



A rainwater tank is designed to store rainwater captured via gutters or downpipes on a building.

Rainwater tanks collect only roof runoff (unless it is a 'dual system', which can top up with mains water). The captured rainwater can be used for purposes including toilet flushing, laundry uses and outdoor irrigation, or filtered for drinking.

Rainwater tanks can be utilised on residential, commercial, institutional and industrial development sites, and provide a valuable opportunity to:

- Reduce mains (drinking) water consumption; and
- Reduce peak runoff rates and volumes, and consequent environmental impacts (including flooding, stormwater pollution and watercourse erosion).

Types of Rainwater Tanks

Rainwater tanks come in a variety of materials, shapes and sizes and can be incorporated into the building design so they do not impact on the look of the development. There are metal, concrete, plastic, fibreglass and 'bladder' type tanks.

What is Water Sensitive Urban Design?

Water Sensitive Urban Design (WSUD) is an approach to urban planning and design that integrates the management of the total water cycle into the urban development process.

WSUD incorporates all water resources, including surface water, groundwater, urban and roof runoff, drinking water and wastewater. It includes:

- Utilising water saving measures within and outside domestic, commercial, industrial and institutional premises to minimise requirements for drinking and non-drinking water supplies;
- Storage, treatment and beneficial use of runoff (at building and street level, including stormwater);
- Treatment and reuse of wastewater; and
- Using vegetation for treatment purposes, water efficient landscaping and enhancing biodiversity and amenity.

There are many different WSUD measures which together form a 'tool kit' from which individual measures can be selected to form a specific response suiting the characteristics of each development (or redevelopment).

Those measures are described in detail in the WSUD Technical Manual, which can be found online at www.planning.sa.gov.au/go/wsud

Rainwater tanks are one such measure.

Tanks can be located above ground, underground, under the house or can even be incorporated into fences or walls.

Application and Scale

Rainwater tanks are often installed to serve one building on one allotment. A large-scale development or building (such as a large shopping centre) could be served by a number of rainwater tanks (for example, located under carparking areas) to provide water for flushing toilets and landscaping.

The amount of rainwater a building can capture and store annually is of course dependent on annual rainfall and its seasonal variation, but also:

- The roof area connected to the tank; and
- The capacity of the chosen tank.

Rainwater Tank Distribution Systems

There are three main types of rainwater tank distribution systems:

- Gravity systems - these rely on gravity to supply rainwater to the building and/or garden or landscaped area by placing the tank on a stand at height;
- Dual supply systems - these top up your rainwater tank with mains water when the tank level is low, ensuring reliable water supply; and
- Pressure systems - these use a pump to deliver rainwater to the building and/or garden or landscaped areas.

How Do I Choose a Rainwater Tank and System?

The most important thing to consider when choosing a rainwater tank is to first identify what you want from the rainwater tank. The size and type of rainwater tank chosen will vary depending on the water needs and the reliability that is sought from the rainwater tank supply. The following questions should be considered when planning the installation of a rainwater tank:

- What is the water demand of the property?
- What is the intended use of the rainwater?
- What reliability is needed from the rainwater tank - how often and how much water is needed?
- Is there an alternative water supply should the tank run dry?
- What is the total area of roof draining into the tank?
- What is the average annual rainfall of the area?



Once it is known how much water can be collected and how much water is going to be used, then a tank size can be selected that will ensure the reliability of water supply that is needed.

Checklist for Rainwater Tank Collection System Design and Installation

- Check that the roof surface is suitable for collecting rainwater. Consider the condition and type of material as well as environmental factors such as airborne pollutants;
- Check the physical constraints of the property, such as available space or level ground;
- Meet with council to determine if any approvals are required for the installation of a rainwater tank in your area;
- Select a tank – consider annual rainfall, its seasonal distribution, roof catchment area and water usage when determining its size;
- Select a pump system (if required) to distribute water for use inside and outside the building;
- Select a tank top up system (if required) to automatically top up the tank with mains water when the water level falls to a designated minimum level;
- Install gutter mesh (6 millimetre wire mesh) to prevent leaves and debris from blocking gutters;
- Fit gutter outlets from the underside of the gutter to prevent obstruction of water flow;
- Fit rain heads to down pipes to stop gutters blocking. Rain heads deflect leaves and debris, and keep mosquitoes out of pipes that hold water;
- Install water diverters to prevent the first flush of most contaminated rainwater from entering the tank;
- Attach insect proof screens or flap valves to the end of all pipes to the tank and to the tank overflow outlets to keep mosquitoes and pests out and to ensure that the tank is vented properly; and
- Develop a maintenance plan for the rainwater tank system.

Maintenance Requirements

Installing and regularly maintaining the rainwater tank, gutters and other components will help maintain water quality. Regular maintenance tasks include:

- Cleaning the first flush device every three to six months;
- Removing leaves and debris from the gutters and the inlet mesh every three to six months; and
- Checking the sediment level in the tank every two years.

Legislative Requirements and Approvals

Health

The Department of Health does not prohibit the use of rainwater for drinking or other purposes. However, the department recommends proper use and maintenance of rainwater tanks and provides various guidelines, particularly on drinking water quality.

Water Supply Authorities

Water supply authorities cannot prohibit the use of rainwater on private land. However, they do require the installation of appropriate backflow prevention devices to prevent possible contamination of mains water by rainwater if rainwater is plumbed into the building using some or all of the same internal pipework as the mains water. SA Water provides guidelines for plumbing configurations of rainwater tanks on private properties (www.sawater.com.au).

Local Councils

Rainwater tanks may require development consent if they exceed certain requirements relating to size, height, siting and other matters. However, a rainwater tank does not need development approval if the tank does not have a floor area exceeding 10 square metres and does not have a height greater than 4 metres (unless you are located in the Hills Face Zone and several other specific zones).

For further details, contact your local council.

State Government

All new dwellings (and some extensions or alterations) are required to have an additional water supply to supplement the mains water. The additional water supply has to be plumbed to a toilet, to a water heater or to all cold water outlets in the laundry of a new home. The same rules apply to new extensions or alterations where the area of the extension or alteration is greater than 50 square metres and includes a toilet, water heater or laundry cold water outlet.

Installing specially plumbed, minimum-sized rainwater tanks will be by far the most common way of meeting the additional water supply requirement.

More information is available from the Department of Planning and Local Government website at www.planning.sa.gov.au

Incentives

Rebates are currently available for plumbing work to tap new or existing rainwater tanks into **existing** buildings. For further details contact SA Water (www.sawater.com.au) or your local council.

Further Information

While there is a large range of useful resources and further information available on rainwater tanks, in the first instance it is suggested that people read Chapter 5 of the *Water Sensitive Urban Design in Greater Adelaide: Technical Manual*. Further information is available at www.planning.sa.gov.au/go/wsud

Other Summary Sheets

Other Water Sensitive Urban Design Information Sheets for the Greater Adelaide Region are available in this series. To download the summary sheets, visit www.planning.sa.gov.au/go/wsud

No. 1-3	Introduction to Water Sensitive Urban Design	No. 10	Bioretention Systems
No. 4	Demand Reduction	No. 11	Swales and Buffer Strips
No. 5	Rainwater Tanks	No. 12	Sedimentation Basins
No. 6	Rain Gardens, Green Roofs and Infiltration Systems	No. 13	Constructed Wetlands
No. 7	Pervious Pavements	No. 14	Wastewater Management
No. 8	Urban Water Harvesting and Reuse	No. 15	Modelling Process and Tools
No. 9	Gross Pollutant Traps	No. 16	Siphonic Roofwater Systems