

Rainwater management in Krems Business Park, Austria

At times when flooding is on the increase, local authorities think about the omissions of recent years and decades. And they have to do this, as the damage caused by water in recent years have become a regular item in the accounts of local authorities, cantons and states. Unfortunately it is not until it gets difficult to balance the books that ready arguments are available for taking new directions in water management. And here it is important not to be too morose about having to do today what one could have wanted to do yesterday.

The Lower Austrian town of Krems an der Donau demonstrated this in terms of rainwater management. Here the municipal engineers drew up estimates for draining a proposed 33 hectare industrial estate with a conventional sewerage system. But before the community started to implement this, it was well advised to have an alternative concept devised, for open rainwater management. This produced pleasing results. It was possible to use infiltration techniques even for an industrial area in the Danube catchment area with relatively high groundwater levels. Of course the gravelly, sandy subsoil with a Kf value of 1×10^{-3} was of considerable

assistance here. The director of building was particularly pleased when he was able to show a financial saving of over 50 % against the proposed costs for the sewerage solution.

The technical framework for this success lies in a system of long swale strips along the main access road, and infiltration basins between the buildings. Alongside the main access road, the yard and parking areas drain into the decentralized gravel trenches, each complete in itself, after passing through light-density material separators. There are planted retention basins above the trenches. Once the water has arrived here it soaks through a treatment layer about 50 centimetres thick into the gravel trench, which is clad in shear wool, and runs from there into the ground. Roof water flows into planted soakaway basins, and from there into the groundwater. All the sewage is fed into a separate sewer and taken to the communal sewage treatment plant. A relatively large number of roof gardens definitely contribute to the overall efficiency of the concept. Rainwater is delayed in draining from about a third of the buildings. The effects of open infiltration are best studied when rainfall is heavy. The industrial estate has

canals running through it from which water occasionally runs over the edges on to the lawns – but without getting as far as the buildings. But the Landesdorfer Arm, which is linked directly with the Danube, maintains a water level that is well under the top of the embankment. The Krems East industrial estate does not contribute a drop to possible flooding on the Danube and its tributaries.

Constructing a swale system between parking spaces



Gaps in the kerb allow rainwater to run off the streets into the grassed swale alongside and seep away there.



Infiltration via open joints in the pavement

