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RAIN RAIN, COME AND STAY

When will we acknowledge that stormwater is not the result of storms?

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In the natural environment, a storm is a fairly common occurrence. Part of the rainfall is intercepted by trees and vegetation, while the rest is absorbed into the earth. Rivers and streams become swollen to accommodate excess rainfall. They continue to flow over a number of days, slowly filtering and removing sediments before water reaches the sea and our precious beaches.

How is it then that our beaches and harbours are becoming increasingly polluted and precious eco systems irreparably damaged? Why are we experiencing so many issues with flooding and landslides in our landscape?

So often we see results of flooding in our cities, communities and in our own backyards. I often hear people talk of a particularly bad ➜

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storm that has caused such terrible damage, as if it's the fault of the storm.

Stormwater is the result of run-off from hard surfaces like concrete driveways, roof areas and roads. We often think of rain as cleansing but as it hits roofs and other impermeable surfaces, it becomes a medium for a whole range of nasty pollutants that end up in our oceans.

The more we divide up our land and cover it with hard surfaces, the more likely it is that flooding will result. This problem is only going to get worse as populations increase and cities grow.

In New Zealand we are proud of our supposedly clean green image and our stunning beaches, but we have an underlying problem that is often ignored or just not considered when we build our houses or develop our gardens. The question we need to ask ourselves is what happens to rain when there are no trees to intercept some of the fall, when we concrete our driveways, subdivide our land and build yet another home resulting in yet more and more impermeable surfaces.

If we are going to cut down our forests and develop our land then surely we need to consider how rainfall will affect our landscape or at the very least, how can we imitate what nature does so expertly.

Presently in a rainstorm, water rushes into drains at such acceleration that all manner of pollutants, such as heavy metals, find their way into our waterways and straight into the sea. Our main stormwater drains are now straining under the pressure of coping with the sheer volume of stormwater, so much so that local councils have been working extensively on ways to alleviate the pressure on our drains by implementing different ways to treat run-off within our urban environment.

One such solution that offers a way to treat stormwater in a residential garden is the creation of a rain garden. It is a way of collecting rain off your roof or driveway and directing it into specific garden areas, where soil and plants absorb the rain, filtering, removing sediments and contaminants before the relatively clean water is then released back into the main stormwater system. By treating stormwater in this way it not only helps to purify, but also slow down the overall flow rushing into the sea.

A rain garden at its simplest is an area of garden that has sub drainage with a specialised soil media designed to treat stormwater run-off and is densely planted to maximise absorption. It is not expensive to build and costs only slightly more due to drainage pipe and soil volume. The size of a rain garden is based on the percentage of roof area or total run-off.

A rain garden is a simple and economical way to create an attractive means of treating stormwater in your own backyard and helps protect the future of our streams and beaches. Plants that are used most successfully in a rain garden are often those found on the edges of waterways such as streams or estuaries. They are plants that are used to being inundated by water for short periods and drying out for an extended length of time. Plants such as reeds, restios, tussock, cabbage trees and flaxes are all well suited to such conditions and there are many more species that are suitable for rain gardens.

Creating these simple solutions within a landscape design is not only a sustainable way to minimise the effects on our waterways and beaches, it also creates an opportunity to showcase a specialised planting scheme. Buildings need to become water collectors like our forests, and when the water cycle is fully integrated into the designs of our gardens and buildings, only then can we say that rain has been treated as nature intended. ■

Kirsten Sach Landscape Design is an award-winning landscape design company. Lead designer, Kirsten Sach, won Gold for her Rain Garden design at the 2007 Ellerslie International Flower Show, and Silver for her "Kia ora ai te wai" (Make the Water Well) at the 2008 Ellerslie Flower Show. www.kirstensachlandscapes.com.au

1 & 2. *This award-winning garden was designed for the Ellerslie International Flower Show and sponsored by Auckland Regional Council. It shows how rain can be collected off a roof into a central water tank wall that has been incorporated into the garden as a means of creating garden rooms for privacy, and to conserve water for use in the garden in prolonged dry periods. The water tank has an overflow at the front and when it is raining and the tank is full, the overflow becomes a water feature, with excess water feeding into rain garden areas. Water never ponds for longer than 24 hours within the garden and is designed to stay at a minimum depth so there are never any problems with mosquitoes.*

3,4 & 5. *This garden demonstrates storm water planter boxes and is another Auckland Regional Council-sponsored garden for the Auckland Flower Show. This example shows how rain can be collected via a disconnected downpipe and stored in a pond. Once the pond is full, it overflows into a series of raised rain gardens that purify the water before it re-enters the main storm water system at the bottom. The pond accommodates goldfish, which help keep mosquitoes at bay. The pond also forms a feature of the garden and acts as both an aesthetically pleasing element of the design and a means of helping conserve and purify water.*