

Shafts and Storage Systems

- 1 | **HOBAS® GRP Pipe Systems – Custom-tailored Stormwater Overflow Systems for Combined Sewers**
- 3 | **HOBAS® Tank for New Incinerator Plant in Vantaa, FI**
- 4 | **Benefits of HOBAS® GRP Shafts and Manholes**
- 6 | **HOBAS® CC-GRP Tank for potable water and fire fighting water installed in Látkovce, SK**
- 7 | **HOBAS® Storage System as Part of a Highway Drainage System , PL**

HOBAS® GRP Pipe Systems Custom-tailored Stormwater Overflow Systems for Combined Sewers



The collection and discharge of storm- and wastewater represents a daily challenge for wastewater facilities and municipalities. In combined systems, domestic, commercial, and industrial sewage and stormwater are all transported to the wastewater treatment plant by one shared sewer. Due to an increase in heavy rain events, sewers are frequently surcharged and wastewater treatment plants reach their capacity limit. For the system to operate flawlessly even at peak times, stormwater retention basins are installed at suitable points. In combination with overflow structures, they regulate the water quantity to be led to the wastewater treatment plant. The retention basins serve as temporary storage from which the wastewater is gradually discharged.

HOBAS offers two alternatives to conventional retention basins: the HOBAS CSO (Combined Sewer Overflow) Chamber, a modular overflow system for combined sewers with low-maintenance solids separation, and GRP storage systems.

HOBAS CSO Chamber

In cooperation with the CVUT University Prague and in compliance with the EU Water Framework Directive 2000/60/EC, HOBAS developed a particularly efficient GRP overflow system for combined sewers: The HOBAS CSO Chamber separates solids from liquids very efficiently and directs them to the wastewater treatment plant, while the cleaned part of the water is discharged into the receiving water course.

Every single HOBAS CSO Chamber is made to measure. Compared to conventional sewer overflow systems, the HOBAS CSO Chamber provides numerous advantages: Its cleaning performance is much better even at low flow

HOBAS CSO Chamber

Year of construction

2013

Total length of pipe

30 m incl. throttle and pumping shaft

Pipe specifications

DN 1600, SN 5000 and 10000, PN 1

Type of installation

Open cut

Application

Sewer system

Client

Wasser- und Abwasserzweckverband Eichsfelder Kessel

Designer

Ingenieurgesellschaft für Wasserwirtschaft mbH Dipl.-Ing. Klaus Kunter

Building contractor

Tief- und Meliorationsbau GmbH

Advantages

Modular and compact structure, quick and easy installation, additional storage function, custom-tailored solution

Storage System

Heidelsteinstraße

Year of construction

2012

Total length of pipe

55 m

Diameter

DN 3000

Stiffness class

SN 10000

Pressure class

PN 1

Type of installation

Open cut

Application

Storage sewer

Contractor

Josef Gehring GmbH & Co. KG, Fulda

Building contractor

Abwasserverband Fulda

Advantages

Low wall thickness, quick installation, light weight

rates, production time is very short, installation quick and easy, operation problem-free, the unit requires only little space and excavation – and not least, it helps protect the environment considerably.

The first HOBAS CSO Chamber was installed in 2007. Up to now, several projects have been realized in Slovakia and the Czech Republic. The first HOBAS CSO Chamber in Germany was implemented in Thuringia in fall 2013. The products' numerous advantages convinced the client and the designer – instead of the originally planned concrete structure, they opted for the new HOBAS Technology. Apart from the CSO Chamber, HOBAS also supplied the pipework as well as the pumping station for the throttled outlet leading to the wastewater treatment plant.

HOBAS GRP Storage Systems

Storage systems are employed when the installation of open retention basins is not possible due to space limitations (e.g. in city centers). Both products operate essentially in the same way: In events of heavy rainfall, the incoming water is first accumulated, then throttled and led into the subsequent sewer system.

Leftover deposits of suspended solids in the sewer are washed out with the next rain and conveyed to the wastewater treatment plant. Thanks to the very smooth inner surface of HOBAS GRP Products, the sewer system is practically self-cleaning and requires hardly any maintenance. A practical example for such a storage system is the project Heidelsteinstraße in Fulda, Germany. Since the stormwater and sewage system was overburdened and in urgent need of rehabilitation, a new combined sewer was to be built and connected to a HOBAS GRP Storage System DN 3000.

The installation of the originally designed concrete structure proved to be too costly, which is why GRP was chosen as an alternative. Apart from the overflow structure, the whole storage system is made of GRP, i.e. even the throttle and connecting structure as well as the intermediate shaft.

The 3.5 m difference in height on a length of approximately 8 m represented a particular challenge when connecting the overflow structure to the adjacent stream. No problem for HOBAS Experts though: The difference in altitude could be easily compensated by means of a swan-neck bend with an angle of 45°. The completely prefabricated modules were easily installed and connected to the combined sewer. At the beginning of 2013, the construction works were completed to the satisfaction of all parties involved.

Fmd: hobas.germany@hobas.com

