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
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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