

URBAN GREEN-BLUE GRIDS

for sustainable and resilient cities

Measures › Water › Buffering and infiltration › Rainwater ponds: a combination of buffering, purification and infiltration › Rainwater ponds for buffering and purification of moderately polluted water

Rainwater ponds for buffering and purification of moderately polluted water



EVA-Lanxmeer, Culemborg, The Netherlands © atelier GROENBLAUW, Madeleine d'Ersu

Data

Dimensioning: 10% -20% of the connected surface area

Application: For moderately to well drained soils with a not too low groundwater level

Advantage: Relatively little space required

Disadvantage: Maintenance is necessary

Water ●●

Heat ●●

Biodiversity ●●●

Air quality ●

Social and economic importance ●●

Multifunctional space usage ●●●

Construction costs ●●

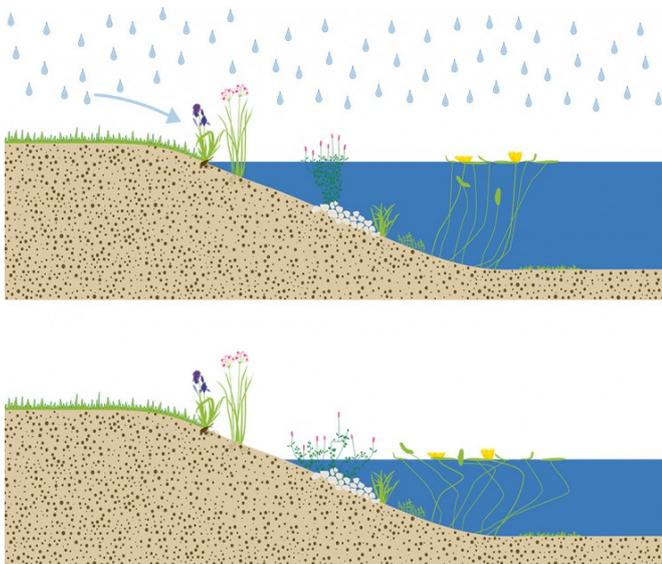
Maintenance/management ●●

In areas that experience moderately polluted rainwater, one option is to realise rainwater ponds for temporary storage and purification using vegetation. The polluted water might also undergo an additional pre-purification treatment in a sand filter in the bank zone.

Water is purified in a pond with vegetation because the pollutants settle on the bottom and the plants break down and absorb the pollutants. Introducing a circulation system can guide the water specifically along the planted bank zones to increase the purification. An attractive artwork or playground element might be made part of such a circulation system.

The pond should ideally be at least 1.5 metres deep. That depth limits the degree to which the water heats up in the summer and diminishes the risk of problems with the water quality. In the winter, water that deep will not freeze solid and the pond will continue to offer a zone for fish to live in.

If the ground permits, the overflow from the pond can be designed to act as an infiltration system. [Geiger et al., 2009]



Section schemes with a higher water level (during rainfall) and with a lower water level. © atelier GROENBLAUW, Marlies van der Linden (based on: Geiger et al, 2009)

Literature

- Geiger W., Dreiseitl H. & Stemplewski J.; Neue Wege für das Regenwasser – Handbuch zum Rückhalt und zur Versickerung von Regenwasser in Baugebieten; Oldenbourg Industrieverlag GmbH, München, 2009

Source: <http://www.urbangreenbluegrids.com/measures/rainwater-ponds/rainwater-ponds-for-buffering-and-purification-of-moderately-polluted-water/>

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Green-blue urban grids make cities sustainable, resilient and climate-proof. This website and the design tool will help to find fitting measures and inspires with attractive examples.