrogen and phosphorous with a minimal use of energy, many sophisticated and innovative measurement and control technologies are needed. Additionally the future linking of the conventional plant and the MBR part requires these technologies.

4. Sand filter: the effluent that comes from the conventional part of the WWTP is lead through a sand filter before it flows into the Wiemselbeek stream. In this filter the last suspended solids are removed from the effluent.

5. Ecological filter: Although the purification process makes the wastewater clean, it doesn't contain any living plants and animals like the Wiemselbeek stream into which the purified water is discharged. As an extension to the purification process the water passes through a system of water bodies and reed zones in which various types of plants and small organisms live. These ensure that the water resembles, as far as possible, the natural water in the Wiemselbeek stream and the Ottershagen nature area further downstream.

6. Monitoring programme: the performance and characteristics of the various steps of the different purification methods will be monitored after the completion of the construction works. In this comparison we will focus on:

- heavy metals and organic micro-contaminants;
- quality requirements associated with the 'ecological filter';
- generating information for the drawing up of an operational concept for a (hybrid) MBR installation.

Further consideration will be given to hormone-disrupting substances and medicines.

