

## Rainwater systems

In this fact sheet:

- Installing a rainwater tank or barrel for outdoor use
- Installing a rainwater tank for indoor use

### ***Why save water?***

In New Zealand, we're surrounded by water. It's easy to think of it as a free resource - one that will never run out. But that isn't entirely the case. Increasingly, towns and cities are facing water shortages. Some will have to invest in costly new infrastructure in coming years to ensure that supply can keep up with demand.

Already, many New Zealanders pay directly for the water they use. That trend is set to continue. The good news is that reducing your demand for water can be simple. Something as basic as fixing a leaky tap can make a difference. The costs of reducing water use can be minimal, yet the benefits are significant.

### ***Use free water***

All the water piped into our homes is treated to drinking standard, adding considerably to the cost of the water we use. However, only 3% of that expensively treated water is used for drinking; the rest is used for flushing toilets, washing clothes and watering the garden.

Rainwater is free. You can use it in the garden, laundry and toilets. If your water is metered, this will save you on water bills. Even if you are not yet metered, reducing overall water consumption will delay the need for your council to invest in further infrastructure – an investment which would be paid for through rates.



## Rainwater systems

There are two main types of rainwater systems – where the rainwater tank provides water for the garden, and where rainwater is used for both indoor and outdoor water uses.

A rainwater collection system collects rain from the roof (via gutters and pipes). This water flows through screening devices to remove dirt and debris. The water is then stored in a tank outside the house. Most rainwater systems require minimal maintenance. Generally systems for outdoor use only rely on gravity with no need for pumps.

There are also a large range of tank sizes. You don't need to have a huge tank to make a difference – even a rain barrel will reduce your outdoor water use and provide water in an emergency.

## Installing a rainwater tank or barrel for outdoor use

The average household can use untreated rainwater for about 65% of usage -- toilet flushing, washing machine, and garden taps. If retrofitting, the actual percentage you will achieve, and the cost, will depend on how practical it is to access the relevant pipes.

You can install either a rain barrel (generally about 240 litres) or a rainwater tank (500 litres +) for garden watering. Gravity-fed systems (without need for a pump) will need the barrel or tank on a stand. Because a litre of water weighs a kilo, a rainwater tank stand needs to be fairly robust, and should be concreted into the ground. It will need to be over 30cm and less than 1 metre high.

Even if you're not planning to use the tank for potable supply, it's worthwhile including at least leaf catchers and a first-flush diverter. These reduce the need for maintenance -- especially if there are trees nearby. Ideally you should include a mesh grate to prevent leaves from entering the barrel or tank (this can be fitted in the guttering) and you will need down-pipe fittings. You might need to get these from a specialist plumbers' store; though in the provinces, they are also available at your local hardware store. Prune any tree branches overhanging the roof.

It's best to locate the tank in a cool place, out of sunlight, to stop algal growth. An overflow outlet, and access for cleaning is also important.



A rain barrel system

## Installing rainwater tanks for indoor use

It is possible, and legal, to use rainwater for potable supply where the city supply is available: however, you will need to check with the local council what household uses you can use rainwater for.

An indoor-outdoor rainwater system will also need a pump to operate. You will also need a larger tank than for an outdoor only system. In areas with year round rain, a 5000 litre tank will provide a good proportion of your water use. In areas with dry summers, a much larger tank will be required.

If you are connecting for indoor use:

- you must treat the water to potable standard
- you need a building consent to connect your rainwater system to household plumbing, and possibly to install the tank
- the initial cost is higher because of filtration and sterilisation
- you will be committed to more maintenance. Check your gutters and downpipes for obstructions every few months, and clean out any leaves or mess. Make sure your roof remains clean, especially from bird droppings. It is also a good idea to inspect your tanks for any cracks and leaks, particularly before it gets dry over summer.

For more information:

- See Fact sheets on
  - Maintaining your rainwater system
  - Rainwater treatment
  - Using less water
- For tank sizing and general background, see <http://www.smarterhomes.org.nz/water/collecting-and-using-rainwater/>
- For sourcing rainwater hardware, see the Marley brochure [www.marley.co.nz/webfiles/MarleyNZ/files/RainharvestingCatalogue.pdf](http://www.marley.co.nz/webfiles/MarleyNZ/files/RainharvestingCatalogue.pdf)