

URBAN GREEN-BLUE GRIDS

for sustainable and resilient cities

Measures › Water › Buffering and infiltration › Infiltration meadows and infiltration strips with above-ground storage

Infiltration meadows and infiltration strips with above-ground storage



Portland State University, Portland, US © atelier GROENBLAUW, Madeleine d'Ersu

Data

Dimensioning: 10% - 20 % of the connected surface area
Application: Also applicable for a moderately permeable surface
Advantage: Low tech, low maintenance, robust
Disadvantage: Surface is of limited in use for other activities

Water ●●●

Heat ●●

Biodiversity ●●

Air quality ●

Social and economic importance ●

Multifunctional space usage ●●

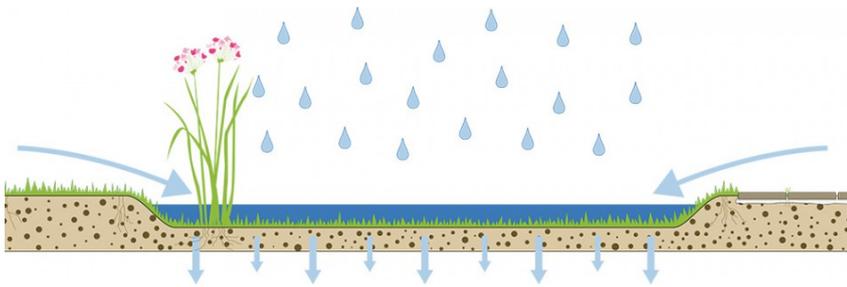
Construction costs ●

Maintenance/management ●

Adding ditches or fields next to paved surfaces to temporarily store runoff is a simple way to allow water to infiltrate from clean hard surfaces such as roofs and cycle paths. Besides the

volume of precipitation that needs buffering, the permeability of the ground is another factor that determines the dimensions. Soil samples need to be taken to assess that permeability. As an indication, an area equalling 10-20% [Geiger et al., 2009] of the impervious surface is required. In addition to infiltration ditches, infiltration meadows are also an option.

Infiltration systems with above-ground storage can be deep or shallow, and naturally the depth and area determine the buffering capacity. In residential areas, a maximum depth of 30 cm is sufficient, to present less of a hazard for playing children. The infiltration systems can be given natural, gentle and safe verges. Roots and the animal activity in the soil ensure that the ground's permeability is retained. These systems should be designed in such a way that they are not used too much by playing children or other intensive activity when they are dry, which might cause the soil to be compacted and the infiltration capacity to diminish.



Section scheme © 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/infiltration-meadows-and-infiltration-strips-with-above-ground-storage/>

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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.