

Swales gain valuable urban functions with Rockflow

Heel Case | Schimmert Case



Rockflow facilitates the construction of swale:

- Increased buffer capacity
- Easier green maintenance
- Green strip available for use by residents

Situation in Heel after implementation Rockflow

The integration of swales in residential areas involves significant urban development challenges. The space available for the collection of excess rainwater is often restricted. As a result a swale must be relatively deep, which means that the sides are often steep. This can create a hazardous situation and makes maintenance difficult, leading to regular problems when the swale becomes overgrown with weeds or blocked with litter. Furthermore, the capacity gradually decreases due to a layer of silt accumulating over time, hindering the infiltration of the water into the soil.

Additionally, traditional swales can only be used for the purpose for which they are intended: the collection of rainwater during heavy showers. The surface is then no longer usable for any other purpose.

New usage opportunities

With Rockflow, a swale acquires new usage opportunities. The design is based on an existing swale design, in which only the infiltration medium is replaced by Rockflow. By installing Rockflow underneath a swale the swale itself becomes shallow enough to allow easy maintenance with a regular mower. Because the gradient of the swale with Rockflow is no steeper than 1:3, there is no obstacle to mowing. In addition, a swale with Rockflow has a flat and load-bearing base (VOSB 18 / 30) making it suitable for use as a park or functional green space. Occasional recreational use is also possible.



Better buffering

With the addition of a filter system, any suspended particles will be filtered out, providing many years of a perfectly functioning buffer. The filters are essentially stone wool sheets in a replaceable cartridge system allowing for simple and fast maintenance. The stone wool itself is also a large filter. Water discharge to the soil or sewer remains optimum at all times.

Improvement of existing swale

Even existing swales can easily be redesigned using the Lapinus Rockflow system, providing new functionality for the neighbourhood or district.



Heel Case, NL

Problematic swale in Heel resolved using Rockflow

The maintenance problems of a swale in Heel were resolved by fitting the swale with a Rockflow water management system*. Water not infiltrating quickly enough is fed directly to the buffer via the storm drains from where it can infiltrate to the surrounding soil.

The swale is now shallow and hardly any lower than its surroundings, and is therefore accessible by a standard lawnmower. The buffer capacity is guaranteed for a long period.

** This 45-metre swale provides water collection over a surface area of 1,350 m² with a design rain shower of 40 mm in 60 minutes. 304 Rockflow stone wool elements combine to form a total buffer of 55 m³.*

Schimmert Case, NL

Schimmert swale: it's there but you can't see it

A swale based on a Rockflow water management system is unobtrusive, as all of its functionality and technology is underground. In Schimmert (borough of Nuth) they made full use of this feature to convert an intrusive but essential swale (in the form of a deep ditch alongside a road, between buildings) into an invisible water buffer by using Rockflow. The collection capacity remained the same, while the ditch made way for a fresh, flat green strip.

** This swale was designed for a rain shower of 45 mm in 30 min. The buffer has an area of 3,333 m² and is 150 m³.*