

# About IKT



IKT, Gelsenkirchen, Germany

IKT - Institute for Underground Infrastructure is a neutral, independent non-profit institute, and works on solving practical and operational issues concerning underground sewers, pipes and other conduit engineering, its primary focus being on sewer systems. The institute conducts research projects, material testing, CIPP liner testing, consultations and seminars on the construction, operation and renovation of underground infrastructures.

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## **Project F205: Municipal PR activities on private waste-water systems**



NRW-Bildreferenzkatalog  
- Private Abwasserleitungen -

The NRW environment ministry's  
“Private waste-water sewers”  
image reference collection

In Phase 1 of this project for the Environment Ministry of the state of NRW, the tools and materials used to provide the public with information about private sewer pipes are to be refined. Various new mechanisms and tools are to be created or further developed for this purpose.

In addition, an aid to decision making about the refurbishing of site drainage systems is to be developed to assist owners and system operators through advisory services for the preparation and implementation of refurbishing projects. An image reference collection, developed during Phase I is also to be augmented, and verified.

## Project title

“Municipal PR activities on private waste-water system:  
Communication concepts for PR work and investigations into  
damage assessment and advisory refurbishing services (Project  
Phase II)”

## Download report

(German version only)

NRW image reference collection – Private waste-water sewers  
(54 pages)

# **Project management**

IKT - Institute for Underground Infrastructure

## **Client**

Ministry for Climate Protection, Environment, Agriculture, Nature Conservation and Consumer Protection of the German State of North Rhine-Westphalia (MKULNV)

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**Comparative assessment of  
innovative inspection  
procedures and equipment for  
site drainage systems**



Sewer camera in use

This research project involves the development of a test programme to comparatively test and evaluate the inspection procedures and equipment currently available for site drainage systems. Practical experience is to be gathered in pilot deployments in cooperation between the Meyer-Entsorgung disposal company and the City of Osnabrück. In addition, general recommendations for action to provide both the public and system operators with assistance prior to the actual inspection are to be drafted, based on experience from the City of Osnabrück. The project is receiving funding from the German Federal Environmental Foundation (DBU).

## **Title**

“Comparative assessment of innovative inspection procedures and equipment for site drainage systems and recommendations for action for preparation of the inspection (Phase I: Actual-condition survey, test programme and recommendations for action)”

## **Project management**

IKT - Institute for Underground Infrastructure gmbH

## **Project participants**

- August Meyer Entsorgung – Technische Dienstleistungen

GmbH & Co. KG (disposal organisation)

- City of Osnabrück

## **Client**

German Federal Environmental Foundation (DBU)

## **Contact**

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# **Project F238: Infiltration tightness at materials changeover and transition points**



Is it possible to repair damage like this infiltration-proof?

Comparative investigations performed at material changeover points are to be used to draft independent and impartial information on the infiltration tightness, installation and operational quality of repair procedures for sewer laterals.

The refurbishing of such laterals is, in practice, frequently performed in conjunction with the refurbishing of main sewers, by means, for example, of CIPP liners, and this application is therefore of particular interest for comparative tests and analyses. Large-scale tests on a 1:1 scale are planned.

Essential acceptance criteria for “infiltration tightness” have already been evolved, and an informationally useful and practically orientated test programme for comparative tests at material changeover and transition points drafted, during an initial phase of this research project.

## **Project title**

“Analyses of infiltration tightness at material changeover/transition points for support of development work;

Phase II: Comparative analyses at material changeover

and transition points”

## **Project management**

IKT - Institute for Underground Infrastructure

## **Project participants**

Institute of Hydrosociences, Water Resources Management and Resources Engineering, University of the German Federal Armed Forces, Munich

## **Client**

Ministry for Climate Protection, Environment, Agriculture, Nature Conservation and Consumer Protection of the German State of North Rhine-Westphalia (MKULNV)

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## **Project F237:**

# Optimising sewer cleaning



The target: Flushing only when it's necessary!

The first phase of this project has examined the extent to which cleaning intervals can be extended, efficiency improved and savings generated, using synergies between the organisation of cleaning activities and modern technology. Field tests were undertaken at a Ruhr University Bochum sewer site and expert workshops and discussions with operators were organised at IKT.

The influence of gradient, fluctuation in run-off, time of year, time of day and ingress of mineral burdens, are now to be studied in a second phase, to determine further potential savings.

Selected sewer network operators are to be provided with support to implement the findings in order to optimise the benefits of this research.

The key output from the project will be a recommendation for action which will assist and support sewer network operators in the implementation of optimising sewer cleaning strategies, exploiting synergies and realising potential savings.



# Project title

“Investigations into optimising sewer cleaning – Phase II”

# Project management

University of Bochum, Chair of Urban Water Management and Environmental Engineering

# Project participants

IKT - Institute for Underground Infrastructure

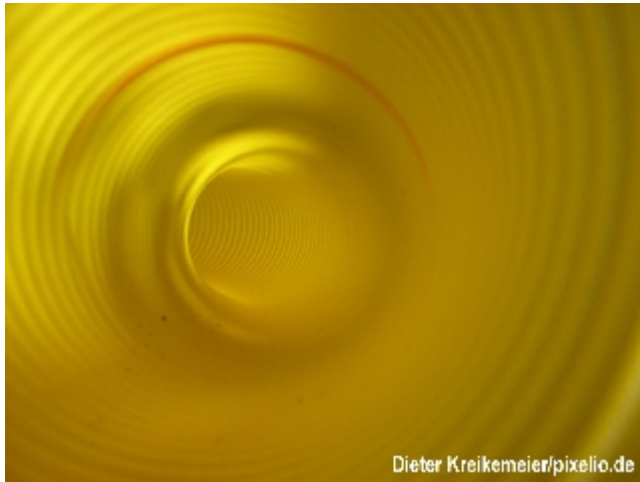
# Client

Ministry for Climate Protection, Environment, Agriculture, Nature Conservation and Consumer Protection of the German State of North Rhine-Westphalia (MKULNV)

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# Project F234: Installation, operation and maintenance of central water-drainage systems



Groundwater management in the Emscher region has increasingly gained in importance in recent years in view, in particular, of rises in the groundwater table caused by drain/sewer refurbishing projects and the influence of mining activities. Such rises in the groundwater table can result in widespread effects on structures and sites in the affected region, and thus harbour significant potentials for conflicts. It may therefore be necessary, depending on the local (and, in particular, on the local hydrogeological) situation to limit the upward movement of the groundwater table.

So-called “central drainage systems” are one solution option which is in use for groundwater management in the Emscher region. These are installed at a corresponding depth in the soil and assure maintenance of a “zero-conflict” groundwater table across a large area, after refurbishing of the public drain/sewer system.

There is, at present, a need for determination of the extent to which certain factors (such as clogging, depositions and root infiltration, for example) critically influence service-lives and maintenance requirements, and the engineering and operational provisions necessary to assure the long-term functioning of such systems. The aim of this study is that of providing a well-founded overview of practical experience in this field, defining the current state-of-the-art, and publicising the latest scientific discoveries. Analogous experience from construction and operation, and also from the regeneration and refurbishing of wells, and of horizontal wells, in particular, are also to be analysed and evaluated in the context of this study.

## **Project title**

“The installation, operation and maintenance of central water-drainage systems – Practical experience, state-of-the-art, and scientific findings (study)”

## **Project management**

IKT - Institute for Underground Infrastructure

## **Project participants**

Bieske und Partner Beratende Ingenieure GmbH (Prof. Dr. habil. Christoph Treskatis) engineering consultancy

## **Client**

Emschergenossenschaft/Lippeverband water authorities

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