Rainwater tanks

From the source to the tap, being waterwise starts with you. Using a rainwater tank can reduce demand on drinking water supplies and you could be less affected by water restrictions.

Buying a rainwater tank

Before purchasing a rainwater tank, do your research! Follow these tips before buying:

Find out if you are entitled to any local council or water service provider rebates and check for any eligibility requirements.

Check with your local council to see if there are plumbing or building approvals, or installation requirements, especially if tanks are to be installed below ground.

Make sure you are aware of the Queensland Health requirements for the safe use of your rainwater tank.

Check that your roof and guttering are suitable to collect rainwater. Roofs with lead-based paint or flashing, bitumen-based products, or with exposed treated wood are not suitable.

Check that your tank is manufactured to appropriate Australian standards, and that it will meet mandatory requirements.

Tank materials and features

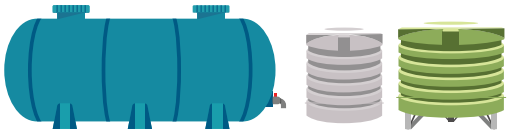
Tanks can be made from a range of materials and come in a range of colours, shapes and sizes. The choice of material is largely a matter of personal preference. For larger scale water storage, metal tanks are recommended for their strength. Bladder or sac tanks can be placed underneath Queenslander style or raised houses—a good space saving alternative.

Water level gauges are included with some tanks, and can be installed on others to monitor the amount of water in the tank.

Costs

Tank prices vary depending on type, size and materials. Beyond the price of the tank, also consider these costs: transportation, installation, alterations to guttering and downpipes, tank stand or foundation, additional plumbing, a pump (if required) and ongoing maintenance.

What size tank do you need?



Rainwater tanks come in a wide range of sizes, starting at less than 1000 L.

You'll also need to consider:

- your budget.
- the size of your roof—each square metre of roof space collects around 1 litre of water for every millimetre of rainfall.
- how much space you have (e.g. if space is limited, it may be easier to fit a slimline tank or two smaller tanks than a single large round tank).
- how the rainwater will be used and your typical water usage (as a guide, running your hose at maximum capacity can use up to 20 L/min, so a full 1000 L tank will provide around 50 min of hosing) .
- your local climate and rainfall patterns in your area (e.g. do you need to store enough water for a 10-month dry period, or do you receive rainfall on a more regular basis?).

Some tank retailers recommend around 3000 L for a small garden, and 5000 L for a larger garden.

Water pump

In most cases if you want to connect an irrigation system, or even a hose, you will need a pump. This is not needed if you have a high enough tank for gravity feed to provide adequate water pressure.

When buying a water pump:

- get advice about the best size pump for your needs—the bigger the area you are watering, the stronger the pump you will need.
- buy a pump that delivers water at a constant pressure, and turns off automatically when the tank is dry.
- consider the quality of the pump—cheaper pumps can be noisy to operate and may wear out faster than better engineered alternatives, but could be a cost-effective alternative if used infrequently.
- protect the pump with a pump cover to extend pump longevity, reduce noise and improve aesthetics.
- consider whether you can link more than one tank together and use the one pump to drain water from all of them.
- choose a pump that is energy efficient.

Mandatory requirements

Ensure that every opening of your tank includes either:

a. a mosquito-proof screen that:
   - is made of brass, copper, aluminium or stainless-steel gauze
   - has a mesh size of not more than 1 mm
   - is installed in a way that does not cause or accelerate corrosion
   - stops mosquitoes passing through the openings, or

b. a flap valve that, when closed, stops mosquitoes passing through the opening.

Under Queensland's Public Health Regulation 2018, fines can apply for tanks that are not mosquito-proof. Refer to the Queensland Health website **(www.health.qld.gov.au)** for more information about ensuring the safe use of water from your rainwater tank.

The Queensland Development Code requires a first flush diverter to be installed if rainwater is used indoors, or if required by a local government planning instrument. First flush diverters get rid of the initial debris when rain starts, and usually discharge into the stormwater system.

Site selection

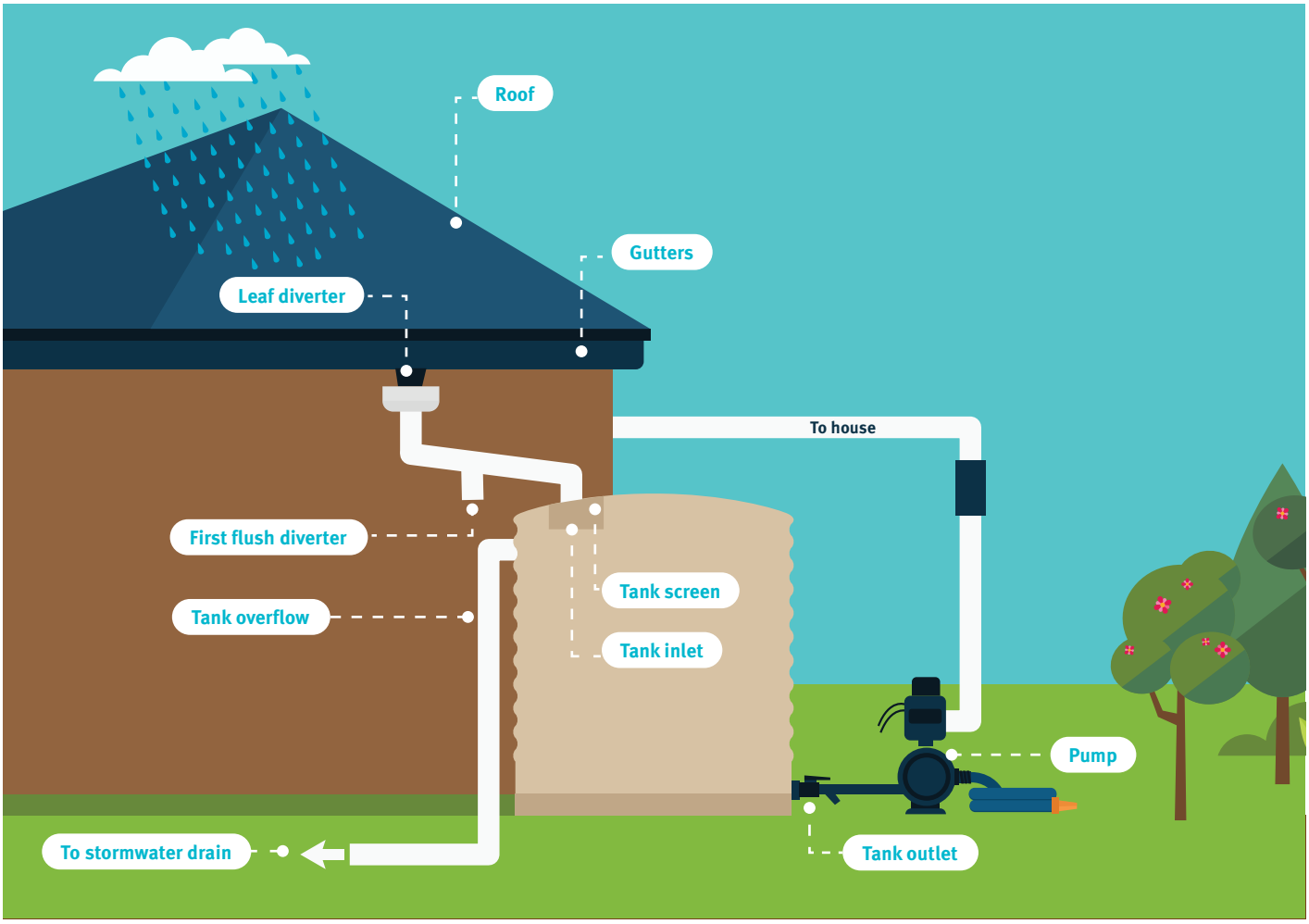
When choosing where you will put your rainwater tank:

- place it where it will collect water from the largest possible roof area—if possible, find a location where you can connect more than one downpipe to your tank.
- make sure the tank won't restrict access to the garden or block views, and is aesthetically acceptable (consider your neighbours' perspective as well!).
- consider the weight of the tank when full—it should not be placed on top of a retaining wall (1000 litres is equal to 1 tonne!).

Important information

You cannot install a rainwater tank over water, wastewater or stormwater pipes.

Your rainwater tank system*



** The design of the rainwater tank system will depend on your house, the site of the tank and the use of the rainwater.*

Installation

The tank manufacturer will have specifications for the installation, including the base, of your tank. You can install the tank yourself or have an installer do it for you.

Generally the base can be a reinforced 10 cm concrete slab, either square or round, and at least 10 cm larger than the diameter of your tank. A timber frame could also be suitable—choose termite-resistant or treated timber.

The frame is usually filled with crusher dust or concrete, and the ground compacted and levelled to prevent subsidence. This is important, because if the tank is not level, the weight of the water will make it lean to one side and become unstable.

The overflow pipe should be connected to the stormwater outlet, garden, or kerb and channel.

Using your tank water

Tank water is often used for gardening and maintenance of a home.

If you are using rainwater on your garden, it is still important to practice waterwise gardening—for more information on this see our waterwise gardening fact sheet or, search for 'waterwise gardening' on the Queensland Government website (www.qld.gov.au).

If you plan to use your rainwater for drinking you will need to keep your roof and gutters clean and monitor the water quality regularly. Queensland Health recommends (and sometimes council regulations require) that you use town water supplies for drinking, personal hygiene and food preparation if you have access to these supplies.

If your rainwater tank is plumbed for indoor use, maximise the use of your rainwater by installing water efficient appliances and fixtures, such as washing machines and toilets.

Maintenance

The maintenance activities below are recommended. Additional maintenance checks should also be undertaken following a storm.

3 Every three months

1. **First flush diverter**
   Check that it is working effectively and clean if necessary.
2. **Mosquito-proof screens and flap valves**
   Check for rips, holes and defects and, if needed, repair immediately.

6 Every six months

1. **Roof**
   Remove all debris, including leaf and other plant material, and prune overhanging branches.
2. **Gutters**
   Inspect your gutters and clean if necessary. Keeping them as clean as possible will enable them to drain freely and avoid contaminants entering the tank.
3. **Leaf filters/strainers**
   Clean and repair if necessary.
4. **Tank openings**
   Check access covers are kept closed. Ensure no holes or gaps in inlet, overflow and other openings.
5. **Internal inspection**
   Check for evidence of access by animals, birds or insects, including the presence of mosquito larvae. If present, identify and close access points.
6. **Water quality**
   Check for odour, colour, and sediment.
7. **Pump/s**
   Check the condition of the pump/s and replace the filter (depending on the pump manufacturer's specifications).

2 Every two years

1. **Tank and pipework**
   Check structural integrity of the tank, including the roof, and of all the pipework connections (ensuring that all connections remain secure).
2. **Check inside the tank for accumulated sediment.**
   If sludge is covering the bottom of the tank, you can siphon it out using an inverted funnel in the end of a hose and moving it carefully across the bottom of the tank, or completely empty the tank if there is a drain plug. Professional tank cleaners operate in many areas.

More information

For information about the design and use of rainwater tank requirements, including design requirements under the Queensland Development Code, visit **www.business.qld.gov.au** and search for **'rainwater tank requirements'** (rainwater tanks are referred to as a supplementary water systems).

Search **'rainwater tanks'** on the Queensland Health (**www.health.qld.gov.au**) and the Australian Government Department of Health (**www.health.gov.au**) websites for guidance about the maintenance and safe use of rainwater tanks.

waterwise Queensland

More information

For tips on being waterwise, visit www.qld.gov.au and search for 'waterwise'.

Queensland Government