

Expansion of the Frankfurt International Airport Rain water retention basin K

Characteristics:

- Volume: 12,500 m³
- External dimensions: 69.7 m x 51.2 m
- Built structure depth: 9.0 m bis 9.7 m
- Mean water level: 4.50 m
- 6 basin compartments
- Light material separator NG 2,000
- Pumping station to the river Main
Q = 2,000 l/s
- Inflow pumping station 1: 2 x 100 l/s
- Inflow pumping station 2: 2 x 375 l/s
- Drain pumping station ARA: 2 x 35 l/s



Rain water retention basin K

Scope of Work:

- Development of the drainage plan as part of the planning approval procedure of 2007
- Pre-planning and cost estimates
- Preparation of building plans on scales
1:200 and 1:50
- Cost calculation
- Detailed planning
- Preparation of and contribution to awarding of contract
- Construction site management
- On-site construction supervision

Description:

As a result of the expansion of the Frankfurt International Airport, a rain water retention basin was built at the western point of the existing parallel runway system in the area of the entry lanes. In the retention basin rain water will be temporarily stored, which accumulates with rain water from taxiways, runways and deicing pad West 1 and 2 which is loaded with de-icing agents during the winter operation. Depending on the COD concentration, the rain water will undergo a treatment process or will be discharged to the river Main.

The retention basin consist of two layers and has an effective volume of 12,500 m³. The lower layer is composed of the intake structure with two inflow pumping stations, the 6 basin compartments as well as the drainage pumping station towards the treatment plant. On the upper layer, the light material separator with a cleaning capacity of 2,000 L/s as well as the drain pumping station towards the river Main are located. With the drain pumping station the non-treated rain water will be discharged to the river Main with 2,000 l/s.

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