

## Safely Stored by All Means HOBAS® CC-GRP Retention Systems Prevent Floods and Water Scarcity, PL

When densely populated urban areas expand, aboveground as well as underground infrastructures are extended to suit the growing demands. Sewer systems are counted among the most important underground structures. In regard of such, dealing with extremely high and low water peaks has become a particularly pressing problem in recent years as climatic change may one-time bring droughts and another torrential rain. Temporary water storage capacities are therefore being enlarged or added in drainage systems. Since they present a by far more cost-efficient solution than an otherwise extensive enlargement of existing networks they are also applied for securing potable water supply, flood protection, sewer and treatment plant relief and for leveling different degrees of water pollution. Under the often constricted circumstances at the construction sites, light weight and compact components are highly advantageous, facilitating transportation and handling; a safe and simple joints speed up installation and make sure the whole system is leak-proof.

Poland has been investing a lot in its infrastructure over the past years and a considerable number of projects have been realized with various types of tanks. HOBAS supplied for instance rainwater retention tanks but also emergency and special tanks. Particularly worth mentioning are projects realized in Warsaw, one of which was implemented in the course of redeveloping Jerozolimskie Avenue. Wastewater needed to be retained to make sure that no more than 50 liters run into the stormwater sewer per second – a limit set by the Municipal Water Supply and Sewage Company (MPWiK). Two new retention tanks with a total capacity of 440 m<sup>3</sup> have been integrated to this end. The first is 90-m-long and DN 2400 in diameter and is equipped with a swirling chamber whereas the second, 22-m-long and DN 2000 in diameter, accommodates a horizontal sedimentation tank.

Another outstanding project which has also been implemented with HOBAS Tanks lies on the routes S2 and S79 in Warsaw. Plans include the construction of a combined sewer storage system, from which wastewater is led through an oil-separator with a coalescing filter (oil and particles are filtered out of the wastewater) and continues into a settling tank. The wastewater is then stored in retention tanks, from which it travels through an overflow chamber to a transit chamber. With the help of this retention system, peak wastewater flows are kept below the permitted limit, the amount and concentration of pollutants is reduced by sedimentation of slurry and harmful effluents can be retained and neutralized.



The S79 road drainage project involved the construction of five tanks realized with DN 1800 CC-GRP Pipes providing 82 to 956 m<sup>3</sup> volume. Even more tanks, namely 11, were used for the road drainage of S2. The capacity of each of the GRP Tanks DN 3000, that were installed in parallel lines, lies between 650 and 3500 m<sup>3</sup>.

In all described projects the awarding authority opted for HOBAS CC-GRP Systems. Decisive factors were the broad range of available diameters as well as the flexible manufacturing process that enables the fabrication of customized fittings and components to perfectly suit the required capacities and given conditions at the construction site. The material's resistance to abrasion and chemicals as well as the smooth inner surface of the pipes, that prevent incrustations, were the most important features from the client's point of view. And the construction companies were particularly pleased with the relatively light-walled units' low weight and compact design which together facilitated transportation and allowed for narrow trenches as well as less excavation work. The easy assembly of the products' jointing system increased the installation rate significantly and contributed to the overall success of each project.

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Year of construction  
**2009 - 2011**

Total length of pipeline  
**3.3 km**

Diameter  
**DN 1800 – DN 3000**

Pressure class  
**PN 1**

Stiffness class  
**SN 10000**

Installation method  
**Open trench**

Application  
**Road drainage**

Client  
**GDDKiA**

Constructor  
**Teerag-Asdag**

Advantages  
**Simple and fast installation, low roughness coefficient, leak-proof, long service life**

