

## Eco-street (“Ökostraße”) - Ober-Grafendorf

*Environment-friendly urban street design for decentralized ecological rainwater management in Ober-Grafendorf*



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The “eco-street” is a system of vegetated, aesthetically appealing roadside surface strips covered with special substrates of natural origin and planted with greenery that are able to absorb, retain, store and filter large amounts of water in short time (DrainGarden®). The specifically developed soil substrates are layered in a way as to combine high water permeability with high storage capacities. In case of heavy rainfall, the water is not flowing from streets and other paved surfaces into the sewer, but into the green areas. Each cubic metre of substrate can store up to 500 litres of water. As it is required by regulations in place for conventional water retention structures, the system is designed to assure flood protection up to heavy precipitation events with a 100 year return interval. The water remains available to the plants, is filtered by the substrate and allowed to infiltrate slowly into the groundwater body. The micro-climatic effect of the water used by the plants for transpiration equates to the cooling capacity of a 100-years-old beech tree on a hot summer day and is able to reduce the local temperature by up to 5°C during heat periods. Further environmental co-benefits include the storage of CO<sub>2</sub> by plants and substrate, the containment of growth of sealed soil, an increase in urban green spaces, and visual improvement of the townscape.

The system allows the municipality to avoid investment costs for construction of additional sewage pipes as well as regular operational costs for maintaining the sewerage and operating pumping facilities. In addition, the existing urban water drainage system is disburdened, and costs for operating the municipal wastewater treatment facility as well as for irrigation and maintenance of the urban greenery are reduced.

Video: DrainGarden® <https://www.youtube.com/watch?v=oPnsBdGjpdU&feature=youtu.be>  
Contact: Mayor of Ober-Grafendorf, Rainer Handlfinger [rainer.handlfinger@ober-grafendorf.at](mailto:rainer.handlfinger@ober-grafendorf.at)