



→ Complete wetland picture

GB project Bradford: Visible water in a former English textile city

Bradford

Local communities take wetlands to heart

Construction of community wetlands leads the way for Bradford Urban Water Cycle pilot projects.

Despite initial reservations amongst members of the local communities, the Bradford wetlands projects appear to be a resounding success. Following the completion of construction in April 2005, local residents and volunteers have joined with schools to plant reeds and other wetland species, clear unwanted invasive vegetation, and make other environmental improvements around the wetlands.

The wetlands were originally conceived to provide information for the use of natural processes to improve water quality for urban regeneration projects. However, they are also being used to assess the potential contribution to the development of social cohesion and inclusion within local communities. This means that in addition to a programme of sampling and

testing to assess water quality improvements, a study of community involvement is taking place. This study will assess attitudes to the wetlands themselves and to the processes by which the local communities were involved. These processes included consultations prior to the design and construction of the wetlands, prior to planting and the formation of a steering group which now meets at regular intervals to discuss maintenance and the development of new amenities to enhance the surrounding areas.

The study also addresses a developing programme of activities involving local junior and high schools. These activities provide real experiences to complement the school curriculum, and include assistance with the initial planting, biodiversity assessments within the wetlands and the surrounding areas, and the creation of publicity material for the projects, initially through a competition for the design of the project signboards. This process provides the vehicle by which the broader aspects of water management will be introduced to schools and the wider community. The wetlands have caught the attention of local media and several articles and interviews have arisen from

the interest generated. It is intended to maintain this interest by publicising in turn, each of the pilot projects, including: the construction of a test facility for high tech, small footprint processes for the improvement of river water quality, the strategic flood risk assessment using hydrodynamic models of the river and sewer system to demonstrate the need for disconnection and source control to combat the impacts of climate change and urbanisation, and the construction of demonstration source control projects.

City of Bradford
www.bradford.gov.uk

City of Hamburg
www.hamburg.de

Province of Fryslân
www.fryslan.nl

Regge en Dinkel Water Board
(lead partner)
www.wrd.nl

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



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

content

→ Foreword from the lead partner	1
→ Modernisation in Ootmarsum started	1
→ Identification of WFD-proof water treatment ...	2
→ Storm Water Management and Disconnection ...	3
→ Local communities take wetlands to heart	4



Foreword from the lead partner

The UWC project was approved in May 2005 and we immediately started with the organisation and implementation of the project structure and with the further preparation of our regional and knowledge exchange projects. It soon became apparent that all of the parties involved needed more time for the preparation phase. As a result the investments did not keep pace. Now most of the partners have completed the preparations and they have started to realise the projects during course of this year. The planned investment level is now in sight. As a result of a fusion process, Karlebo municipality experienced extra difficulties in meeting the requirements and investments agreed upon and even-

tually had to withdraw from the project. The other partners compensated for the withdrawal of Karlebo with new projects to fill up the budget and indicators. We will inform you about these new projects in the next newsletter. The cooperation between the partners is good and cooperation is also being sought with other projects within the subsidy programme. As the project has such a broad scope, the interaction between the knowledge exchange projects and regional projects requires specific attention. Over the past 18 months, four coordination group meetings have taken place and five workgroup meetings have been held within the context of the knowledge exchange projects. After a somewhat slow start the realisation of the UWC project is in full swing!

The overall management, Ted de Jong

Modernisation in Ootmarsum started

September saw the start of the first phase of the modernisation project at Ootmarsum wastewater treatment plant. With this modernisation the oldest town of Twente will gain a hypermodern 'water factory' to purify wastewater from the region. The purification technology soon to be implemented here has never been used elsewhere in this manner. And that is something special! At present the groundwork is being done and the foundations are being laid. Unfortunately we will have to wait a little longer before the advanced technology can be put in place. It will be 2006 before the membranes which form the heart of the process will be placed in the installation. At about the same time the sand filters will also be delivered to the treatment plant. That will be a considerable undertaking because of the difficulties in transporting the filter by road. As we

continue →

continue ↓

do not have any experience with this new technology and how it is being used here, Norit (a company specialised in purification techniques and the supplier of the membranes) is testing a pilot installation in a container. A small version of the plant so to speak. The new design will be tested in this installation for possible teething problems and its performance under various circumstances will be assessed. "This means that when the real purification system is commissioned, we all know exactly how it responds to certain things and how we can best operate it", says Dick de Vente, purification engineer. "The membranes which we are going to use are sensitive and using them as a bit more complex than running a standard purification plant. Quite a challenge therefore!" "The design and construction of the ecological filter has not been completely worked out", says Dick. "We already know how such a filter could work, but they can be made in various ways. Therefore we still have a lot of work to do in this respect over the next few weeks."

The disconnection project has also started

In order to reduce the pressure on the purification process and to limit local flooding, some of the houses in the village Tilligte will be disconnected from the sewerage system. Dinkelland municipality has already started to construct the first wadi. Most of the rainwater will soon be drained off aboveground and subsequently transported underground to an IT sewer (infiltration pipe). From here it will infiltrate the subsoil and/or be discharged to a wadi or ditch. The project will be completed at the end of 2005.

Knowledge exchange meetings 'Urban Water Cycle management' and 'Flows' a success

"The meetings were well-attended with plenty of active participation", says Ted de Jong describing the knowledge exchange meetings held on 19 and 20



→ A small version of the plant is tested in this container

September 2005. Ted: "However we did notice that the subject of water management is extremely difficult. In April 2006, the administrators and experts will come together and we will be able to explore the subject in greater detail. Following the withdrawal of Karlebo, the partners Regge en Dinkel and the province of Fryslân will think about how to pick up the theme Society.

Aqualân Grou

At Grou sewage treatment plant, Wetterskip Fryslân's plans for realising an ecological filtration system are already at an advanced stage. This ecological filter, called Aqualân Grou, will purify and reactivate the effluent from the wastewater treatment plant using the so-called 'water harmonica' strategy (Figure 1). The Water harmonica is a means of transferring well-treated wastewater to 'healthy and useable' surface water. An ecologically-engineered filter can combine various functions (e.g. food chains involving daphnia, fish and birds) to achieve several environmental and nature-oriented goals. For example the combination of wet-nature and wetland systems is easy to achieve, but the integration of active biological management or storage can also be combined with this method of effluent treatment. In the case of Aqualân Grou the treated effluent will be suitable



→ Figure 1: water harmonica

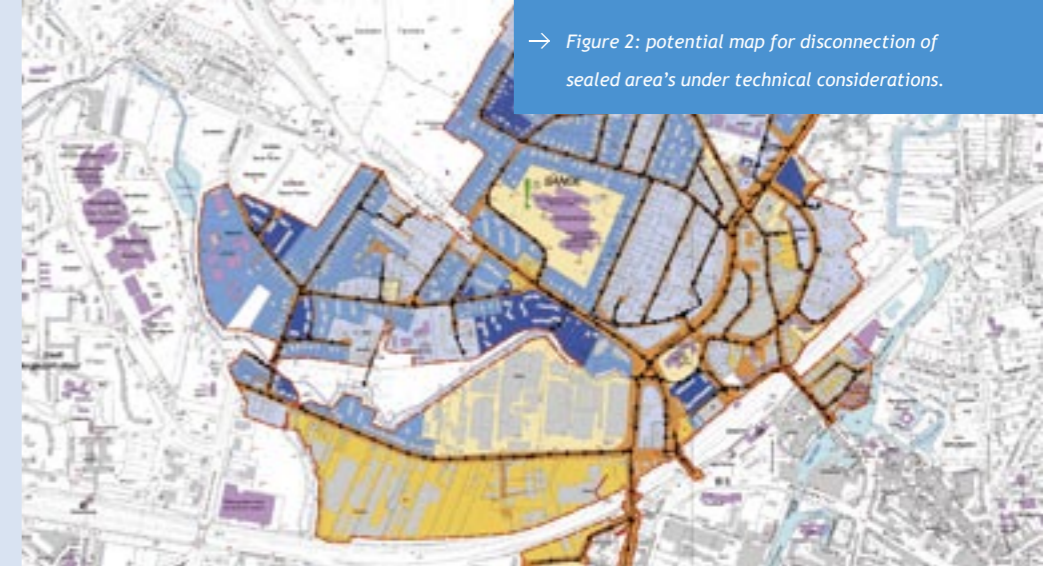
for creating a breeding ground for pike. The first excavations has been started in October 2005 and the entire project will be completed by June 2006. Further information on the water harmonica can be found at www.waterharmonica.nl. For information about the Aqualân Grou project please contact Mr S. Gerbens of Wetterskip Fryslân (tel: +31 (0)58 292 2411 or e-mail: sgerbens@weterskipfryslan.nl).

Water chain on Kameleon island in Terherne is gradually being realised

The realisation and demonstration of the water chain is the key component of the UWC Kameleon island project. This covers

Storm Water Management and Disconnection potential maps for UWC Hamburg

In the Urban Water Cycle project Hamburg 3 project ,catchments will be examined for the appropriate storm water management. Different maps, based on GIS data, have been produced during the project to examine which type of stormwater management by infiltration would be suitable for certain areas. The main boundary conditions are groundwater level, soil condition, infiltration capacity and building types (Land use). The maps are created by an appropriate intersection of the boundary data. The Figure shows the potential map for disconnection of sealed areas under technical considerations. Another map shows the



→ Figure 2: potential map for disconnection of sealed area's under technical considerations.

different possible that the possible infiltration solutions differ per area. A decision-support tool that works in a GIS environment was used to construct the maps. A simulation model was built using the software STORM. This provided detailed information on the flow, water balance and flux of the present state under different scenarios, so that a comparison could be made in terms of investment, reduction of COD, TSS, and runoff limitation. Based on these factors the best scenarios or mix of scenarios in a catchment area were selected. A cost/benefit tool was

then used to visualise the effect of the different scenarios on the catchment, so that policy decisions can be taken. In preliminary studies for the Bille catchment, possible methods considered for stormwater management were a centralised detention tank followed by a soil filter, decentralised treatment with gully filters INNOLET and disconnection of areas on the site of the Fachhochschule Bergedorf, a small university in the catchment area. Potential maps and maps for stormwater management were also prepared for the other two project areas.

Fryslân

Identification of WFD-proof water treatment technologies

In January 2005, under the auspices of UWC, Wetterskip Fryslân joined a common initiative of Stowa and Riza. The aim of this partnership is to identify potential water-treatment technologies that satisfy the demands of the new European Water Framework Directive (WFD). Witteveen en Bosch have collected information about this from all of the countries involved in the UWC project. Their report has been published in Dutch in October and an English version will become available soon.

the entire process from drinking water extraction and production, drinking water distribution and drinking water use to wastewater collection, water transport and wastewater treatment.

- the island may not be completely dependent on technology;
- the systems placed must be constructed in a sustainable and robust manner.

The project was officially launched on 3 October 2005 with the drilling of a groundwater well. The other aspects of the project will largely be realised in spring 2006.

Vrijheidswijk Leeuwarden: preparations underway

Water will play a key role in revitalising the socially-disadvantaged Vrijheidswijk. The plan is to create a large body of water as a branch of the river Dokkummer Ee. A link will then be made between Bonkevaart and Dokkummer Ee via the other existing ponds. This will improve the flow of the water through the estate. At the same time the banks at various locations will be made more wildlife

friendly and the rainwater discharge will be disconnected. This will improve the amenity value and use of the water and this will contribute to a better quality of life on the entire estate.

The plans for the new body of water have already been discussed in a public meeting and the necessary preparations are in progress. The redevelopment plans for the centre are still being drawn up.



→ Official launch drinking water system Kameleon Island