

Rainwater management

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Challenges in existing urban areas

❖ reduction of evaporation



❖ reduction of groundwater renewal



❖ flooding

❖ pollution of surface waters

❖ hydraulic overload of waste water treatment plants

Sustainable rain water management measures



open drain
and retention



green roofs



use



infiltration



separation of rain
and waste water



Sustainable rain water management

Priorities



1. AVOID : minimum surface sealing
2. INFILTRATE : promote groundwater regeneration
3. RETAIN : near-natural retention
4. DRAIN : open drain integrated into natural surroundings



“Blue Green infrastructure” as key elements for climate change adaptation

(adopted by Government Council 20.4.2018).

Sustainable rain water management



Water did not used to be part of urban areas. When it becomes visible... there is a problem (e.g. flooding).

BUT ...

**Water presents
a strong attraction
for humans
and
gives us positive energy**



Example 1: Integrated rain water management



Example 2: Integrated rain water management



Example 2: Integrated rain water management



Lessons learned and outlook

- Retaining rain water at the surface allows for a **better urban planning**
- **Multidisciplinary teamwork** between urban planner, engineer, landscape architect, and municipal & national administrations leads to locally adapted projects.
- Ensure **multifunctionality** of rain water retention (design element, local recreation, playground, ...)
- **Regular maintenance** by local administration or operator (needs to be involved in planning)

New approach is being elaborated

- Receiving water parameters
- Regionally adapted precipitations

Thank you!

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