

RainMaster
TECHNOLOGIES PTY LTD



WATER RECYCLING SYSTEM



Rain Master Water Recycling System

Welcome

Company Profile:

The Founders of Rainmaster P/L have been involved in the design, construction and installation of on-site water recycling systems since 1968.

The company has a policy for product improvement and is continually researching the latest technologies. Rainmaster has one of the most extensive research and development programs in the industry.

Rainmaster is able to ensure that its clients have access to the most effective on-site water technologies whether the application is a single domestic household through to caravan parks, motels, community systems or specialised industrial operations.

Rainmaster has appointed an extensive network of fully trained customer support centres with senior staff located in major market centres throughout NSW. These customer support centres work closely with local shire councils and can provide up to date advice on local government regulations and can assist with the preparation of the necessary applications to the council to ensure that the development approval is obtained within project timetable requirements.

Rainmaster manufactures each and every system at our factory on the NSW Central Coast. All systems are assembled and tested to strict quality control guidelines prior to delivery to our client for final installation.

The Water Cycle

The water cycle is the term used to describe the naturally occurring processes of rainfall, evaporation, absorption, storage and use of water in the environment. The cycle starts with cloud formation and when rain falls, it is collected on the ground and runs into existing bodies of water such as streams, lakes and rivers. Some of this water finds its way back into the environment through evaporation back into the atmosphere and some finds its way into the soil through percolation for use by plants and trees.

The system is dynamic and constantly changing. Weather conditions such as humidity and temperature affect the amount of water drawn back into the air by evaporation or transpiration. The amount of rainfall (or lack of it) affects percolation of water into the soil in the proceeding days and months.

Human use of water affects the water cycle in a variety of ways. Specifically water is drawn from its normal course of function within the water cycle and applied to domestic, agricultural and industrial uses. This diverted water, once used must be returned to the water cycle somewhere further down stream. The quality of water within a catchment has a significant impact on environmental and public health.

Rainwater Tanks

Rainwater tanks are considered an option in urban areas where providing water for our increasing population is becoming an important issue. Rainwater tanks can provide water for household use, both inside and outside, making a significant contribution to total water supplies. Many people regard rainwater as a healthy alternative to chlorinated mains water.

Tanks offer several advantages:

- they reduce demand on water storage
- rainwater is free of chlorine
- rainwater is soft water
- they provide an emergency supply should there be a problem with the mains water supply
- they reduce stormwater runoff.



Construction Of Tanks

Tanks come in a variety of materials:

Concrete tanks are strong, long lasting and can be installed underground. When they are installed underground, the water stays cool and dark and they are not prone to algae or bacteria growth. They are fire proof and aesthetically pleasing.

Fibreglass tanks are more expensive than polyethylene tanks and galvanised tanks but they last longer. They must be opaque otherwise algae will grow. They must be lined with a coating of food grade plastic.

Polyethylene (plastic tanks) and tank liners must be constructed of food grade plastics that comply with Australian Standards. They should also be opaque to prevent algae growth. These tanks are relatively cheap and easy to install. They come in a wide range of shapes, colours and sizes but may not last as long as tanks made of other materials.

Galvanised Steel tanks today are coated with rust resistant coatings such as zincalume or Aquaplate TM (a food grade plastic that is bonded to the inside of the tank). Care must be taken that these surfaces are not damaged when the tank is being cleaned.

Tank Size

Choice of tank size is determined by a number of factors:

- The volume of water to store
- The rainfall
- The size of the roof
- The security of supply required - could there be a prolonged drought?

Rainwater Quality

Water quality is generally good if the tank is well-installed and maintained - gutters, roofs and downpipes also need maintenance. If the tank water is not clear, has a taste or an odour, steps should be taken to find the cause and fix the problem. If it is to be used for drinking, more care will be needed to ensure its high quality than if it is to be used for laundry or garden purposes.



Rainwater Tank Maintenance

It's important to maintain your rainwater tank and components so that they work effectively and reduce the risk of contamination. Preventing problems before they arise will save you time, money and water.

Gutters and roof catchment areas should be regularly inspected and kept clean and clear of leaves and debris. Any overhanging branches should be removed. It's a good idea to use screens or guards, and these should also be regularly cleaned. Keeping your rainwater screened and flowing cleanly and quickly from your catchment area into your tank reduces the build up of sludge as well as the risk of mosquitoes breeding in your tank.

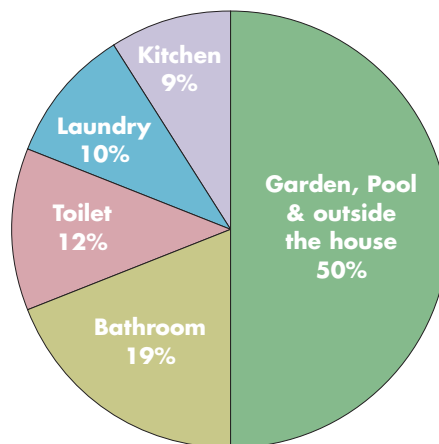
Check your tank for sludge at least every two to three years. If sludge is covering the bottom of your tank, you'll need to remove it by siphoning it out or completely emptying your tank (contact a professional tank cleaner if you're unsure). Excessive sludge build up is a sign of inadequate roof and gutter maintenance. Remember, make sure you prevent mosquito access to your tank. If you find mosquitoes in your tank, find the entry point and close it.

Water At Work

How much water do we use?

During the 2000-2001 financial year, 93 of the largest water utilities across Australia (which between them service 83% of the population) produced on average, 460 litres of drinking water per person per day. They supplied 259 litres of water per person per day to households. Of this only 2 litres per person were actually drunk. The other 201 litres per person were used by industry, in commercial premises, for institutional uses, or were unaccounted for (i.e. stolen or leaked).

A graph showing how much water we use in the different parts of our home.



Domestic Use

Domestic water consumption varies widely ranging from 350 litres per person per day to 1,500 litres per person per day. The average is about 635 litres which is enough to fill about 70 buckets. (A standard bucket will hold 9 litres - about 2 gallons).

Installation

Always check council regulations before purchasing a tank. If your house is connected to mains water there will be restrictions to prevent cross flow between the two systems.. Devices such as non-return valves stop rainwater from siphoning into the reticulated supply.

The use of first flush systems helps keep the water in the tank in good condition. These allow the first 20 litres or so from the roof to be diverted away from the tank taking accumulated debris with it. There are several innovative systems available.

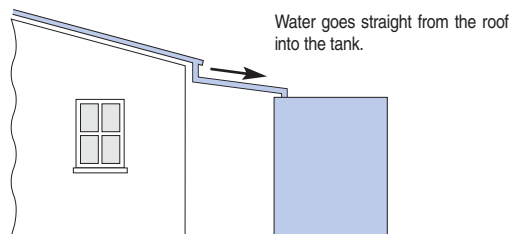
Getting the most of your rainwater tank (as a cost and environment investment)

The key things to remember if you are using your tank for water conservation and stormwater management is that the larger the tank, the more rainwater can be captured for use during dry period. A minimum tank size of 5,000 litres is desirable.

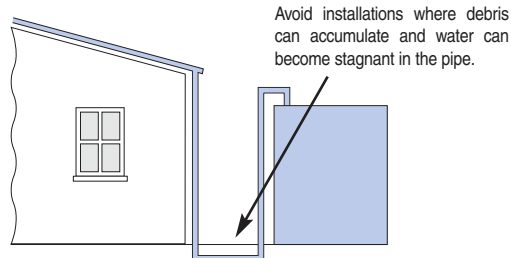
Rainwater from your tank is fine for use with garden irrigation systems. However, if you plan to connect your rainwater tank to an irrigation system, you should ensure that you have a filter on your tank.

Connecting your tank to your toilet cistern or your washing machine is a good way to maximise the use of your captured rainwater because unlike garden watering, you will even be using your tank water when it is raining. To supply these appliances from your tank you will need to maintain a minimum operating water level in the tank when there is insufficient rainfall. This will require a "top-up" connection from the Water supply (just like a toilet cistern) and therefore some plumbing alterations to your home.

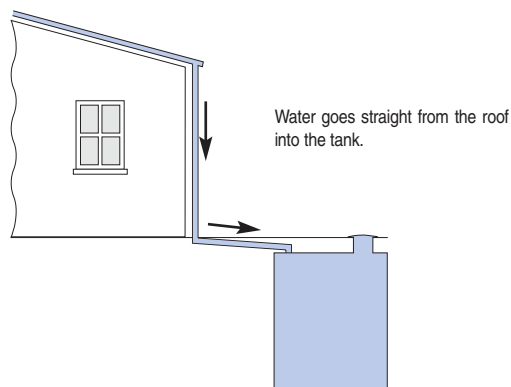
Correct Downpipe Installation



Incorrect Installation



Correct Tank Installation Below Ground



Bathroom Facts

- A tap left running can waste up to 17 litres of water per minute.
- A leaking toilet can waste up to 16,000 litres of water a year.
- Water efficient taps with an aerator or flow restrictor use 50% less water than standard taps.
- The bathroom uses around 49% of all water used inside the home.
- A dripping tap can waste up to 2,000 litres a month. That's 24,000 litres a year - that's more than an average household uses in a month
- An eight minute shower using a regular shower head uses around 120 litres of water. A water efficient shower head uses less than 72 litres.

Quick Tips

Every day, there are many simple little things we can do around the house to save water money and help the environment

- Checking for leaks in taps, pipes and dishwasher hoses is an easy way to reduce on water wastage. Remember, one leaking tap can waste up to 2,000 litres of water a month.
- Put the plug in the sink when washing your hands instead of holding them under running water.
- Thaw frozen foods before you need them or use the microwave instead of placing them under running water.
- Prevent taps from leaking by turning them off tightly and replace washers as soon as they begin to leak
- Washing fruit and vegies in a half-filled sink instead of under running water is a great way to cut back on water wastage.
- Rinsing your dishes in a plugged sink rather than under a running tap saves water and is just as easy and effective.
- Installing one of the latest AAA Rated Shower heads can give you a great shower and save you around 10 litres of water a minute. They also save you energy costs as you'll use less hot water.
- To rinse your razor, run a little hot water into a plugged sink. Rinsing your razor under a running tap wastes lots of water.
- There's no need to leave the tap running while you brush your teeth. Simply wet your toothbrush before you begin and use a glass of water to rinse your mouth.



Trouble Shooting

| Fault Observed | Potential Cause | Remedial Action |
|---|--|--|
| <ul style="list-style-type: none">• No water to flush toilets | <ul style="list-style-type: none">• Pump not working | <ul style="list-style-type: none">• Check power to water tank |
| <ul style="list-style-type: none">• No water to washing machine | <ul style="list-style-type: none">• No power to water tank | <ul style="list-style-type: none">• Call Rainmaster |
| <ul style="list-style-type: none">• Water around tank | <ul style="list-style-type: none">• Stormwater overflow blocked• Poor drainage around tank• Soil saturated from rainfall | <ul style="list-style-type: none">• Check overflow pipes• Increase drainage pipes |

This should be used as a guide only.
Call Rainmaster on the phone number below if you have any queries.

Customer Service 1 800 733 020



Rainmaster below ground concrete system

Rainmaster Control Unit Plumbing Connection



To House Plumbing

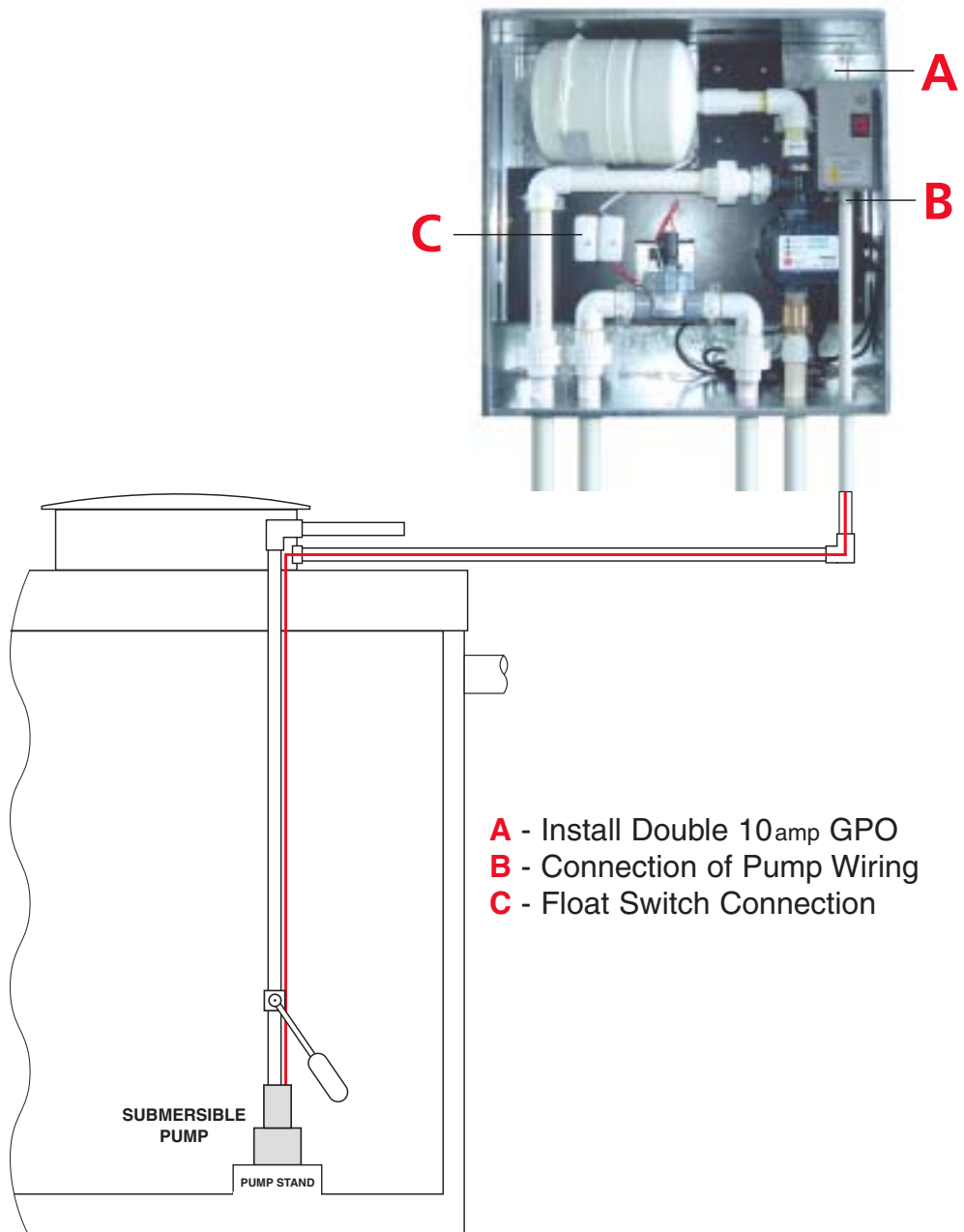
Mains Water In

Water Tank-TOP UP

Water Tank-In

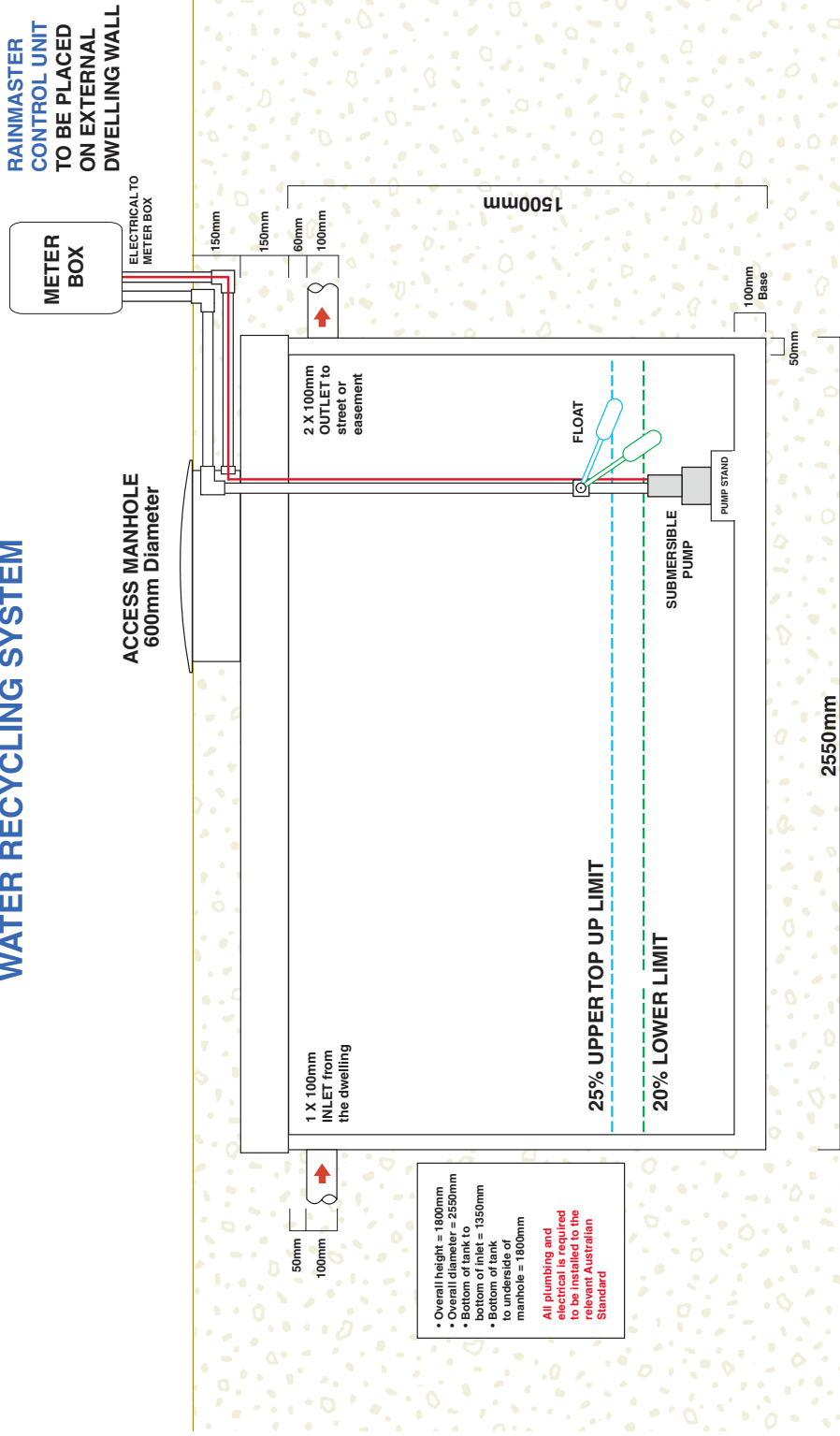
Electrical from Tank

RAINMASTER ELECTRICAL WIRING DIAGRAM



All electrical works to comply with the relevant Australian Standards

RAINMASTER 5,000 LITRE REINFORCED CONCRETE WATER RECYCLING SYSTEM



**Rainmaster is proud to be associated
with the following quality home builders**

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Your Key to Quality

BELLEVILLE
-HOMES-
AFFORDABLE
EXCELLENCE

DOMAINE
HOMES

CLARENDON
HOMES


Long Homes
New home. New neighbourhood. New life.


Coral Homes
"Built On Trust"

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