

Gardens**How to make a rain garden**

Already established in the US, a garden designed to absorb excess rain water can help prevent flash floods



Rainwater will be absorbed by the soil after 12-24 hours © Wendy Allen 2021

Jim Cable YESTERDAY

Any child damming a stream discovers how determinedly water finds its way downhill. Gardeners can use this to their advantage, using the journey of rainwater running off their properties to make a “rain garden”. It will not only create an interesting new feature but also reduce the volume of water reaching storm drains and help prevent flash flooding.

At its simplest, a rain garden is a man-made depression in the ground that can fill with water diverted from the downpipe of a building, or run-off from a hard surface such as a drive. It is planted with subjects that do not mind temporary waterlogging. It can be landscaped with cobbles, pebbles and gravel, which, with a surrounding rim made from the excavated soil, called a berm, can add some attractive topography to a flat site.

Rain gardens originated in North America and are well-established there, aided by incentive programmes on offer in many states. In flood-prone areas of Puget Sound, in Washington state, landowners on limited income can apply for a local government grant (typically \$1,000 to \$2,000) to build one.

Dusty Gedge, a green infrastructure consultant, has worked on several pioneering rain garden projects in the UK. He says that in the US many suburban residents are responsible for maintaining grass verges outside their homes. But, “In Portland, Oregon the local government will maintain a verge if they can turn it into a rain garden.” Gedge says the result is a patchwork effect along the streets revealing who was keen to sign up for less mowing.



Rain garden plants including long-flowering Geum 'Totally Tangerine', evergreen rush Juncus inflexus and variegated sedge Carex 'Ice Dance' © Wendy Allen Designs 2021



A small rain garden sown with a mix of perennial wildflowers including Viper's bugloss © Wendy Allen Designs 2021

One of the sites Gedge has advised on was adjacent to a parish office in Hassocks, a small town in West Sussex.

“Water falls on the South Downs and flows towards the coast underground. When it reaches Hassocks, it is significantly augmented by the water run-off from paving, tarmac and roofs. The result is serious flooding,” says Gedge.

He prescribed a large rain garden to take the water from the parish building's roof. Even villages, if in a flood zone, can benefit from people making rain gardens. Together with installing water butts, planting water-absorbing trees and using permeable hard landscaping to lessen run-off, they can counter the effects of high rainfall events.

Rain gardens differ from a bog garden in that they are not permanently soggy. Rather, they are under water for a few hours during and after heavy rain. They drain fully, albeit slowly. As a result, plants for rain gardens need to cope with serial waterlogging as well as dry spells. The list of suitable subjects is longer than you might imagine. After all, dependable cottage garden favourites like ox-eye daisies, aquilegias, crocosmia or black-eyed Susan take whatever the British climate throws at them.



Miscanthus sinensis inflorescence, or silver grass © Alamy

Plants popular in prairie-style schemes — asters, monardas, heleniums, persicarias, Amsonia hubrichtii, Veronicastrum virginicum and ornamental grasses including Panicum virgatum and Miscanthus sinensis — are worth trying. Ferns such as Dryopteris filix-mas and Osmunda regalis are useful if the site is shady. Iris pseudacorus and Iris sibirica have an affinity for wet sites but can also cope with drought. Plants to avoid are those associated with Mediterranean climates, such as rosemary and lavender. Suitable shrubs include Cornus sanguinea, often grown for its red winter stems, and Viburnum opulus. Both natives bear berries eaten by birds and clusters of small white flowers in late spring to early summer that are attractive to insects.

Making a rain garden need not be complex. Roof water is low in pollutants whereas street run-off will need a specialised landscape feature (often called a swale) containing engineered soils to enhance filtration. A project should be seen as an intervention in water's route to drainage, rather than a complete diversion. There will be times when the garden overflows. This irony should not be overlooked — a pipe or drainage channel can be factored into the design.

A further proviso is a simple percolation test. Dig a hole about 25cm deep, fill it with water, let it drain and then top it up. Time how long it takes to drain the second time. If the water drops by 5cm per hour or more the site is suitable.



An East of Eden rain planter

The recommendation in the US is that rain gardens are sited at least 3 metres from buildings. In the UK, the Royal Horticultural Society suggests 5 metres. Water can be diverted from a downpipe either by an extension pipe or a lined gully or rill. Clear the area of vegetation. Lift plants and give away, use in other spots, or store in trays with the roots kept moist to replant in the rain garden if suitable. Use a spade to dig out an area. It should be about 20 per cent of the size of the area receiving rainfall, such as the roof of your house, with a level flat base 15cm deep. Use the excavated soil to build a berm around the edge about 10cm in height. This should be lowered at one point to create an overflow notch.

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If you lack the space, there are more compact options. Companies specialising in biophilic and eco-friendly designs, such as East of Eden Plants, can make bespoke rain garden containers. These connect to a downpipe to direct water into the planter. A soil-compost mix in the top of the container absorbs and stores the rainwater, much of which is taken up by suitable planting. Excess rainwater filters through a gravel layer and flows out via a pipe to a drain.

With flash floods increasing, rather than put the onus on the water authorities, maybe gardeners can help. Gedge urges us to become “garden-plumbers”. Perhaps, in time, rain gardens will become as commonplace as ponds.

Plants for a rain garden

Wendy Allen is a garden designer specialising in rain gardens and schemes incorporating Sustainable Drainage Systems (SuDS). These are some of her favourite rain garden plants.

For the lowest (wettest) parts:



© GAP Photos/Tim Gainey

Iris pseudacorus (pictured above)

Lythrum salicaria 'Robert'

Juncus inflexus (evergreen)

Mid-level:

Rudbeckia fulgida var. *sullivantii* 'Goldsturm' (pictured below)



© Alamy

Deschampsia cespitosa 'Schottland' (semi-evergreen)

Carex 'Ice Dance' (evergreen)

High level/rain garden edge:

Geum 'Totally Tangerine' (pictured below)



© Alamy

Geranium Rozanne

Liriope muscari 'Big Blue' (evergreen)

For the dry banks (berms), Allen suggests sowing a native perennial wild flower meadow mix.

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