

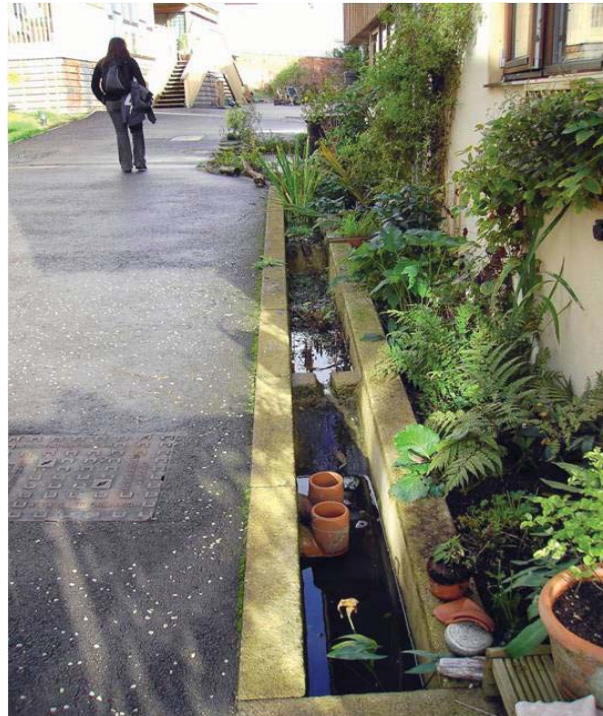
Canals, rills and other channel systems

A photograph of a residential canal system. In the foreground, a concrete channel is filled with water and lush green yellow irises. The canal runs alongside a light-colored brick wall on the right and a green lawn on the left. In the background, a dark car is parked on a driveway, and a house with a brick exterior is visible through the trees. The text 'Canals, rills and other channel systems' is overlaid in large, white, sans-serif font across the center of the image.

Canals, rills and other channel systems

Description

Canals and rills are open surface water channels with hard edges. They can have a variety of cross sections to suit the urban landscape and can also be planted to provide water treatment. In dense urban developments where space can be at a premium they are an effective way of providing SUDS and can also act as pre-treatment to remove silt before water is conveyed into further SUDS features. There are many SUDS schemes that use channels in imaginative ways to enhance hard urban landscapes.



Rill in a housing development, Stroud

Benefits

Canals, rills and other channel systems



How they work

Rills and canals can be used to collect water directly from hard surfaces or they can be used to convey water, for example where it has been collected via a permeable pavement. They are simply channels that water flows along.

Treatment channels collect water, slow it down and provide storage for silt and oil that is captured. The outlet is designed to act as a mini oil separator thus the channel is very effective at treating pollution.

Cambridge specific design considerations

Channels and rills are essentially an engineering feature, although wherever possible they should be planted to enhance their visual appeal and treatment effectiveness. In many cases there will be opportunities to integrate them into the landscape in innovative ways that enhance the local environment.



Canal with planting in a high density housing development, Stamford

Practical issues and solutions

It is easy to construct canals, rills and treatment channels that meet the aspirations of the City Council. However, many problems that have occurred with these systems are due to a lack of attention during design and construction. Some of the most common pitfalls and solutions are discussed below. CIRIA publication C698: Site Handbook for the Construction of SUDS also contains practical construction help and advice.

Problem: Sparse planting in canals

Solution: Good site supervision and communication to the staff and adherence to the SUDS planting specification.

Problem: Silt build up in canals often occurs due to incorrect planting of the surrounding area.

Solution: Planting of adjacent landscape areas should provide good ground cover and bind the soil together. Bare soil or mulch areas are not acceptable.



Canal leading to an urban wetland Malmö, Sweden



Decorative canal and water feature, Malmö, Sweden

Maintenance schedule and costs

Maintenance of canals, rills and treatment channels is relatively straight forward if they are constructed in accordance with The SUDS Manual. Routine maintenance involves removing debris and litter from the channel or rill. More intensive maintenance work such as removing silt is only required intermittently, about once every 5 years.

The costs of maintenance can be found within Appendix B.