From To Christchurch City Council Draft Annual Plan 06/07

Nth Cant. Royal Forest & Bird Protection Society
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1/7

Thank you for the opportunity to speak

Refering to
Chch City Council Draft Annual Plan. 2007/2008 P37
Our Community Plan Vol. 1 P167

WATER

New Point: Conserving & Sustainably Using Domestic Untreated Aquafers.

- In order to reduce the Christchurch Urban Domestic Household's reliance on the public supply for consumption of our precious pure untreated aquafer water we suggest Christchurch City encourages as many urban properties to install RAINWATER TANKS as is practical.

- Nth Cant. Forest & Bird requests Chch City Council does everything in its power to encourage and facilitate urban households' catching and using, roof water, in order to Conserve Christchurch's precious untreated aquafer drinking water.

Background and Further Information.

- Sydney Water recommends a minimum tank size of 5000 litres in an urban environment for households wanting to use the water for toilet flushing, the washing machine and the garden and lawn.
- NOTE WE ARE NOT ADUOCATING ROOF WATER FOR DRINKING WATER
- If Rainwater storage systems that consist of SLIM connectable polyethylen tanks that fit into NARROW spaces such as under eves are NOT available at present in NZ please could CHCH CC explore how to make them available in Christchurch. (Buntings Warehouse in Australia have such tanks)
- Could Christchurch CC provide incentives including financial incentives to properties that install water tanks over a certain size, in order to relieve pressure on our aquafer supplies. eg REBATES, rates relief, discounts on the capital cost of water tanks.

Chch City Council Draft Annual Plan.

Measures + Targets (P34) 2007/08

- We consider the list of measures and targets for water supply listed are ones we can support.

- Except
  We consider 321 litres per person per day is too high & is not sustainable (eg Bailey's Tanks suggest 250 litres. per person per day is more than adequate.)
  We suggest that the water demand from the public supply could be reduced by the installation of water tanks in as many urban household environments as practical. We also suggest this is a mandatory requirement of all new subdivisions.

* We would like to speak to our submission and request early notice as is possible. (15 minutes would be adequate.)

* Please attach to our submission Appendix 1 The 5 pages from CHOICE (Australia's CONSUMER magazine. The article dated Nov 2004 was reviewed in OCT 2006) — Appendix 1

Appendix 1

11/2004

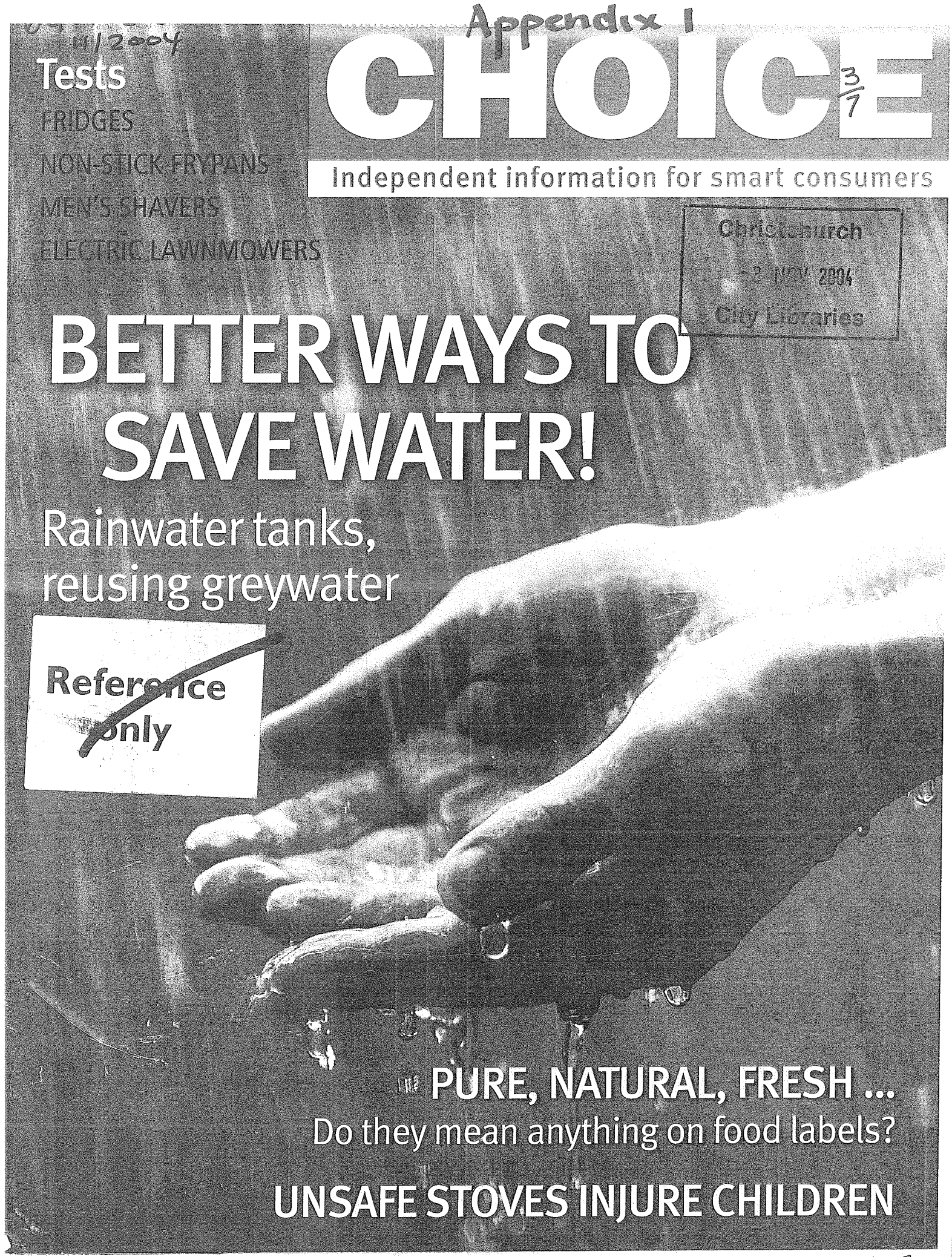
Tests
FRIDGES
NON-STICK FRYPANS
MEN'S SHAVERS
ELECTRIC LAWNMOWERS

CHOICE 3/7

Independent information for smart consumers

BETTER WAYS TO SAVE WATER!

Rainwater tanks, reusing greywater



PURE, NATURAL, FRESH ...
Do they mean anything on food labels?

UNSAFE STOVES INJURE CHILDREN

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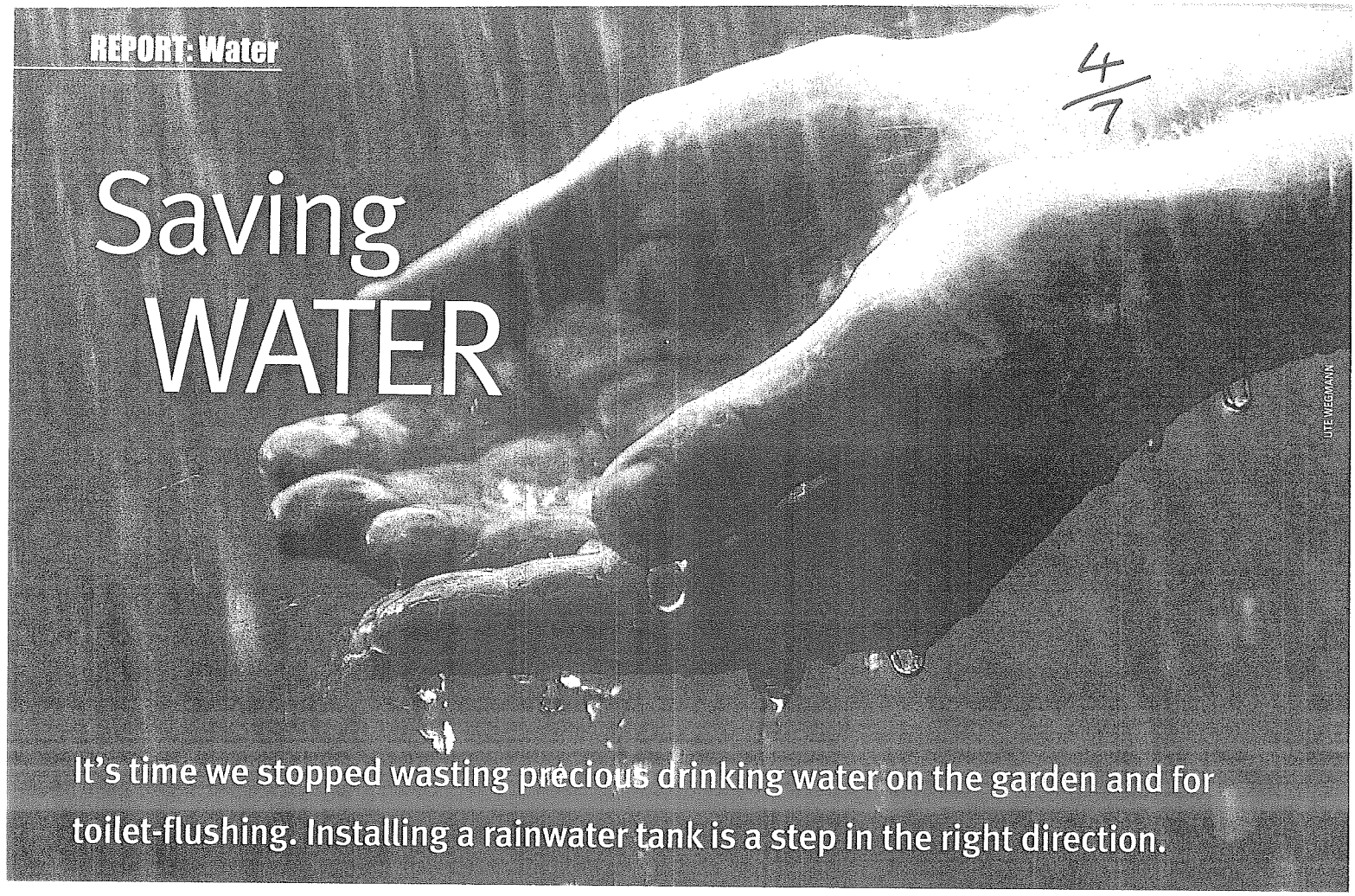
Saving WATER



It's time we stopped wasting precious drinking water on the garden and for toilet-flushing. Installing a rainwater tank is a step in the right direction.

IN A NUTSHELL

- Rainwater tanks are *no longer just huge, round and ugly; they come in all shapes and sizes to suit the urban and suburban home.*
- Watering the garden *and washing the car with rainwater make sense and cut your consumption of mains water. But bigger savings can be made if you connect the tank to your toilet, washing machine or hot water system.*

Australia is the driest inhabited continent and predictions are that the future is likely to get hotter and drier. So it's all the more frightening that, per person, we're the biggest water consumers in the world.

But drinking water is scarce. Of all the water in the world, only 1% is fresh water available for use. So it's hard to justify that we waste so much of this precious resource on things that don't really require good drinking water. Garden irrigation and toilet flushing, for example, apparently guzzle up around half the water we consume.

Using rainwater for these things, or recycled greywater from our baths and laundries, would make much more sense.

HARVESTING THE RAIN

In the past, rainwater tanks were a common feature of the Australian landscape, but they've almost disappeared from our cities now. The majority of Australian households get their water from a reticulated supply (mains or town water). In the 1990s, 16% of households used a rainwater tank and for 13% it was their main source of drinking water.

In recent years, however, the long-lasting drought in many parts of the country and widespread water restrictions have drawn attention to water conservation issues and put rainwater tanks right back onto urban agendas. Many local councils, water suppliers and state governments have been encouraging residents to install a rainwater tank, often with the offer of a rebate.

THE BENEFITS OF A RAINWATER TANK

The potential benefits of installing a rainwater tank are plentiful, and you don't need to live in a wet or tropical area to reap them. South Australia, the country's driest state, has the highest rate of rainwater tank usage. More than half the households there have one, and for more than a third it's their main source of drinking water.

With a rainwater tank, you'll:

- Collect most of the rain (around 80%) that falls onto the areas of your roof you have connected to gutters and downpipes into your tank. For example, if 10 mm of rain falls on to 100 m^2 of roof you'll 'harvest' about 800 L of rainwater. That's about as much as an average Sydney household of three would use in a day if they made no efforts to save water. If they did, they'd get their consumption down to around 500–600 L a day.
- Reduce your consumption of mains water and, in the long term, cut your water bill. Your water supplier may be able to give you an indication of the savings you can expect.
- Lower your impact on the environment by

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reducing your demand on mains water as well as the amount of stormwater runoff into rivers and oceans.

- 'Harvest' water that tastes better and is generally less salty, which is better for appliances and plants.

BEFORE YOU START

If you're interested in installing a rainwater tank, contact your local council, water supplier and health department (if you want to drink the water) first to find out which rules and regulations apply in your local area that could affect your decision.

You may need to submit a development or building application; or there may be restrictions on the tank's location, colour, height and labelling; or noise regulations for a pump may apply. Your water supplier or a licensed plumber should be able to advise you on plumbing regulations, and your health department on issues about drinking rainwater and preventing mosquitoes breeding.

These initial inquiries should also establish whether you're entitled to any cash rebates or bill reductions. Rebates can range from $50 to $650 for the installation of a rainwater tank and depend on the size of the tank and whether it's connected to a toilet and/or washing machine.

TANK-TO-TOILET OR JUST FOR THE GARDEN?

Using the rainwater you collect for outdoor purposes only is the easiest scenario. Apart from the obligatory checks with your council and water supplier, you probably just need the tank supplier to install it and don't need a licensed plumber if there's no connection to the mains water supply. Your water savings won't be huge, but you will save the drinking water you used to pay for to water the garden, wash the car or top up the pool.

Using the rainwater also for toilet-flushing, the washing machine or any other indoor use will increase your water savings substantially. But to do this, you need a licensed plumber to connect the tank to your mains water supply (so you can still wash a load if the tank is empty, for example) and the approval of the relevant authorities.

If you're allowed to connect your rainwater tank to the mains water supply, you're likely to need a backflow prevention device so your rainwater won't contaminate the mains supply if the water pressure changes suddenly and the water tries to flow backwards. Your water supplier may provide this free.

GOOD ENOUGH TO DRINK?

Many water suppliers and health authorities in Australia recommend you *don't* drink the water you collect in a rainwater tank if you have access to mains water. But this is probably just to be on the safe side, because no authority can guarantee the quality of the rainwater you collect.

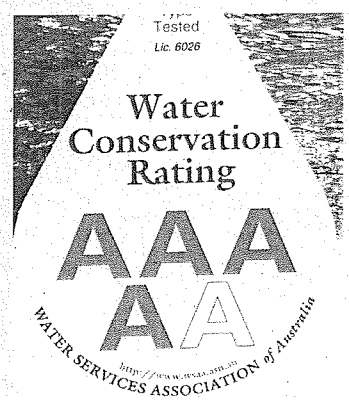
However, reports of illness associated with rainwater tanks are relatively infrequent, and public health studies in SA (the state with the highest rainwater usage rate) have also failed to identify a link. So it's up to you.

Rainwater is generally regarded as fit to drink if it smells, tastes and looks fine. In areas with heavy industry, smelters or heavy traffic, atmospheric pollutants could pose a problem, as could potential pollutants on your roof, such as chemicals from paint, bird droppings, dust and leaves. For more potential hazards on your roof, see page 12.

Small adjustments, big savings

If you're unable to invest in a rainwater tank or greywater system, you can still save water (and energy costs, if you save on hot water) by changing your habits or installing small water-saving devices around the house and garden.

- Cut down your time in the shower.
- Install a water-efficient showerhead, and a flow regulator (restrictor) or aerator to taps to reduce the amount of water that comes out — your council or water supplier may offer rebates.
- Install a dual-flush toilet (or put a brick in the cistern) to reduce the amount of water used for flushing.
- Look for a water-rating label when buying appliances such as a showerhead, washing machine (a front loader uses less water), dishwasher and toilet. Together these four account for over 80% of indoor residential water use. The more As on the label, the more water-efficient the appliance is, up to a maximum of five (see below).
- Only run full loads in the dishwasher and washing machine (unless it has a half-load program).
- Fix all leaking taps.
- Plant so-called 'water-wise' or native plants that need less water, and use mulch.
- If you're allowed to use an irrigation system in your garden, use a tap timer.
- If you're installing a new irrigation system, choose a drip system with a rain or soil moisture sensor.
- For hand-watering, use a trigger nozzle or spray wand.



TAMARA GRAHAM

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PRACTISING WHAT I PREACH

About a year ago, when they renovated their home, Peter Dixon and Megan Kessler put in a rainwater tank and had it connected to the plumbing. They thought it their duty to do so, as both work in environmental management.

"We'd been arguing professionally to improve our river systems for years," said Peter, "and we felt it was worth the extra cost."

Peter and Megan live in the Sydney suburb of Granville. Although it's been very dry there in recent months, their tank hasn't run dry yet. Lack of space forced them to limit the tank capacity to 3000 L, but their large roof area helps them collect enough water every month for their suburban garden, washing machine and one of the toilets.


TAMARA GRAHAM

Megan and Peter see their Colorbond tank as a design feature that complements their 1920s weatherboard house.

"While it's drought I keep the vegies going rather than growing," said Peter. Although they're using rainwater, they're still bound by Sydney's water restrictions because the tank has a top-up connection to the mains water supply.

When choosing a tank and a solar-powered pump, Peter and Megan had to do much of the research themselves, online. "It's a pity there's no good website that provides a one-stop shop for all the information you need about tanks, pumps, plumbing and so on," Peter said.

He eventually found useful information on Sydney Water's website, and a calculator on the Upper Parramatta River Catchment Trust's website that helped him work out the tank capacity they needed (see *For more information*, page 13, for web addresses).

Since their renovations, when they also installed a water-efficient front-loading washing machine, Peter and Megan have been able to more than halve their water consumption from the mains supply.

"I feel bloody good about it," said Peter, who in his working life has been educating people on how to lower their impact on the environment. "Living in an urban environment means I've had to adjust common solutions to limited space, and it helps me live what I preach.

"And it makes me think a lot about it. We've become more water-wise and reduced consumption in all aspects of our water use."

Authorities generally recommend you clean and maintain your tank and collection system (roof, gutters and pipes) regularly. However, a 2001 South Australian study found that rural children drinking rainwater were less likely to suffer from gastroenteritis than their mains water-drinking counterparts, even though the rainwater tanks had been poorly maintained.

Even so, it *is* important to prune any overhanging branches and, every two or three years, check your tank for sludge and, if necessary, empty it and siphon it out or have it cleaned professionally.

A few devices will help you keep your rainwater clean. A first-flush device diverts the first few litres of rainfall away from the tank and is considered a must if you want to drink the water. Metal strainers and gauze mesh on all inlet and overflow openings will keep leaves, vermin and insects out of the tank. And gutter guards or covered gutters will prevent much solid debris from entering the collection system in the first place.

So, if you want to drink the rainwater you collect, check with your health department, which should also be able to advise on treatment processes if the water quality is in doubt. And talk to your dentist about other sources of fluoride, which you won't get in rainwater.

TANK FACTS

Rainwater tanks come in a multitude of sizes, shapes, materials and colours. You can install one next to the house, on top or under it, on a stand, on the ground or below it. Installing a tank below ground is generally more expensive because of excavation costs, but the tank's out of sight.

- **Cover:** All tanks should have a tight-fitting cover so animals and children can't get access, water won't be lost through evaporation and light doesn't enter, which could promote the growth of algae.
- **Size:** The tank capacity you need depends on what you want to use it for, the size of your household and garden, your roof area and the annual rainfall in your region. Your water authority may be able to help you work out the size you need.

Sydney Water recommends a minimum tank size of 5000 L in an urban environment, if you want to use the water for toilet-flushing, the washing machine and in the garden (but not for drinking water), or a 2000 L one if you only have a small garden or connect to the toilet only. Brisbane City Council estimates that a 3000 L tank connected to the hot water system, toilet and for outdoor use can result in 30–40% savings of mains water.

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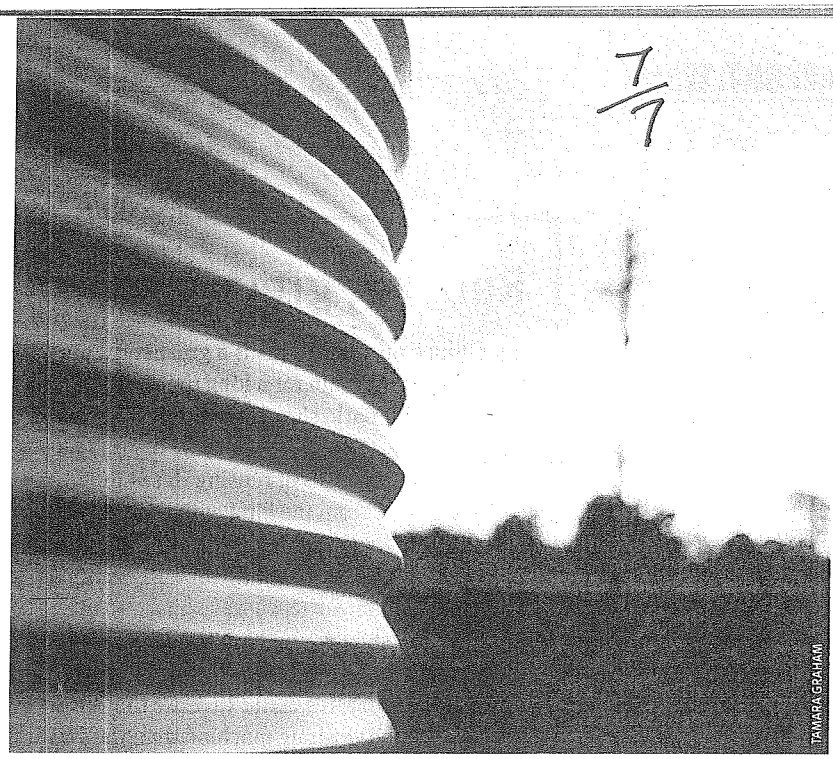


Type: You can choose from round, rectangular (modular) and slimline tanks. Round ones come either upright or squat, which may fit well under decking or the like. Slimline tanks are generally a bit smaller, but are popular with people who have limited space for a tank. There are also newer alternatives to the traditional shape — a few of these are noted below right.

Material: Metal tanks are made from corrugated or flat rolled metal and can be galvanised or coated. They often come with a plastic inner lining (Aquaplate) that'll increase the life of the tank and protect the water quality.

Polyethylene (poly) tanks are durable and because rust isn't an issue, tend to be recommended for people living near the ocean. Concrete tanks can be bought ready-made or custom-made on-site. Fibreglass tanks tend to be more expensive: they're rust and chemical-resistant and designed to withstand extreme temperatures. They're more suitable for above-ground installation, while all other types can also be installed below ground.

Location: To reduce water loss through evaporation from inspection holes, don't put it where it'll be in the path of the hot midday sun.

COSTS AND EXTRAS

Tanks can cost as little as a few hundred dollars for a basic, small, freestanding model without pump and extras, to many thousands of dollars for a large, custom-built model with all the bells and whistles. The costs vary depending on the size, material, finish and strength of the tank.

When we checked out prices from a few manufacturers for polyethylene and galvanised metal tanks, they ranged from around $550 to $750 for a 2000 L model, from $800 to $900 for a 4000–5000 L one and from $1250 to $1695 for a 9000 L tank. It's worth shopping around.

Further to these costs are any charges for delivery and installation; extra materials (such as pipes, fittings and taps); optional extras (such as a first-flush or backflow-prevention device); a pump (unless you can use gravity for water pressure); and a stand (unless you want to put it on the ground or below it, in which case you may need to factor in costs for special preparation or excavation).

Last of all there are labour costs for a licensed plumber, if you want to connect the tank to your mains water supply, and costs for any additional work that needs to be done to your roof and/or guttering.

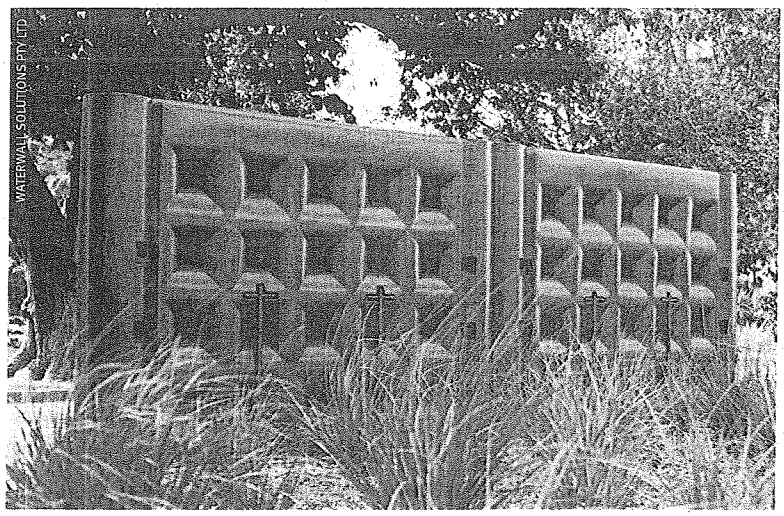
And after all these expenses, you're ready to reap the benefits ... as long as it rains.

NO SPACE FOR A TANK?

We've come across a couple of clever alternatives (which we stress we haven't tested or even touched) if you have no space at all for a standard tank or don't like the look of one, and it'd be worth checking your local area for others if you're in that position.

The **RAIN REVIVA** underfloor storm- or greywater management system consists of sacs (much like sealed, flexible bladders) that you can fit into small or irregular spaces, such as under the house. It's largely DIY (unless you want to connect it to your water supply) and costs $2090 with a 2200 or 3800 L sac, pump and fittings; larger and irregularly shaped sacs can be custom-built. For more information, go to www.rainreviva.com.au or phone (03) 9735 2822 or 1300 552 695.

The **WATERWALL** modular rainwater storage system consists of slim, connectable polyethylene tanks that'll fit into narrow spaces such as under eaves, or can be installed freestanding as fence or garden dividers (see below). The system is available from Bunnings Warehouse in Melbourne, Sydney and Adelaide metropolitan areas. Each module holds 1200 L and costs $999 including a wall fixing bracket (a freestanding frame costs $195 and a joiner kit $29.95). For more information, go to www.waterwall.com.au or phone (03) 9689 3055.



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