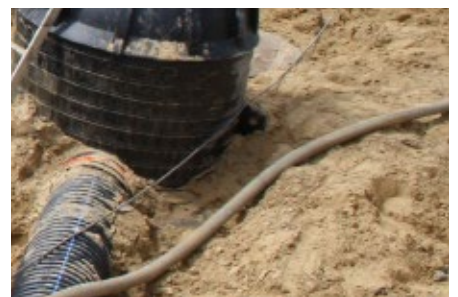
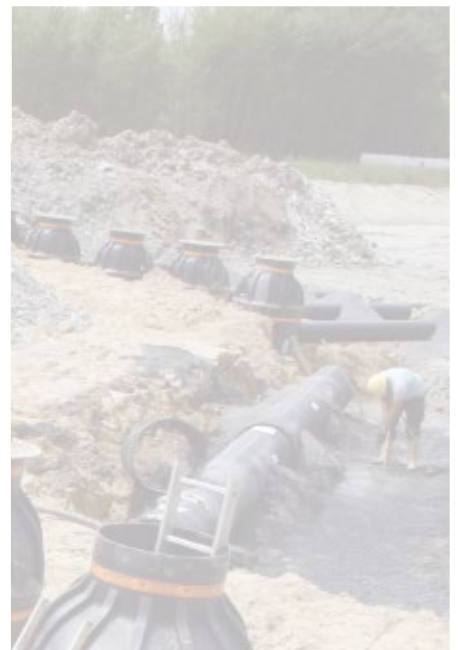


Case study

SediPipe® harp instead of conventional stormwater sedimentation tanks



Construction project:

Stormwater treatment with downstream retention in "Schörmel" industrial park, district Warendorf/Sendenhorst

Builder:

Wastewater treatment service of the town of Sendenhorst

Planning:

Ing.-Büro Gnegel
Osttor 43,
48324 Sendenhorst/Germany

Construction execution:

Rottmann Bauunternehmen GmbH
Vornhelm Str. 115,
59269 Beckum/Germany



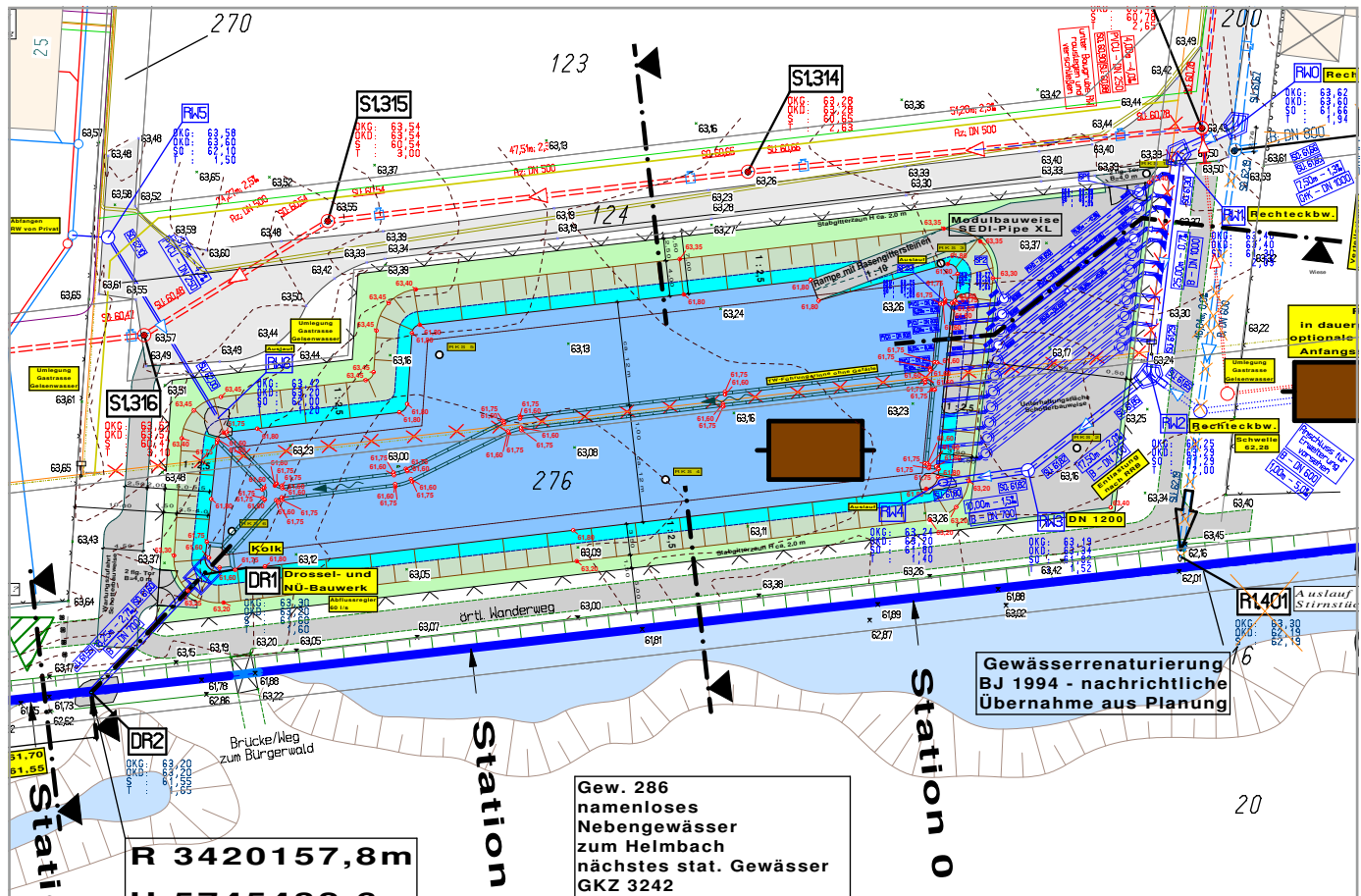
DRAINAGE SYSTEMS

ELECTRICAL SYSTEMS

BUILDING TECHNOLOGY

INDUSTRIAL PRODUCTS

Flexibility even in large systems



Site plan fragment of stormwater retention basin

A technically challenging project was implemented by the Sendenhorst wastewater treatment service in Schörmel industrial park: A stormwater treatment system, which must remain open to change despite its large connectable area. Seven high-performance SediPipe XL 600/18 sedimentation systems provide safe and reliable treatment of stormwater, flexible expansion to eleven treatment systems is possible at any time.

The planners had to tackle a tricky stormwater management task in Schörmel industrial park in the town of Sendenhorst (district Warendorf): Stormwater runoff from heavily polluted trafficked areas as well as that from roof surfaces which is hardly polluted at all was discharged into a stream without any restrictions and treatment whatsoever in the industrial park up until now. In the future, a new stormwater treatment system with downstream retention shall clean the precipitation water prior to discharge.

SediPipe® XL protects downstream waterbodies

The requirements on the new system were clear: It had to meet the institutional compliance proof according to DWA M 153, the Federal Water Act as amended, as well as the North Rhine-Westphalia's "Trennerlass" regulation. Decentralised or semi-centralised treatment had thus priority over a centralised system. This

means that, in the future, heavily polluted stormwater from the industrial park must be cleaned directly where it occurs. This is how contaminated precipitation water is prevented from mixing with non-polluted stormwater, and the downstream waterbodies remain free from pollutants.

Flexible modular design for complex framework conditions

Additional framework conditions made planning work in Sendenhorst industrial park particularly complex: In addition polluted trafficked areas, the planners also had to take into consideration non-polluted residential areas, potential expansion areas, as well as not yet impervious surfaces of individual properties. Reliability and easy maintenance constituted additional prerequisites for the new system. Soon enough it became obvious that a sedimentation system with a flexible modular design had to be created, and a stormwater

sedimentation tank with a rigid concrete design was out of the question. So, it was easy to decide in favour of SediPipe XL. The possibility to adjust the system in a modular design was of particular importance to be able to react to the actual degrees of expansion as well as the potential expansion territories. In addition, the certification by the Regional Office for Nature, Environment and Consumer Protection was of crucial importance to obtain an approval of the system under the German Water Act.

This technical drawing is a plan view of a sewerage system. It features several key elements:

- Manholes and Inspection Points:** Labeled with 'RKS' (Rücklaufkammer) and 'OKG' (Örtliche Kanalarreinigung). For example, RKS 1, RKS 2, RKS 3, and RKS 4 are marked with their respective elevations and diameters.
- Pipes and Channels:** Various pipe sections are shown with labels like 'DN 1200', 'DN 1000', and 'DN 700'. Some are labeled as 'B' (Beton) or 'PVCU' (PVC-U).
- Structures and Features:**
 - Modulbauweise SEDI-Pipe XL:** A large rectangular structure, likely a treatment or storage unit.
 - Stabgitterzaun:** A fence or barrier, labeled 'H ca. 2,0 m'.
 - Rampe mit Rasengittersteinen:** A ramp made of grass pavers, labeled '1:10'.
 - TW-Führungsrinne ohne Gefälle:** A trench for water supply without a slope.
 - Unterhaltungsfläche Schotterbauweise:** A maintenance area with gravel construction.
- Elevations and Slopes:** Numerous numerical values are scattered throughout, representing elevations (e.g., 63,26, 63,33, 63,40) and slopes (e.g., 1:2,5, 1:10, 1:5,0).
- Other Labels:** 'Auslauf' (outlet), 'Rechteck' (rectangle), 'Schw' (Schwamm, sponge), and 'Umlegung Gasstrasse' (diversion of gas street) are also present.

Modular solution can be extended to eleven units

available are connected, the stormwater treatment system can be easily expanded to a maximum of eleven units. The SediPipe XL modular solution can be flexibly adjusted to each situation even when connecting large areas, and it can be easily integrated into the existing sewer networks. In order to make a large system hydraulically safe even in

the event of extreme precipitation events, a tank overflow with a bypass DN 1000 as a relief was included in the design. This ensures that even a rain yield factor critically significant for treatment is efficiently cleaned, and also large water volumes can be reliably handled, whereas the sediment already settled is prevented from re-entrainment.

SediPipe XL is the ideal solution when it comes to treating polluted stormwater runoff from large connected areas. Retention of light liquids in case of spills in dry weather is a breeze for the FRÄNKISCHE system. Coarse and fine particles settled can no longer be re-entrained after sedimentation.

SediPipe XL is as efficient as a stormwater sedimentation tank, yet far more flexible: Planners can individually adjust system dimensions and the installation location to local conditions. The system consists of a start shaft DN 1000, a target shaft DN 1000 with an immersion pipe, as well as a sedimentation path DN 600

with four available lengths of 6, 12, 18 and 24 m. Besides its modularity, the simple and robust design, easy installation and trouble-free maintenance of the stormwater treatment system are particularly convincing.

Towards a certain future with SediPipe® XL



FRÄNKISCHE delivered seven already pre-fabricated SediPipe XL systems to the construction site to be installed within the shortest time.

Flexible expansion even with a large connectable area, robustness, efficiency and simplicity – SediPipe XL provided the optimal solution for the technically challenging stormwater treatment of Schörmel industrial park in the town of Sendenhorst, thus making it fit for the future.

Specific features:

- Industrial park with an area of 12 ha
- Modular expansion to 15 ha
- Cost-efficient alternative to concrete tanks (cost savings of up to 30 %)
- Space-saving due to underground installation
- Quick installation time
- Trouble-free maintenance

Scope of delivery:

- 7 type SediPipe XL 600/18 stormwater treatment systems
- 70 m of Robukan SMR DN 300 SN 16 as inlet/discharge pipe



SediPipe XL 600/12 has been awarded the "IKT-geprüft gem. Trennerlass" certificate of the IKT Institute for Underground Infrastructure (Institut für Unterirdische Infrastruktur GmbH) in Gelsenkirchen.

Due to additional practical audit procedures, the applicability of the system for decentralised stormwater treatment in conformity with requirements of the North Rhine-Westphalia Ministry of the Environment (LANUV) has been proven.