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paintings and poetry posters about the theme water. During an excursion to a wastewater treatment plant they could also see - and smell - how dirty the sewerage water is on entering the plant and how, with the help of bacteria, it is made clean so that it can once again be pumped back into local ditches. At the Van Hall Polytechnic Institute for Environmental Education, the older children could look through a microscope to see which animals, snails, worms, etcetera live in ditch water.

Enthusiasm

The schools project will soon be rounded off with a visit to the so-called Adventure Island where, in the framework of the Urban Water Cycle project, a plant has been placed to convert groundwater into drinking water. According to one of the teachers involved the project has more than answered its objective: "Now the pupils realise that water coming out of a tap cannot be taken for granted. They now know what this involves. The considerable interest of the pupils for these water activities struck us. Their enthusiasm was clearly visible. To be honest this ought to be a fixed part of the curriculum."

Kameleon Island

On the Adventure Island a self-contained sanitary building has been constructed that uses the island's own water supply and sustainable energy sources. The project was realised in cooperation with students from the Friesland College and Aquario, a subsidiary of Vitens and Wetterskip Fryslân. In the Netherlands most of the drinking water is obtained from groundwater. The test plant, with a capacity of 4000 litres drinking water per hour, has been tested and is now ready for use. 'De Kameleon' was of course used as a barge to transport the plant. Zeolite is used in the water purification process. The method used and the scale of the operation is unique and offers many possible applications. The official festive opening of the facilities will take place on Friday 22 June 2007.

Further information
can be found at:
www.urbanwatercycle.org
or by sending us an e-mail:
uwc@wrd.nl

water

PROJECT PART-FINANCED
BY THE EUROPEAN UNION

Four partners from different regions around the North Sea, working together to improve the urban water cycle.

UWCUPDATE

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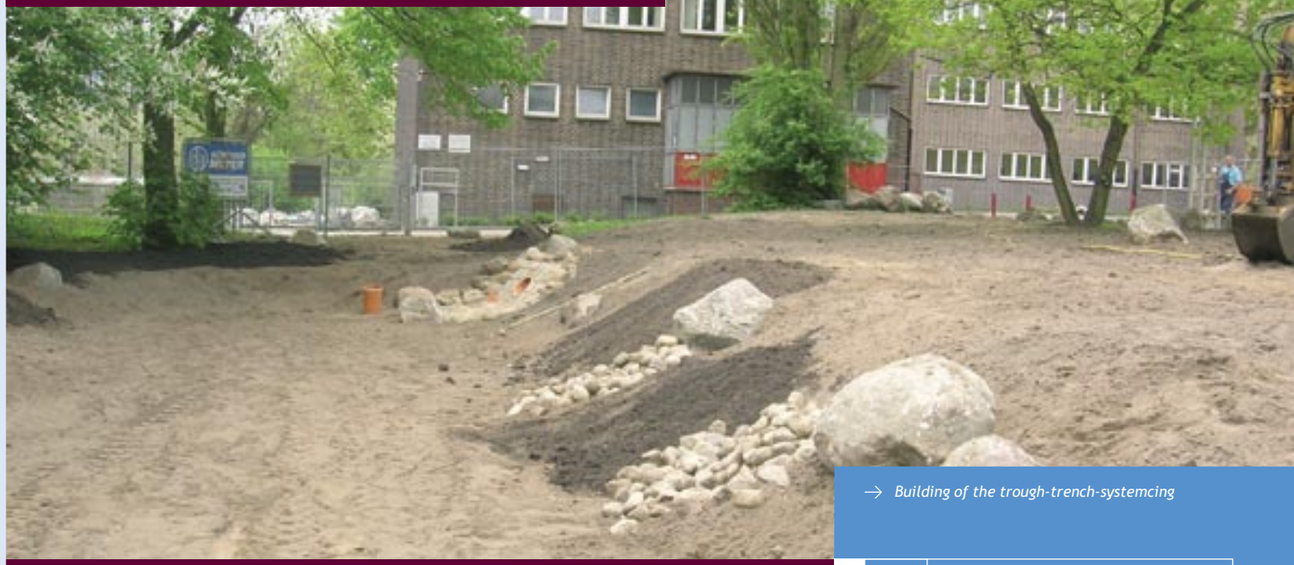

→ Building of the trough-trench-systemcing

content

Foreword

During the past year many projects have reached the end phase of realisation. At the end of 2006 65% of the budget had been spent. Some problems were encountered with the realisation of a stormwater treatment plan in Hamburg, but a solution has been found in consultation with the the secretariat in Viborg.

The entire UWC project has a delay of three months. The end date of the UWC project will be 29 February 2008. Over the last few months discussions have bee held about the indicators, the closing meeting and the final report. The closing meeting will take place in Amsterdam on 12 and 13 September 2007 in cooperation with the NORIS project. On the first day there will be presentations and discussions about the impact of the measures from the UWC and NORIS projects, the sustainability of the projects and the lessons learnt from the projects. On the second day there will be a mini symposium entitled 'Water, society and communication' with speakers from different countries.

In July 2007 a special meeting will be held about the realisation of the final report. This will focus on integrating the knowledge and the regional projects, and deciding the content of the portfolio that will be available to participants of the closing meeting.

The overall-management,
Ted de Jong

NL	project	Regge en Dinkel: Quality water in an ecologically valuable environment

Water board staff get a trim

On Monday 23 April more than 75 staff from Regge and Dinkel district water board had their hair cut by the staff of hairdressers 'Kuypers Haarmode'. Not because it was high time for fashionable hairdos at the water board, but because hair was needed for an experiment at the new hypermodern wastewater treatment plant (WWTP) Ootmarsum. *continue →*

NL | project | Regge en Dinkel: Quality water in an ecologically valuable environment

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In August 2005, the district water board started to build a so-called hybrid MBR (Membrane BioReactor) in Ootmarsum. However, hairs are unwelcome guests in an MBR plant. Balls of hair can block the membranes as a result of which the sludge/water separation decreases considerably. This is prevented at WWTP Ootmarsum by placing so-called drum sieves. These must ensure that the hairs are removed from the water. As we were not certain about the optimum operating conditions for the sieves, an experiment first of all had to be done. This would allow the functioning of the drum sieves to be optimised before there plant is commissioned. And for such a hair experiment you need an awful lot of hair! Kuypers Haarmode (nominated five times this year for the Hairdresser of the Year Award) was prepared to help the district water board out with this. And so large numbers of Regge en Dinkel staff had their hair cut by Kuypers Haarmode staff at the water board office in Almelo. The hair was collected and used for the experiment that took place in mid-May.An added benefit of this action: lots of press coverage and fair trendier hairstyles at Regge and Dinkel!

D | project | City of Hamburg: Storm water treatment in a large city

Stormwater Management: Marienthal Wandsbeker Gehölz - Flood control measure

In the catchment area of the Wandsbeker Gehölz, flooding on the streets and private sites occurs as a result of the combined sewer system becoming overloaded. Therefore different solutions for reducing the flooding were discussed. The main goal of these solutions is to reduce the flow of rainwater into the sewer system.One of these solutions is the additional installation of backflow flap in existing inlets in the Osterkamp street. The valve will close the inlet when the maximum capacity of the sewer is reached Principal cross-section of the backflow protected inlet with second outlet. After the inflow into the sewer has been blocked, a second pipe system is activated, which leads the additional stormwater through a retention pond, where solids can be settled and retained, to the vWandsbeker Gehölz. Accordingly the swampy area of the Wandsbeker Gehölz can be used for both recreation and retention purposes.

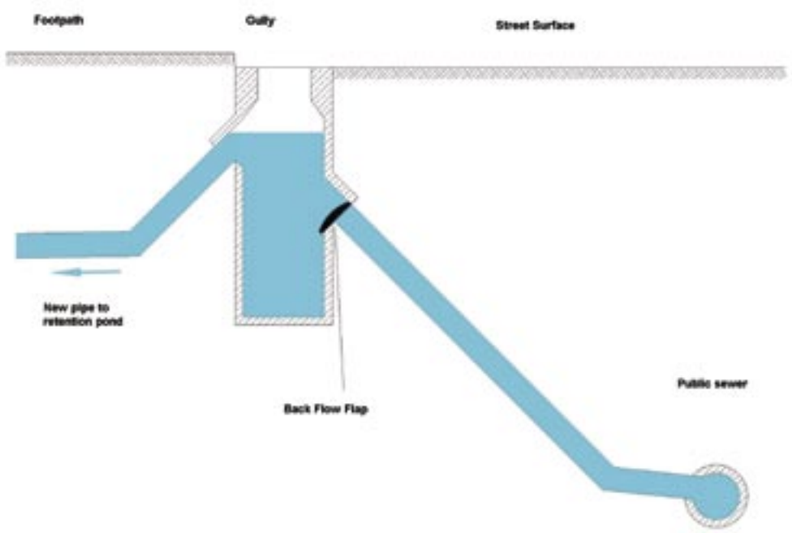
Scheme of the additional pipe system for the storm water that leads the storm water to the retention pond.

→ *Infiltrative pavement on the schoolyard*

D | project | City of Hamburg: Storm water treatment in a large city

Pilot Mittlere Bille Disconnection of public areas is continuing

Following the implementation of five INNODRAIN elements to demonstrate disconnecting measures on minor roads (see newsletter 3), activities are now focussed on a demonstration project to show disconnection on public properties. The sealed areas of a school (Leuschnerstraße) including roofs and schoolyard (approx. 8400 m2) will be connected with a large trough trench system. With this retention system the runoff can be retained and infiltrated into the ground via grassed soil. A connection with the public sewer system is no longer needed. The infiltration capacity in this area is high enough to ensure a total infiltration of the runoff water. Together with the infiltration facility, different changes of the surface in the schoolyard are being planned in collaboration with a landscape architect. For example, infiltrative pavement will be introduced and in some parts the pavement will be removed. Once the construction and remodelling of the landscape has been completed this summer, the school will have a refurbished schoolyard. Furthermore, these measures will provide a very attractive green area for recreational use in dry weather conditions. This attractive construction is a component on the way to rehabilitating the Mittlere Bille and will reduce stormwater runoff into the Mittlere Bille by nearly 3%.



→ *Principal cross-section of the backflow protected inlet with second outlet*

NL | project | Fryslân: Combining various insights and methods in four innovative new projects

Water education in the Vrijheidswijk neighbourhood in Leeuwarden

In the Vrijheidswijk neighbourhood in Leeuwarden a large-scale renovation programme is underway to modernise the neighbourhood and to improve the social climate. Water plays an important role in this. To maximise the support for the project, the residents of the neighbourhood are actively involved in the water plans. As an extension to this, a programme about water was set up in two primary schools that mainly have pupils from ethnic minorities. The aim of the programme was to make children aware of water in all its different forms - tap water, sewage water, rainwater, pond water, etc. – and the significance of this for their daily lives. At the school all of the children – from infants to the oldest age groups - had lessons about the water cycle over a period of several weeks. They could also carry out a lot of experiments with water and make

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→ *To extend the sharing of knowledge from the UWC project into various disciplines within Bradford Council, a large group of councillors visited some regional projects in the Netherlands. A report of the visit will be available shortly and will put it on the website.*