

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

Ministerium für Klimaschutz, Umwelt,
Landwirtschaft, Natur- und Verbraucherschutz
des Landes Nordrhein-Westfalen



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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**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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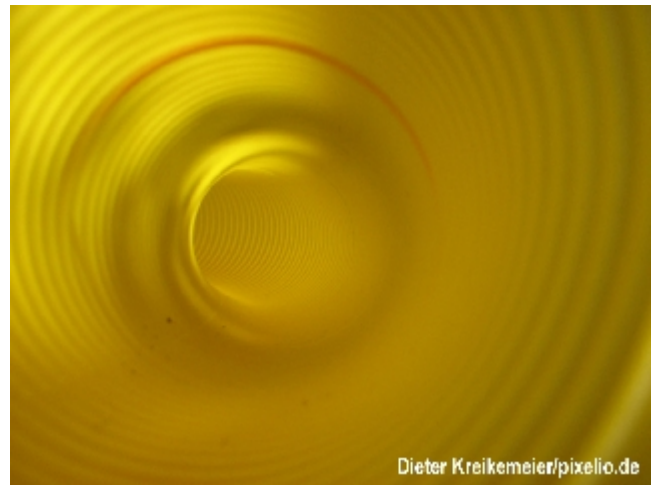
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Project F234: Installation, operation and

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 ochering, 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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Project C347: Root intrusion into waste- water sewers – passive preventative measures



Pipe joint exhibiting severe
root intrusion

Measures to prevent root intrusion into waste-water conduits, drains/sewers and manholes are to be assessed and recommendations for action derived to assist engineering consultancies involved in the planning of networks.

The IKT has researched the fundamental relationships between root growth and underground infrastructure in a number of research projects, and has been involved in the drafting of the (German-language) standard, "Trees, underground conduits and drains/sewers" (published in German as DWA M 162, DVGW GW 125 and FGSV No. 939).

The project is being managed and coordinated by the Water Research Centre (WRc), of the United Kingdom, with support from IKT - Institute for Underground Infrastructure.

Project title

“Root intrusion into waste-water conduits – passive preventative measures (Tree Root Barriers to Protect Sewer Systems, CP523)”

Project management

WRc plc – Water Research Centre, Swindon (UK)

Project participants

IKT - Institute for Underground Infrastructure

Client

Four British sewer-system operators

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**Project F219:
Effects of sewer sealing on
treatment plants and water**

balance

The effects of high extraneous-water influxes on the following are to be investigated:



- waste-water treatment performance
- treatment-plant energy balance
- the burden on the water environment caused by combined sewer overflow systems

The costs caused by extraneous water are to be compared against the costs for refurbishing of sewers and site-drainage pipes. The sustainability of the refurbishing materials and methods used are also to be examined.

Possible problems for buildings and vegetation caused by rises in the water table as a result of sewer sealing projects are also to be recorded. The data and information determined will be verified in practice in a specific municipality.

The aim of this research project is to draft proposals for refurbishing requirements, which can then be used by the decision-making bodies as a basis for the redrafting of the Waste Water Ordinance.

Project title

“Sewer sealing: Effects on treatment-plant cleaning performance and on the local water balance”

Project management

IKT - Institute for Underground Infrastructure

Project participants

- Pirker + Pfeiffer Ingenieure GmbH & Co. KG, Münsingen consultant engineers
- University of Bochum, Institute of Environmental Engineering and Building Ecology
- University of the German Federal Armed Forces, Munich, Institute of Hydrosciences, Sanitary Engineering and Waste Management
- University of the German Federal Armed Forces, Munich, Institute of Hydrosciences, Water Resources Management and Resources Engineering

Client

Federal German Environmental Agency (UBA)

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