



Green Roofs as a Module of Urban Water Management

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Short description of the speaker

Prof. Dr. Roth-Kleyer will present standard methods to determine the water retention capacity of green roofs and discuss problems and key factors which have to be considered.

Biographical details or background information

Over the last few years a clear rethink has been taking place in the field of urban water management. One aim is to deal with precipitation in an economically and ecologically orientated way. The precipitation should, as far as is possible, drain away directly. Suitable containment measures for flow balancing are just some of the things being used here. These can include green roofs, which store water and release excess water gradually over time. Green roofs are just one "module" of an environmentally sound drainage system for settlements. The individual solution packages for each local and structural situation have the aim of realising optimum concepts. General information is provided below about the possible methods of rainwater retention in green roofs - and key terms like discharge coefficient, top discharge coefficient, water retention and maximum water capacity will be defined to give a basic understanding of the subject. All green roofs, including thin-layer green roofs, have the following effects in the context of precipitation:

- Reduction of the water discharge from precipitation
- Delay of the discharge of water, or the proportion of excess water which surpasses the water absorption capacity of the green roof
- Retention of water available to plants
- The water is transpired by the plants and evaporated by the system substrate (evapo-transpiration)

Water retention measures offered by green roofs do not require any additional space and thus no extra land investments are necessary. Furthermore, green roofs count as compensatory and replacement measures within the framework of the Federal Nature Conservation Act.