



# The role of consultancy firms in the application of new wastewater purification technology

BERT GERAATS, GRONTMIJ

PETER DE JONG, WITTEVEEN+BOS

JANS KRUIT, ROYAL HASKONING

HELLE VAN DER ROEST, DHV WATER BV

The Netherlands has a strong foundation in the field of wastewater treatment. The country has a long history of developing and introducing new biological wastewater purification technologies on a practical scale. Some of the most talked about examples of these technologies, which are well known throughout the whole world, are anaerobic wastewater purification in accordance with the UASB principle, the Carrousel system, BCFS, and the Sharon and Anammox nitrogen removal technologies. Important success factors in these are the traditionally strong microbiological basis in the Netherlands and a unique work method that aims to integrate disciplines. The primary matter of importance is that only a practice-oriented application of scientific developments to the practical scale will lead to a successful application for the end user. In the Netherlands, consultancy and engineering firms fulfil a pivotal role in this application.

The responsibility for the purification of household wastewater in the Netherlands has been incorporated in approximately 25 water boards. The traditional procedure in the Netherlands when adapting a regional water purification installation can be generally described as follows.

First, a technological concept is chosen based on the end user's requirements. This is then fleshed out in a basic design, a detail design and a specification. Finally, after tendering, realisation and start-up are commenced. Consultancy firms are involved by end users in all these steps as designers and managers of the construction phase.

In essence, the activities of the consultancy firms in the typical project route described above are multidisciplinary by nature. Integration between the disciplines concerned and co-operation in the design and construction process are essential for a good price/quality ratio. Consultancy firms are the liaison between knowledge institutions, suppliers and end users. In this role the

consultancy firms constantly look out for global developments in both technical and technological fields. The market supply of

suppliers is closely monitored and developments among suppliers and knowledge institutions are also identified in good time. Initiating and redirecting developments into relevant practical conditions is performed by many consultancy firms. Because they are involved in the construction, start-up and optimisation of regional water purification installations, consultancy firms possess knowledge about the practical situation; they are excellent discussion partners for the end users. As intermediaries, consultancy firms can ensure the correct communication level in a project thanks to their knowledge about the customer's circumstances. This is because the consultancy firms are more willing and able to create an open atmosphere for specific knowledge transfer, whereas confidentiality and secrecy of information play a much greater role among suppliers.

## MBR and other new developments

In 2000, a start has been made in the Netherlands with the pilot research on the regional water purification installation in Beverwijk, with a plan for the development and large-scale introduction of MBR technology for the treatment of household wastewater. The pilot research has led to new insights into the design and the operational management of MBR. These insights have been implemented in practise at the recently opened MBR Varsseveld. Furthermore, the preparations for the realisation of another three large-scale MBRs for household wastewater are in full progress. This concerns the projects in Heenvliet, Ootmarsum and Hilversum. The plan mentioned above is characteristic for the 'Dutch school' and for the role of consultancy firms in applying new wastewater purification technology.

Carrousel, Geestmerambacht.



