

# DAHLEM

## COMPANY MAGAZINE



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Map Data from the Spatial Information and Planning System (SIPS),  
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## IN CONVERSATION

# Creating something new!

Dear readers,

In 2012, the year we celebrated the 75th anniversary of our company, my father handed over the management of the company to me. After 34 years as the sole managing partner of DAHLEM Consulting Engineers, he gradually withdrew from the day-to-day business and supports me now as an advisor. My father shaped the company and set the course for success and as such, an era ended when he passed it on to me. Since January 1st, 2016, I have been the sole shareholder, however the company remains what it always was and what it stands for – a family business.

In 1978, my father took over the engineering office from his father. Under his leadership, the company continued to expand. Following his motto „We are where our projects are“, he established further branches with a continuously growing number of employees and business areas. He expanded the international activities and branch offices and his own extensive international experience laid the foundation of today's work. In addition to his professional activities, he has been involved in teaching, research and numerous associations.

My father has been the driving force for more than forty years to make the company into what it is today – a respected and successful company. This life work he has now entrusted me. I am obliged to him for his trust. Today, we are facing completely different tasks which also require the greatest commitment and which are pursued for the good of company.

Yours Jan-Gregor Dahlem

*Gregor Dahlem*



# DAHLEM IN FACTS

## Locations

- » DAHLEM **Essen**
- » DAHLEM **Darmstadt**
- » DAHLEM **Berlin**
- » DAHLEM **Stuttgart**
- » DAHLEM **Kotor** (Montenegro)
- » DAHLEM **Tirana** (Albania)

Total number of projects and breakdown by country

**From 1937 until today approximately 3,000 projects**

- » Germany 65 %
- » European Union 15 %
- » Other European countries 15 %
- » Remaining countries 5 %

## Public clients (75 % share worldwide)

- » Associations
- » Municipalities
- » Cities
- » KFW
- » Ministries
- » EU
- » EIB
- » World Bank
- » GIZ

## CLIENTS

## Industrial clients (25 % share worldwide)

- » Food industry
- » Pharmaceutical and chemical companies
- » Coal mining
- » Coking plants
- » Oil industry
- » Confectionery industry
- » Paint factories
- » Breweries
- » Real estate companies
- » Housing companies

- » Civil Engineers
- » Environmental Engineers
- » Trainees
- » Freelancers
- » Electrical Engineers
- » Technicians / Draftsmen
- » Mechanical Engineers
- » Architects / Landscape Architects

# INTERACTION OF ALL SPECIALIST DISCIPLINES

Wastewater Treatment Plants  
Sewerage System  
Flood Protection  
Development  
Water Supply  
Stormwater Treatment  
Pumping Stations  
Sludge Treatment  
Pipeline Construction  
Waste  
Energy Concepts

Studies/Reports  
Requirements  
Planning  
Planning  
General Planning  
Construction  
Management  
Project Management  
Operational Support

Structural Engineering  
Project Planning  
Electrical Engineering  
Process Technology  
Mechanical Engineering  
Structural Design



80

// I STILL  
LIKE TO DROP BY  
THE OFFICE  
FROM TIME TO TIME //

# A LIFE'S WORK

## Dr.-Ing. Hans-W. Dahlem celebrated his 80<sup>th</sup> birthday

Construction Assessor Dr.-Ing. Hans-W. Dahlem celebrated his 80th birthday in March 2019. A long and fulfilled life with his family was not his only achievement and he can look back with special pride on his life's work, the engineering company DAHLEM. „It seems to me like yesterday that I followed in the footsteps of my father and took over the company in 1978“, he says.

Dr. Hans-W. Dahlem studied Civil Engineering at the Technical University of Karlsruhe and followed up with a residency as a construction assessor in the water management department of the state of North Rhine-Westphalia. Subsequently, he obtained his doctorate and was a lecturer at the Technical University Darmstadt. He was awarded the Karl Imhoff Prize for this work.

In 1978, Dr. Hans-W. Dahlem began to work in the engineering company of his father, Hans Dahlem, the company founder. Under Dr. Hans-W. Dahlem's leadership, the company expanded, opening further offices – even abroad. The number of employees was growing and they added new areas of activity. Early on, his father had already made his first contacts abroad which Hans-W. Dahlem continued to develop. He has extensive international experience, especially in Eastern Europe, the Middle East, Africa and Asia. In 2000, Federal President Rau inaugurated the wastewater treatment plant Al-Bireh, designed and its construction supervised by DAHLEM –the first modern biological wastewater treatment plant in Palestine.

### “The company is in the best of hands.”

„Of course, it was not easy for me to hand over responsibility for the company that I have been bearing for so long“, admits Dr. Hans-W. Dahlem. “But I also know that with my son it is in the best of hands. Following my gradual withdrawal since 2012, he has taken over more and more areas and has, in recent years, proven himself in the practice of corporate management“. For example, he is glad that his son is intensively pursuing the topic of progressive digital innovations.

### Mutual respect and recognition

How much respect the company has gained under the leadership of Dr. Hans-W. Dahlem is particularly evident in the high number of years many employees have been working for the company. After all, he guided them through DAHLEM's developments for almost four decades and, with a great deal of dedication, overcame together with them all crises. Every year he proves again and again just how much he values all of his employees, inviting them and their families to the large, traditional summer party in Essen. He also makes a point of joining his workforce to celebrate the annual Christmas holidays – including those from abroad.

### From a regional engineering office to an international company

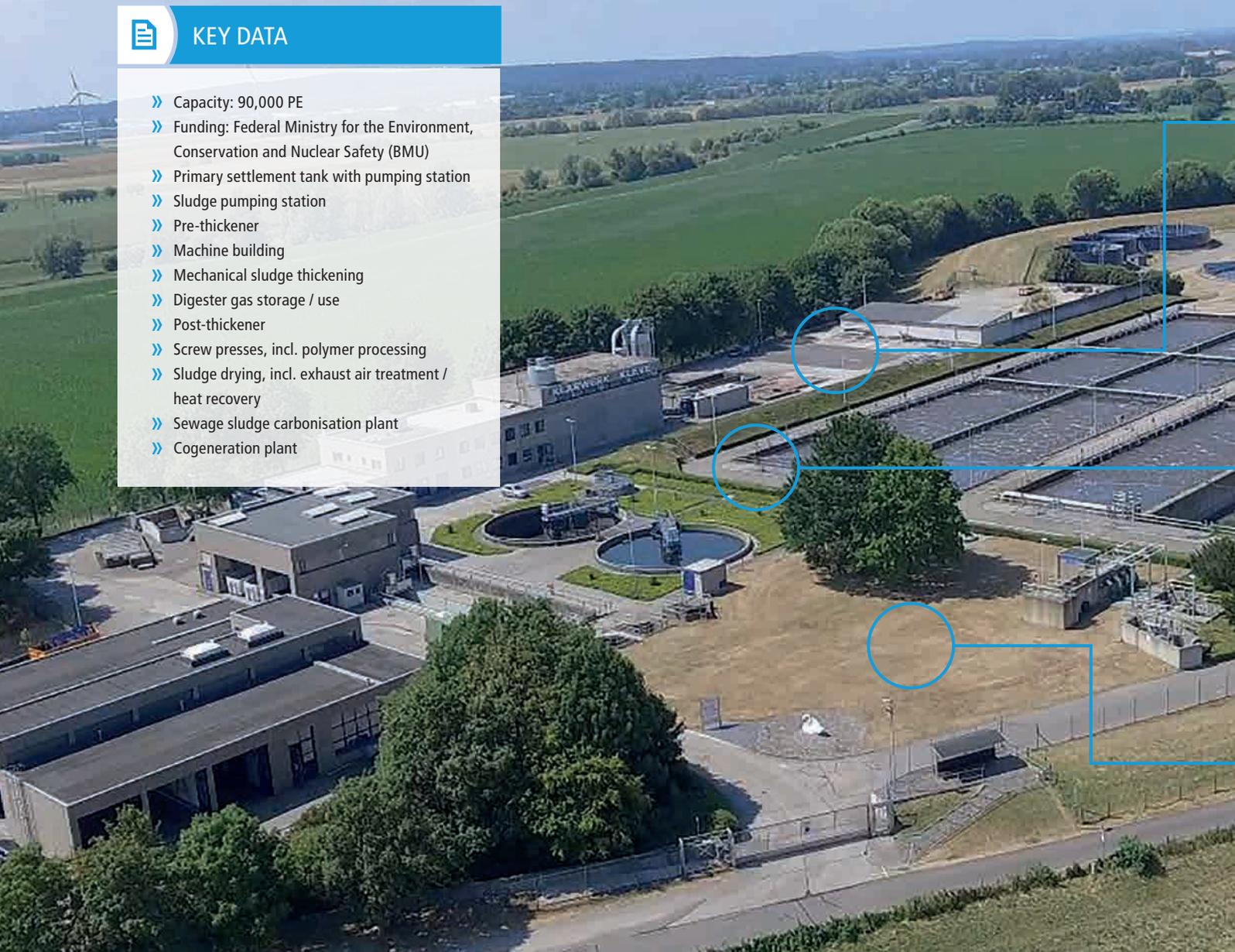
Dr. Hans-W. Dahlem's lifework can also be expressed in numbers: under his management the company grew from a regional engineering office for urban water management with 40 employees to an international engineering company. Today, more than 125 people work for DAHLEM worldwide, about 80 of them in the headquarters in Essen. During his long time as a managing partner, Dr. Hans-W. Dahlem was also an advocate for the role and recognition of engineers in society. He actively helped shape developments on numerous panels and committees, in all specialised and umbrella organisations like the DIN, the DWA, the BWK, various engineering chambers and the AHO to achieve this goal.

As a founding and board member of INGEWA, the engineering association for water and waste, he set the course for the merger of the engineering associations VUBI and VUBIC as the VBI.



## KEY DATA

- » Capacity: 90,000 PE
- » Funding: Federal Ministry for the Environment, Conservation and Nuclear Safety (BMU)
- » Primary settlement tank with pumping station
- » Sludge pumping station
- » Pre-thickener
- » Machine building
- » Mechanical sludge thickening
- » Digester gas storage / use
- » Post-thickener
- » Screw presses, incl. polymer processing
- » Sludge drying, incl. exhaust air treatment / heat recovery
- » Sewage sludge carbonisation plant
- » Cogeneration plant



## Extension of WWTP Kleve-Salmorth

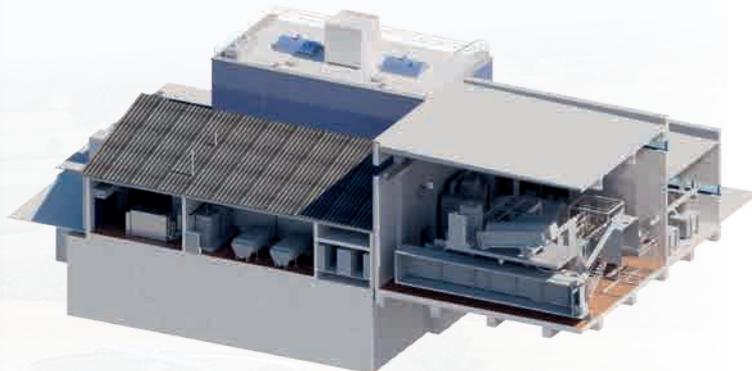
Environmental Enterprise of the City of Kleve (AöR)

The new Sewage Sludge Ordinance calls for a re-evaluation of residential water management. In response to the amended legal regulations in the field of waste disposal and the use of fertilisers, the traditional methods for sewage sludge treatment and disposal are going to change in the future.

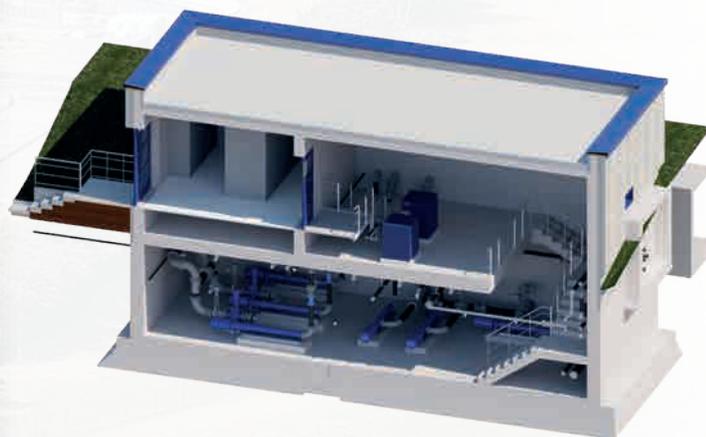
The Kleve-Salmorth wastewater treatment plant is considered to be a flagship project in terms of sewage sludge treatment innovation. The conversion of the plant sets a standard in resource protection at the municipal level. The future two-stage compact digestion process will generate renewable heat and energy from biogas and the subsequent sewage sludge carbonisati-

on refines biomass and eliminates disposal bottlenecks. Upcycling converts the waste "sewage sludge" into a valuable product. The advanced sewage sludge treatment produces bio-available phosphorus to be used as fertiliser alongside binding CO<sub>2</sub> permanently in the soil (CCS = Carbon Capture and Storage).

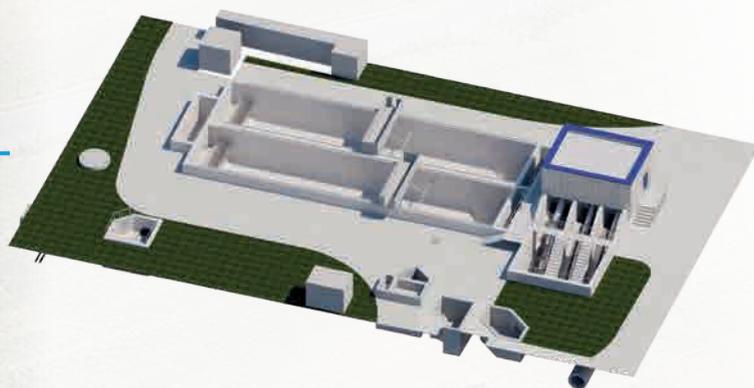
DAHLEM is responsible for the civil, architectural and structural design, as well as for the technical equipment and the construction supervision.



Digester,  
Sludge Treatment,  
Technical Building,  
Biofilter



Sludge Pumping Station



Screw Pumps with  
Primary Settlement Tank



A planning meeting with a virtual tour of the new plant components allows all parties involved, even before the start of construction, to detect and correct potential collisions of the various trades at an early stage. Furthermore, it presents the operational staff with the opportunity to assess working conditions and become familiar with their new workplace.



Sewage lifters  
DN 1400 and DN 1600,  
Total flow rate up to

**4 m<sup>3</sup>/s**

Instruction on the  
lifting system





Assembly of the lifters on site



## Provisional Sewage Transfer Pipelines at WWTP Düsseldorf-Süd

Municipal Sewage Works of the City of Düsseldorf

In 2018, in the course of reconstruction works at WWTP Düsseldorf-Süd, a provisional diversion of the wastewater was implemented under the supervision of DAHLEM.

Over a period of 4 months, two sewage lifters transported quantities of up to 4 m<sup>3</sup>/s (a volume of wastewater equivalent to 27 bathtubs every second) from the round sand trap into the primary settlement tank. The local conditions proved to be extremely favourable for the construction of the lifting system. As it transpired, in addition to significantly improved operational safety, the amount of energy required to run the temporary solution was 50 times less than one with conventional pumping via centrifugal pumps.



7.5 km Watercourse modification



Passages with slope stabilisation

## Boye – Ecological Improvement

Emscher Genossenschaft (Emscher River Management Association)

The river Boye receives a new 900 m space next to the old river bed in the northern segment of the "Pelkumer Feld". The redesign of the Boye is part of the century project for ecological improvement of the Emscher system between Dortmund and Dinslaken which began in the 1990s.

The ecological improvement of the Boye takes place over a distance of approximately 7.5 kilometres. Rock ramps establish an ecological continuity and replace existing drop level structures. In addition, the integration of deadwood has the aim to help to promote habitat and structural development. The Institute of Hydraulic Engineering and Water Management of the University of Duisburg-Essen provides operational experience and carries out stability studies.

DAHLEM was commissioned with the phases from project planning for the watercourse modification up to the assistance with contract award.



Initial water production



Floodplain development



Habitat and structure development through the introduction of deadwood



### KEY DATA

- » Watercourse modification approx. 7.5 km
- » 10 natural stone rock ramps
- » Widening of the floodplains by means of approx. 900 m steep walls (incl. static calculations)
- » Measuring distance to discharge measurement
- » Conversion of the existing waterway to the stormwater tank



## Stormwater Retention at MARK 51°7

Bochum Perspektive 2022 GmbH

At MARK 51°7, the site of the former Opel factory in Bochum, an industrial, technological and knowledge campus is currently being built that will fulfil the requirements of future work environments, supporting a work/life blend. An advanced construction stage and the infrastructure almost entirely complete, the ambitious plan for the location is increasingly becoming a reality.

For the development of the sewer and road construction, DAHLEM, as part of a joint venture, supervised the implementation of the gigantic and complex construction site.

The design and construction supervision for the stormwater retention basin with a volume of 6,500 m<sup>3</sup> for protection in cases of heavy rain has already been completed.

The site was awarded the polis Award 2019 in its category as "Best urban surface recycling, MARK 51°7 – successful reactivation in eastern Bochum".

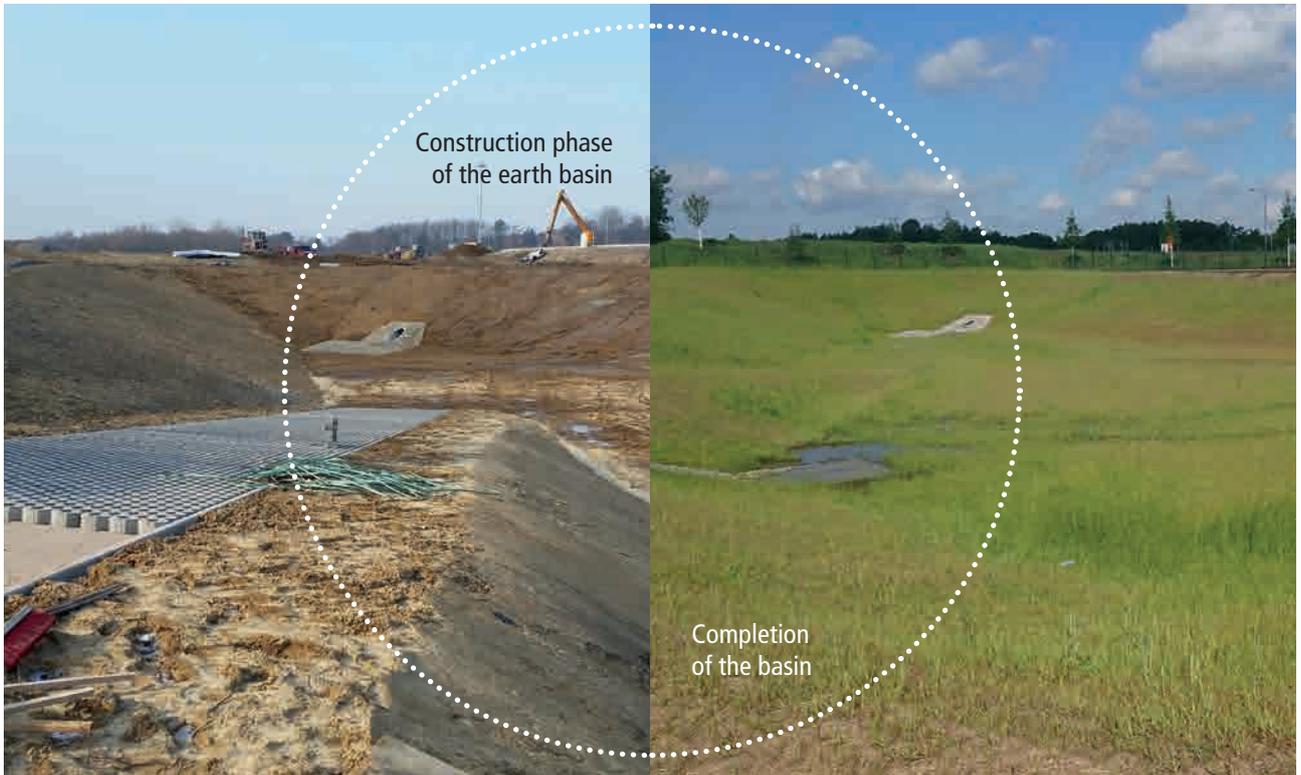


### KEY DATA

- » Development area 68 ha
- » Sewer length approx. 7 km, modified mixing system (DN 300 to DN 1200)
- » Development in several construction stages (Planning of provisional arrangements in the transitional period)
- » RRB as an open earth basin (V = 6,500 m<sup>3</sup>)
- » Retention area with flat stowage up to 40 cm (V = 1,500 m<sup>3</sup>)



Western development of the location with access roads and stormwater retention basins



Construction phase of the earth basin

Completion of the basin



Foundation engineering with pipe jacking using a bored pile wall excavation method

Culvert  
DN 800

## Interceptor Sewer Zuffenhausen, Stuttgart

Stuttgart Wastewater Utility (SES)

The impact of the torrential rain experienced in the Stuttgart area over the past few years needs to be tackled with an effective flood protection system. In particular, the sewers in some areas require optimisation to be able to accommodate the anticipated water volumes. The Zuffenhausen district is especially affected. Its sewer system has, therefore, been supplemented with a larger DN 1600 sewerage interceptor. This new sewer was constructed using a tunnel boring machine, is approximately 340 m long, up to 13 m deep and has a 200 m long curved section with a radius of upwards of 320 m. The shaft structures, each weighing up to 50 tonnes,



Pre-flood protection:  
suspended pipeline



Sewer construction in residential area



## KEY DATA

- » 340 m MW sewer DN 1600, closed construction (Roadheader), of which 200 m is a curve with  $R = 320\text{ m} - 400\text{ m}$
- » 80 m MW sewer DN 1600, open construction
- » 15 m stormwater sewer RE 3150/4350
- » 1 in-situ concrete structure, 5 precast structures
- » Excavation pit depth collector 6 – 11 m

### Pit lining

- » 2,330 m bored pile wall, single, tangent and overlapped  $\varnothing 88\text{ cm}$

### Discharge system protection

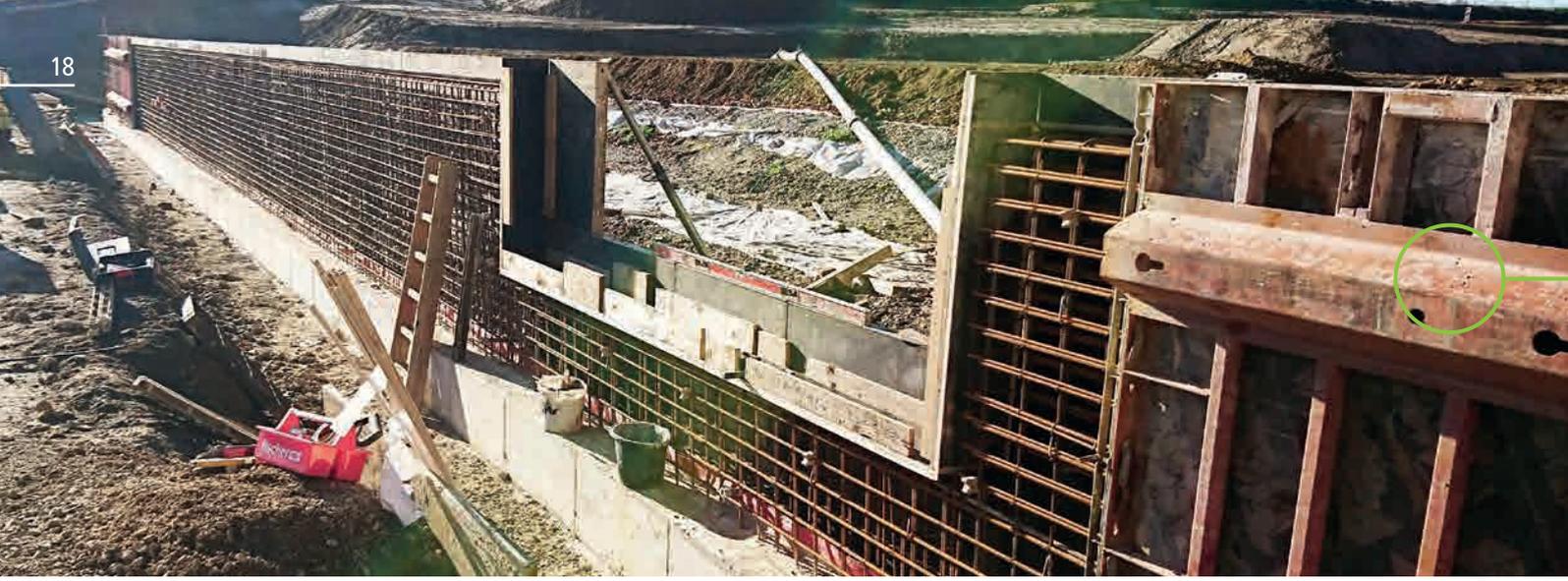
- » Suspended piping DN 1200 GFK for  $Q = 6,700\text{ l/s}$  and DN 800 as culvert
- » Road renewal
- » 1,500 m<sup>2</sup> asphalt surface

were built with prefabricated modules to maximise efficiency. This was a particularly complicated construction task to complete given the limited space available in this densely developed residential area.

DAHLEM was responsible for the phases from project planning for the completion of the sewer network, up to the construction site management, including on-site construction supervision.

Bored pile wall as a pit lining for a dual-objective pit and an L-shaped shaft structure





## Gerther Mühlenbach – Ecological Transformation

City of Bochum

For a year and a half now, Gerther Mühlenbach has been ecologically rebuilt to separate the creek from the groundwater. The partially subterranean creek in the north of Bochum has in the past suffered from contamination, principally from historic mining activity.

Today, the industrially polluted ground water accumulates in a basin in front of a new sealing wall where it regenerates before flowing “clean” into the creek. A 555 m long sewer was built at the same time the ground water treatment plan was constructed.

These two measures made the transformation of the Gerther Mühlenbach possible. The valley area in front of the sealing wall was filled to a depth of over a metre and a new water bed developed in it. The terrain slope at the rehabilitation building bridges a new 40 m long rock ramp. The coordination of all measures carried out at the same time was a special challenge of the project.

DAHLEM was responsible for project planning for the watercourse modification, including the construction supervision.



Sealing wall for groundwasswater accumulation with opening for the course of the stream



Rock ramp immediately after completion

The newly designed stream below the rock ramp before commissioning

Groundwater decontamination system with the new stream (right)



#### KEY DATA

- » AE = 1.93 km<sup>2</sup>
- » Total water body length: 1.7 km
- » Water length conversion: 0.65 km
- » Rock ramp: armourstone construction, L = 40 m



Pre-construction Underwater connection to the Altrhein



## Dyke Rehabilitation Xanten-Kleve and its Aquatic Continuity

Dyke Association Xanten-Kleve

High flood protection requirements made rehabilitation measures on the dyke section between the road B220 and Griethausen necessary. Here, the existing dyke is relocated over large sections in order to provide the Rhine with an increased flow cross-section. As a result, both the road L8 running along the top of the dyke and the cycle path will also be dismantled and rebuilt. In the future, the present U-shaped course of the dyke between the Kellener Altrhein and Altrhein Schöpfwerk will be eliminated. The dyke is straightened and connected to the already renovated dyke in front of Griethausen.

In addition, a new pumping station with fish ascent and descent will be built at the new Altrhein/Deichlinie crossing. This high-water pumping station will be equipped with fish screens, up- and downstream migration facilities (fish ladders) and a double flood protection arrangement for each culvert.

With the help of a fish catching device, as a double trap for up- and downstream migration, a success monitoring programme will be conducted. It will be investigated whether significant improvements can be demonstrated under moderate water management boundary conditions, such as low runoff or temporary flood closures. An open stretch of water about 400 metres long is planned between the existing and relocated dykes and a new tilting weir will regulate the water level in the Kellener Altrhein.

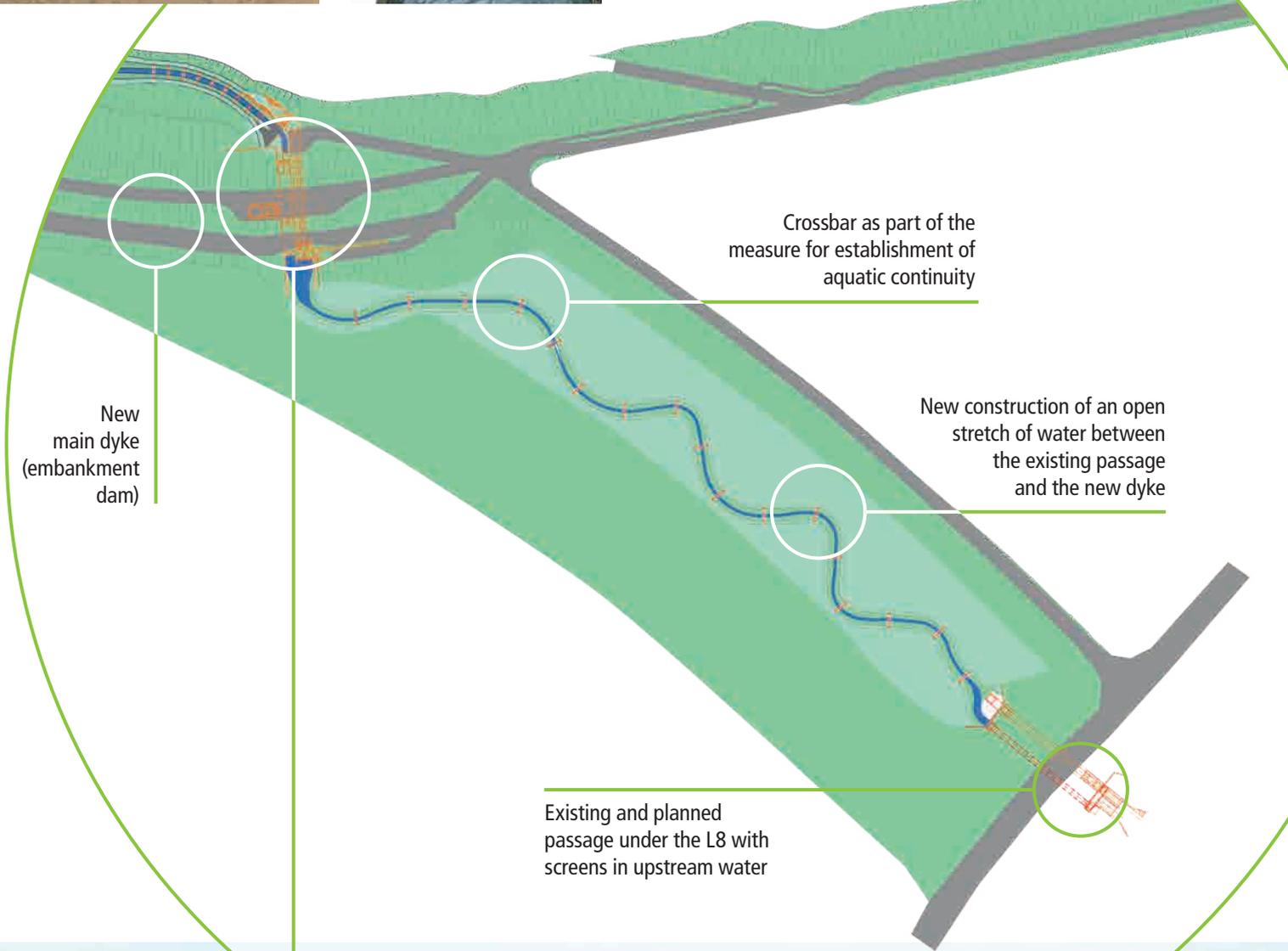
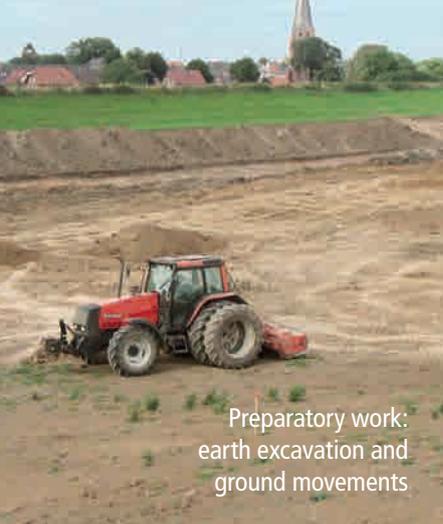
DAHLEM is part of a joint venture and has been awarded the implementation planning and technical equipment for the new pumping station as well as the modification of the old pumping station.



### KEY DATA

- » Rehabilitation of a total of 4 km of the main dyke
- » 2,150 m strengthening of the existing dyke
- » 1,450 m new dyke construction with relocation of the dyke line up to 200 m
- » 280 m new dyke construction
- » Partial demolition of the former Altrhein pumping station
- » Construction of a fish passage for the Kellener Old Rhine between L8 and the line of the new embankment dam





## Sewage and Stormwater Pumping Station Hamm Brüggenkampstraße Lippeverband

In order to separate and floodproof the waters of Herringer Bach and Hoppeibach, a new combined stormwater and sewage pumping station was built along with a sewer overflow, stormwater tank and the associated incoming sewers.

These measures became necessary because since 2016 the Lippeverband is no longer permitted to discharge wastewater into the Herringer Bach or the Hoppeibach. In addition, ground subsidence had disrupted the flow direction of the streams so only pumping stations are able to transport the water to the Lippe.

The new, modern pumping station replaces two existing mixed water pumping stations and dewaterers

parts of Hamm Wiescherhöfen district situated in the polder. A 300 m long, trenchless-built DN1600 overflow brings the wastewater to the pumping station. From there the sewage component is pumped into the existing dry weather channel of the Herringer stream and the stormwater directly into the Herringer stream. When the overflow is completely full, the water discharges via a buffer basin into a former pond area which has been converted into a stormwater tank. Stormwater-pumps in the pumping station drain the stormwater tank into the Herringer stream.

DAHLEM was responsible for all phases of project and structural planning as well as the technical equipment, including construction supervision.



Operational building, pumping station and stormwater inlet

Overflow with outlet structure (SKU)



Stormwater tank

Buffer tank



Construction of combined sewage and stormwater pumping station



Stormwater pump room



## KEY DATA

- » Sewage pumping station, dry installed pumps  
 $Q_p = 2 \times 30 \text{ l/s}$
- » Stormwater pumping station, dry installed pumps,  
 base-load pumps:  $Q_p = 2 \times 25 \text{ l/s}$ ,  
 flood pumps  $Q_p = 2 \times 150 \text{ l/s}$
- » Operational building as superstructure
- » Crane conveyors in the ground floor and basement
- » Bored pile wall excavation,  $D = 16\text{m}$
- » Connected load pumping station 100 kW
- » Upstream stormwater tank as  
 Pump template  $V = \text{approx. } 5,000 \text{ m}^3$



1 year after commissioning





A stream with many facets:  
from natural to urban



## Immission Analysis of the Schwarzbach and its Tributaries

Main-Taunus Wastewater Association

The Schwarzbach stream arises from the Hohe Taunus and flows into the river Main at Okriftel. Along its course of around 32 kilometres, it receives various sizes of wastewater discharges - also from the tributaries.

Every such discharge takes an ecological toll. The effects on the waterbodies as habitats can now be demonstrated by the immission assessment carried out by DAHLEM in accordance with the „Hessian Guidelines“. The results of this simulation calculation make clear there is a need for action. Therefore, the next step will be to develop a concept for measures to improve water quality together with the Main-Taunus Wastewater Association and the responsible authorities. Possible measures to be evaluated, further elaborate and prioritised include:

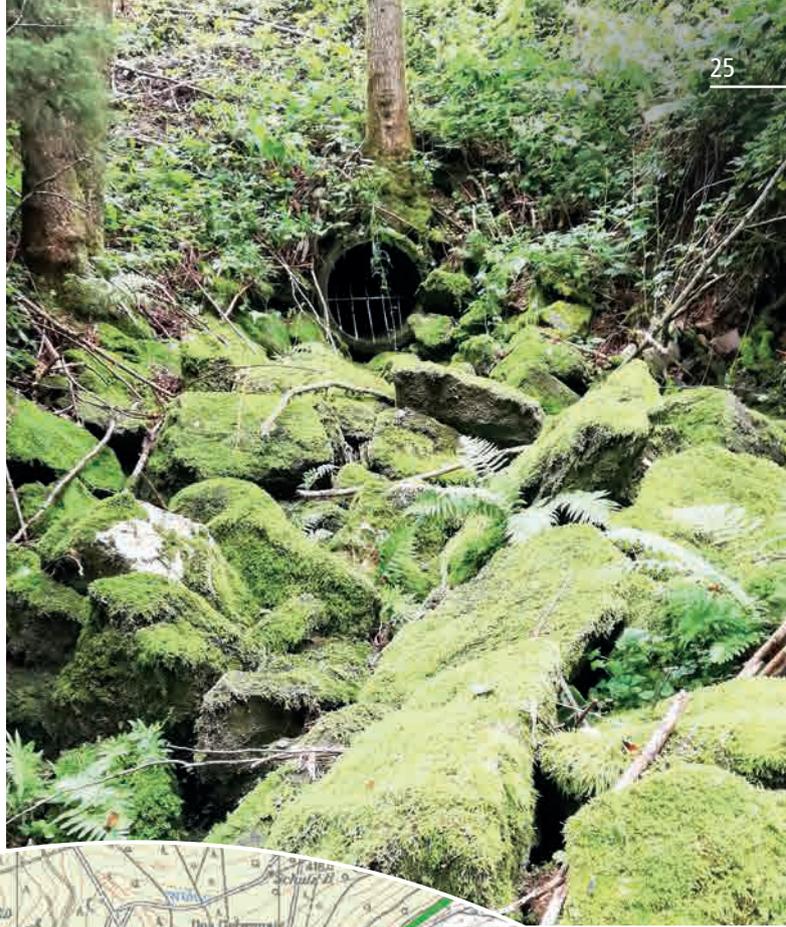
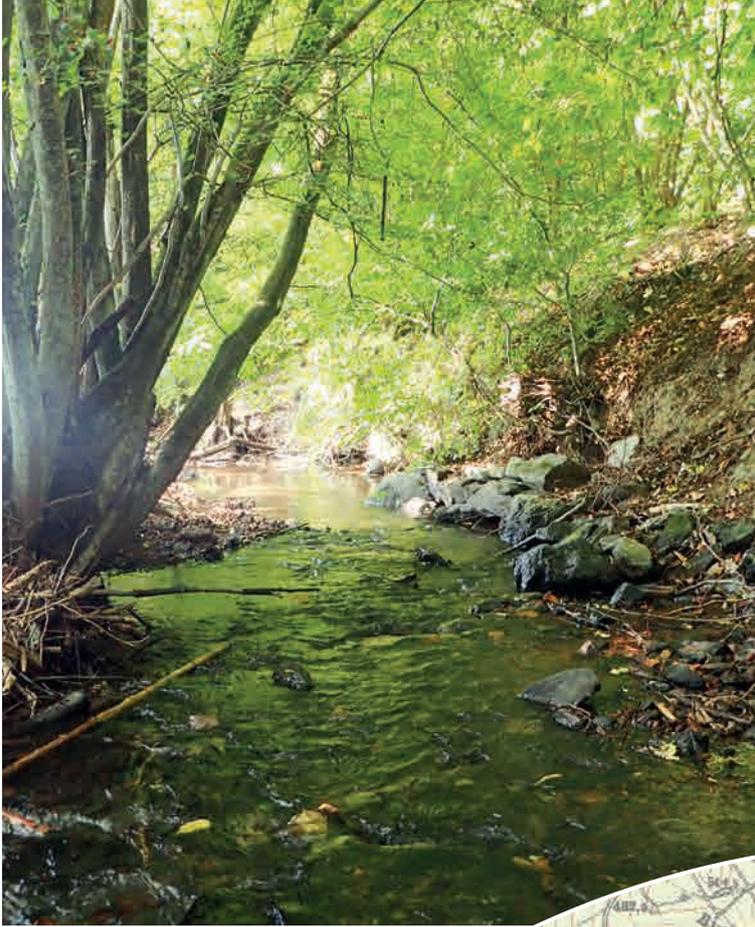
- retention before initiation;
- additional treatment measures; and
- the ecological improvement of the waterbody.

DAHLEM was awarded the preparation and implementation of the immission assessment, including the preparation of concept measures.

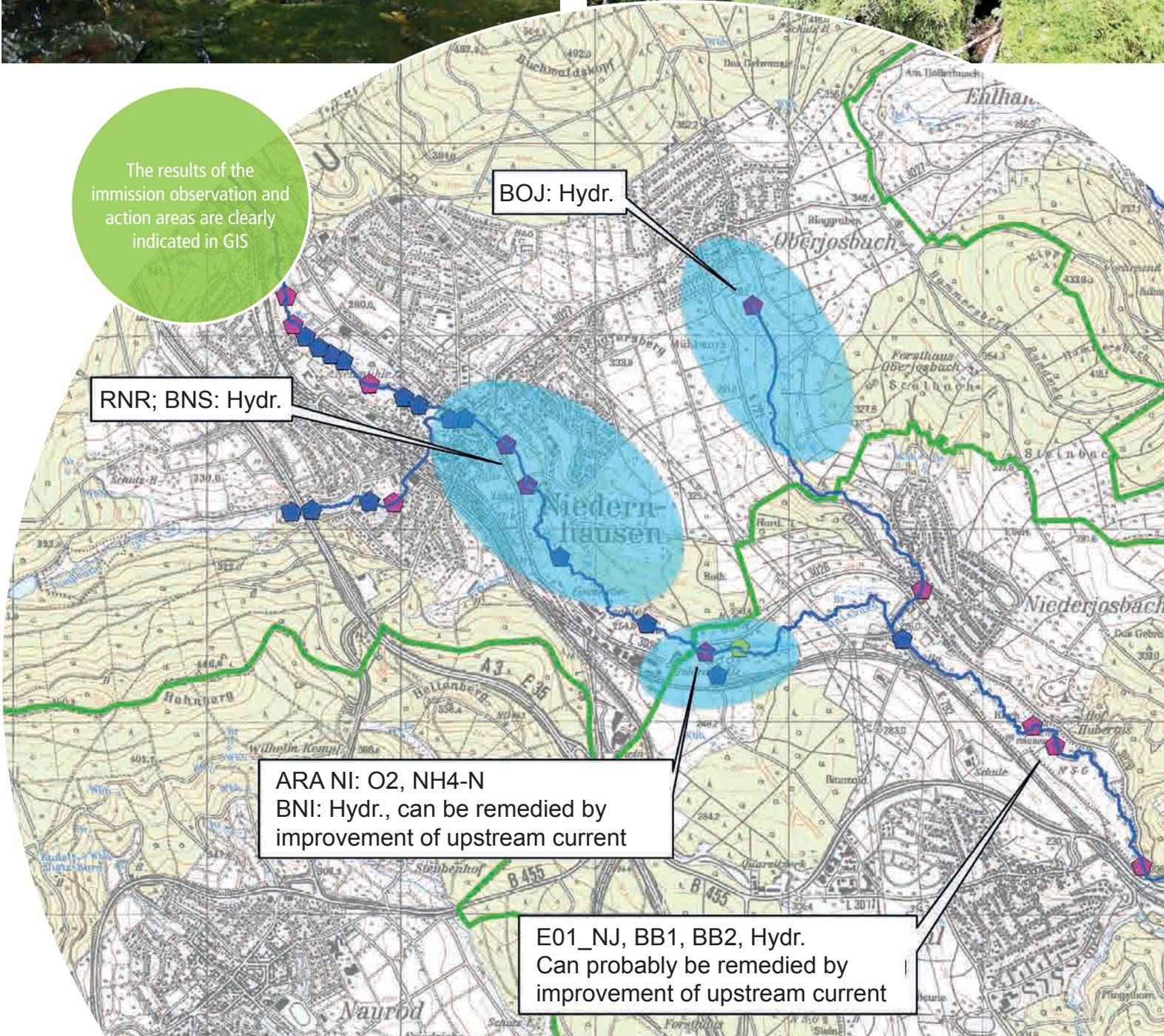


### KEY DATA

- » Catchment area: approx. 135 km<sup>2</sup>
- » 13 tributary waters
- » 6 introductions from KLA
- » 68 discharges from stormwater tanks
- » 61 discharges from isolated areas
- » 1 small wastewater treatment plant
- » Demarcation of 7 closed settlement areas
- » Integration of 7 pollution load calculations
- » Evaluation of operating data from the wastewater treatment plant
- » Adaptation SMUSI after evaluation of pollution concentrations in the inlet KLA
- » Application of the „Immission Observation“ guidelines (Hesse, 2012)
- » Model construction and verification management in the Hessen tool package



The results of the immission observation and action areas are clearly indicated in GIS



BOJ: Hydr.

RNR; BNS: Hydr.

ARA NI: O2, NH4-N  
BNI: Hydr., can be remedied by improvement of upstream current

E01\_NJ, BB1, BB2, Hydr.  
Can probably be remedied by improvement of upstream current

## Connection of the Raw Material Recovery Centre (RZR) Herten to the Ruhr-East District Heating Grid

STEAG Fernwärme GmbH

The transfer point of the district heating transport pipeline of the RZR Herten might look like a work of art but its unusual shape results entirely from the functional requirements. Cross-over lines with valves which make the transfer point appear like an abstract sculpture connect the flow and return line to be able to change the flow direction.

A 900 m long pipeline connects the RZR with the Ruhr-East district heating grid. Designed as a double-walled two-pipe system (DN 500), proportionally above and below ground, it transports the hot water in the flow pipe at an operating temperature of 180° C.





## KEY DATA

- » Routing
- » Pipeline trenches
- » Pipeline foundations partly parallel to the road, support distance 12 m
- » Concrete foundations partly with anchoring from concrete bored piles
- » Transitional structure for the change of overhead lines on underground pipelines



# Heavy Rainfall Risk Management Stuttgart

Urban Drainage Department of Stuttgart (SES)

In recent years, heavy rainfall events caused major floods in the city of Stuttgart and the surrounding area. Limiting the extent of resulting damage has, therefore, become a major challenge for the city.

Where are floods to be expected during torrential rain? Where can severe damage occur? What action can be taken? These questions are answered by a qualified hazard and risk assessment.

DAHLEM was engaged to undertake the preparation of heavy rain hazard maps, a risk analysis, profiles with the essential simulation results and a municipal action plan.

The action plan contains, among other things, measures for:

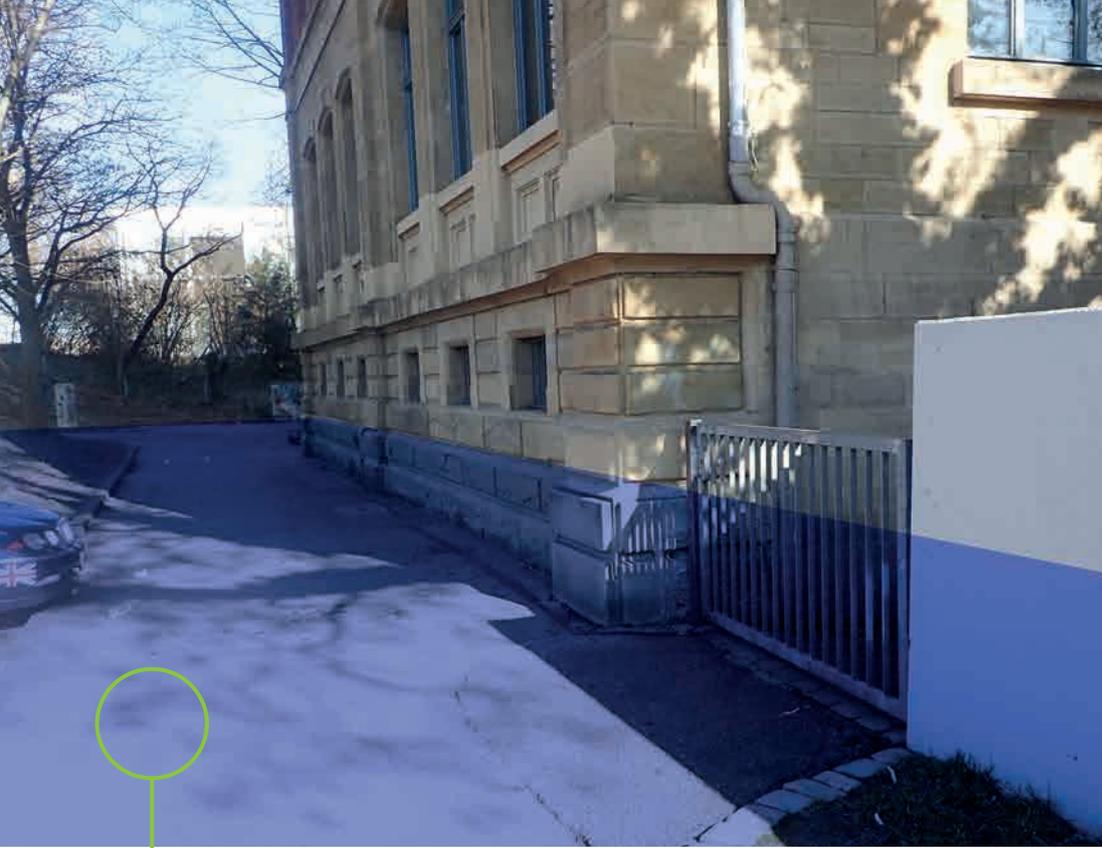
- information provision;
- the consideration of heavy rainfall hazards in urban land use planning;
- the retention of outflows from external areas; and
- the multifunctional use of green spaces.

The results will enable the city on the basis of the qualified calculation criteria to carry the topic of “urban flash floods” forward as an interdisciplinary communal task.



## KEY DATA

- » according to LUBW guidelines
- » 2D surface modelling
- » 90 km<sup>2</sup>
- » Heavy rain hazard maps
- » Risk analysis
- » Municipal action concept



Hydrodynamic simulations as support tool:  
 Calculated maximum water levels at buildings provide  
 information on the extent of the flood hazard



Action concepts: e.g.  
 Keeping away water  
 from outer areas



Overlay of results and presentation  
 of the affected municipal building

Water levels and flow velocities  
 of the flood simulation



## KEY DATA

- » 2 digesters,  $V = 2 \times 5000 \text{ m}^3$
- » 3 CHP 2 + 1, 525 kW each with 2 transformers, 20 kV / 400 V each
- » 14-field LV switchgear  
400 V / 3000 A in plug-in technology
- » Renewal of the PLC system
- » Successive connection of the new system during operation
- » Extension of lightning protection in connection with the installed cover of the digester

Lightning protection interception rods





CHP with acoustic hood  
400 V / 525 kW<sub>el</sub>



14-field LV main power distribution  
400 V / 3000 A plug-in technology

## Digester Würzburg – Electrotechnical Equipment

Municipal Sewage Works of the City of Würzburg

Wastewater treatment plant and high-tech go hand in hand: outstanding architecture, a clearly defined purpose and state-of-the-art technology are the characteristics of the new digesters in the Würzburg wastewater treatment plant.

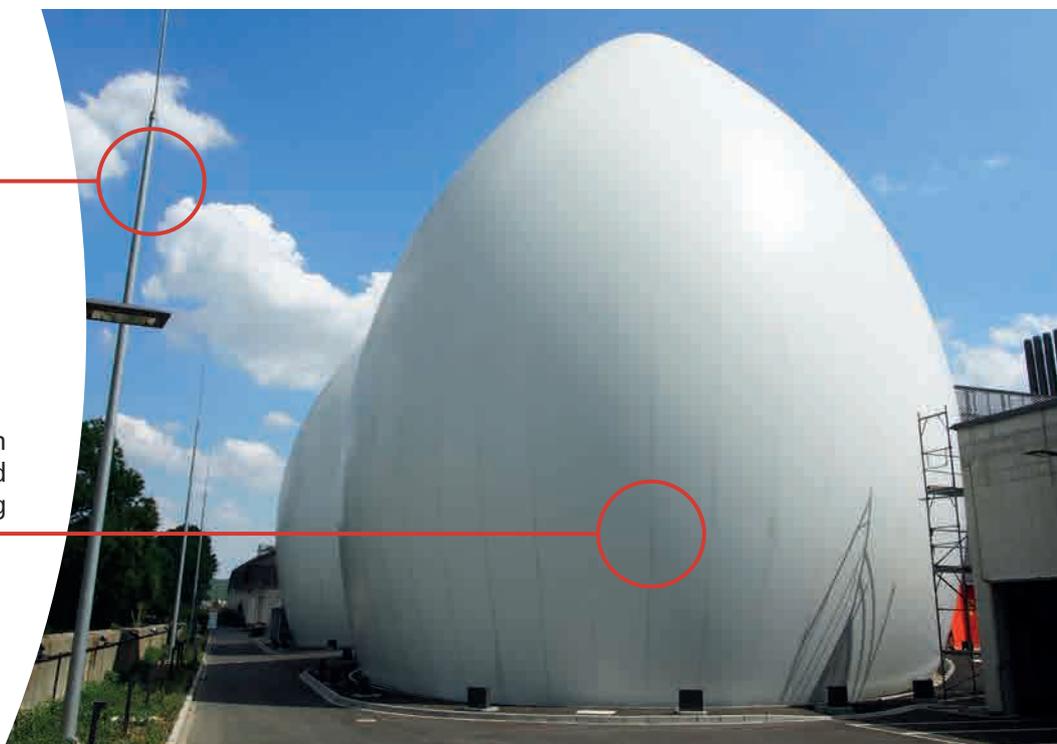
In the future, 4,500 tonnes less of sewage sludge will be produced each year with an almost tripled annual capacity of 10,000 cubic metres. Less waste but an increased production of digester gas and more power generation. 4.2 million kWh of additional electricity can now be produced to be consumed directly. As a result of this measure, the CO<sub>2</sub> balance improves enormously and the odours are also reduced.

A focal point of the electrical engineering was the integration of the generated energy with the Mainfranken network in line with the Renewable Energy Sources Act. Especially the lightning protection system was a design challenge. On the one hand it was necessary to adapt the components of the new digesters according to the requirements of the German Association of Electrical Engineers and, on the other hand, to protect their design membrane and the potentially explosive areas against lightning strikes.

DAHLEM was responsible for the electrotechnical planning for all service phases.

Lightning  
protection telemasts

Digester with  
illuminated pressurised  
explosion-proof casing





Mathias Kleffmann, Mechanical Engineer,  
Head of Technical Equipment at DAHLEM

## BIM

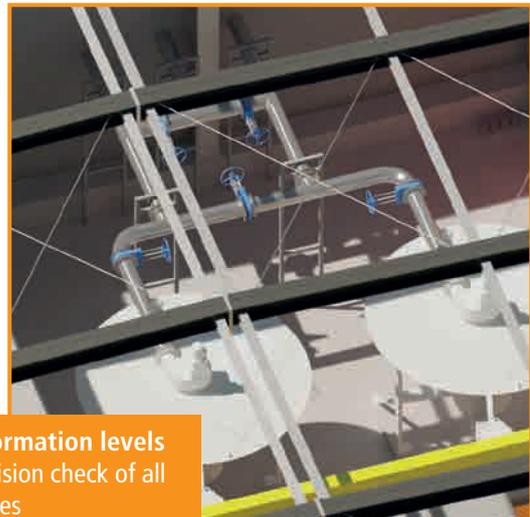
### Interface Management

We have been working with Building Information Modelling (BIM) for three years. It enables us to perfectly unravel the various trades of objects to be integrated as well as the necessary construction processes and interfaces. It not only allows us to develop well-visualised 3D models but also to store a great deal of information. The object-oriented processing in a model is ingenious, as all necessary disciplines are integrated and considered at the same time.

A big advantage is the automatic collision control. Right from the start, we can adjust all components and piping systems within a building to avoid overlaps. The determination of quantities and material properties makes it possible, for example, to create component lists. Once you have used the advantages of object-oriented structures, you no longer want to go back to 2D plans.

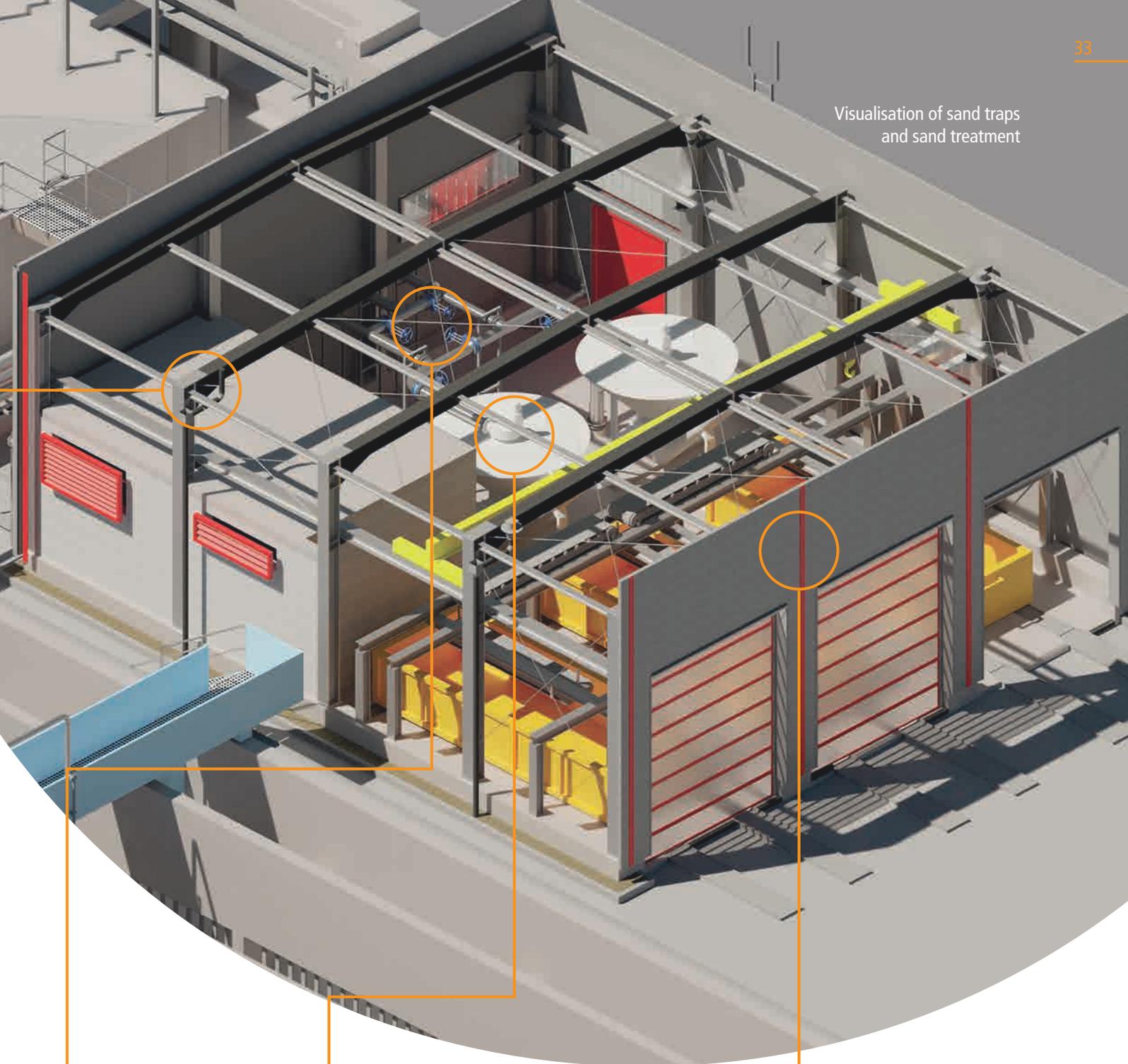


**Structural design**  
Planning accuracy  
Construction points



**Information levels**  
Collision check of all  
trades

Visualisation of sand traps and sand treatment



**Process engineering**  
Space required /  
operating routes



**Object planning**  
Architecture

# NEWS

## Accomplished!

After two and three-years of training, Anika Loose and Monika Onskulyte successfully passed their final draftsman exam for draftsman drafter in 2019. We are excited to receive their support and welcome both as members of the DAHLEM team at our branches in Essen and Darmstadt. Both agree: "Well, the most important thing for us is, of course, that we passed the exam! We finally made it and studying is over for now! It's a really great feeling to leave the exam room as a qualified draftsman. We are happy about this achievement and can start now our career."



## Consultant for Heavy Rain

Since the beginning of 2019, our Darmstadt employee, Dipl.-Ing. Tim Schneider has been DWA-certified as Heavy Rain Precautions Specialist Planner. Tim has been working intensively at DAHLEM on the topics of heavy rain and urban flash floods since 2010 and sees this further training as a significant addition to his diverse project experience. "Protection from heavy rainfall is a communal task. Modern simulation methods and integral approaches create innovative solutions. Holistic measures generate synergy effects such as heat reduction and the improvement of the quality of life in urban areas."

Central overflow as an emergency exit in case of heavy rain



## Together for Bees, Bumblebees & Co.

Under expert guidance, young and old prepared the area for the new flower meadow in the DAHLEM garden property with employees' families being invited to help. The children, who removed the grass sods, harrowed and scattered the seeds on the area, had a lot of fun. With a smile, Jan-Gregor Dahlem tells us that his five-year-old son has such a good memory of this experience that at kindergarten he still talks about the flower meadow. The intensive commitment to nature was well rewarded with a hearty snack.

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