

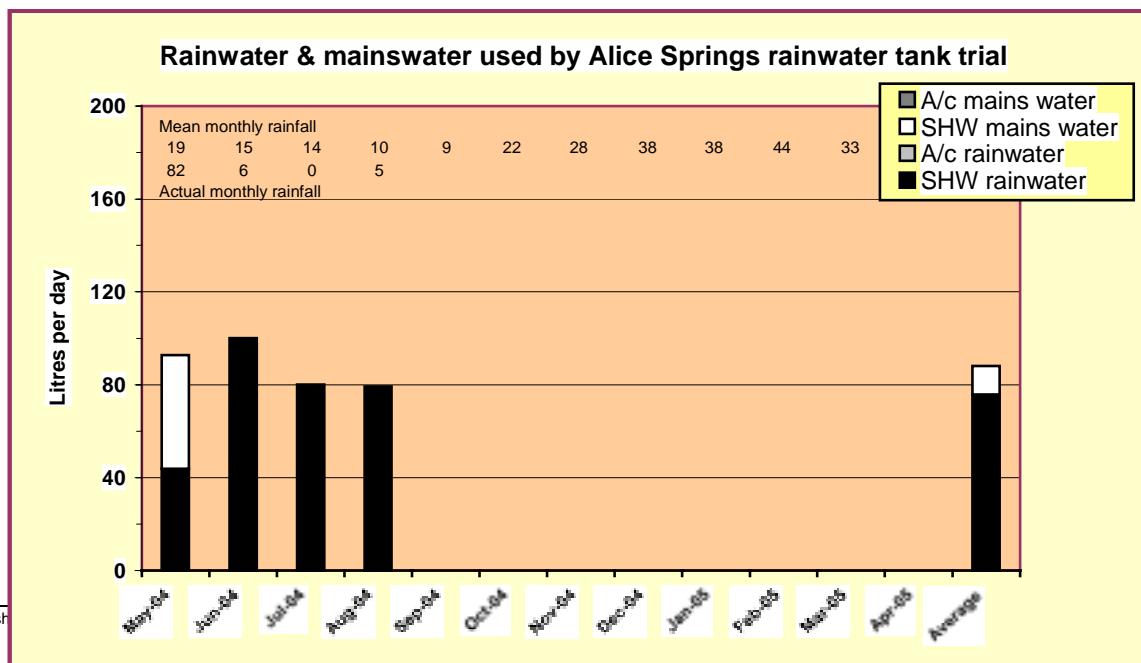
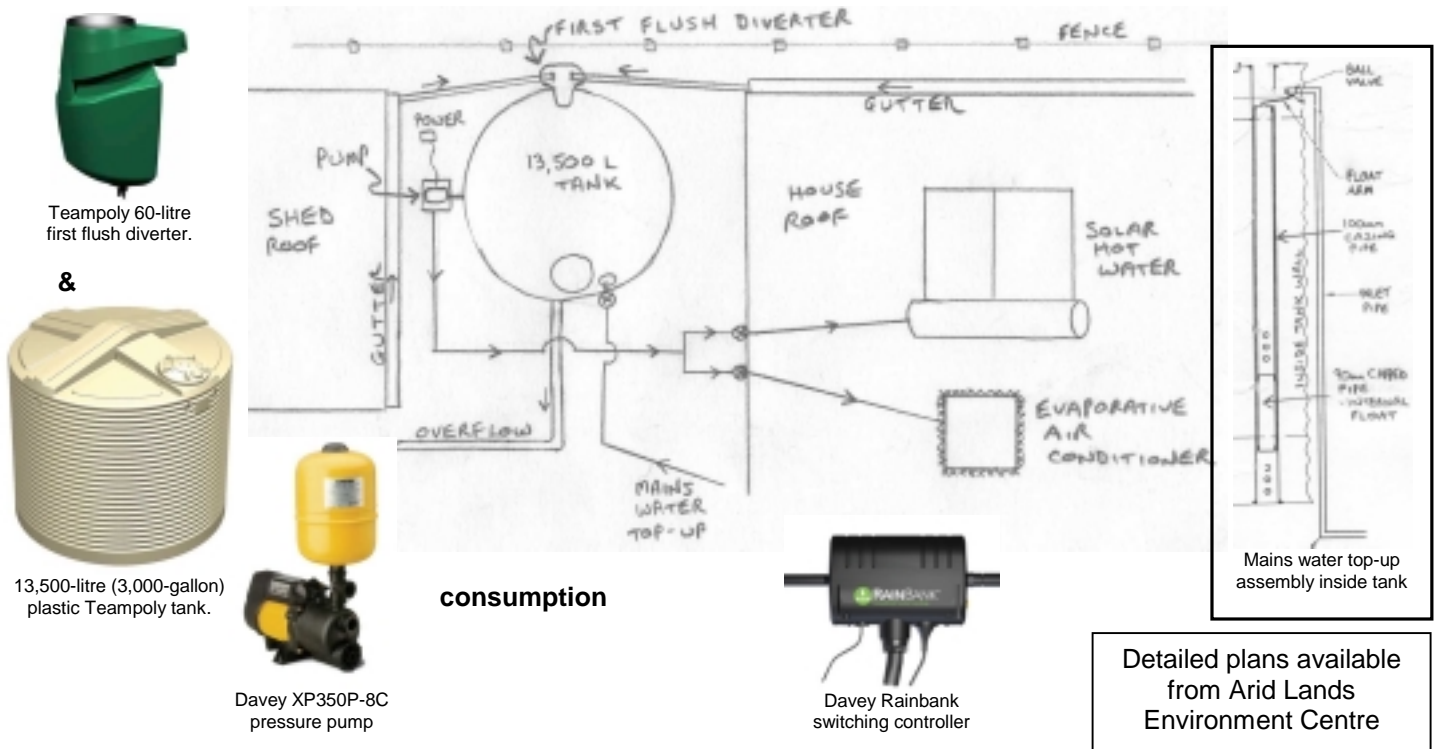
Fact Sheet

Urban Rainwater Tank Trial - 1 Harper Court, Alice Springs

Update #1. 12 September 2004

A 13,500-litre rainwater tank has been connected to a solar hot water system and an evaporative air conditioner at 1 Harper Crt, Alice Springs. The system was connected in May 2004 and will be monitored for 12-months as an Arid Lands Environment Centre project. This is the first official monitoring of such a system in the town examining a) the volume of water saved; b) ease & cost of installation & maintenance; and c) reduction in hard water effects on the solar hot water system and evap a/c

System layout



Location	3-bedroom house. 1 Harper Court, Alice Springs.
Occupants	2 x adults, 1 x teenager.
Indoor appliances	Water-efficient shower-head, tap aerators in kitchen & bathroom, front-loading washing machine (cold only), bath, laundry tub.
Air conditioner	Evaporative 'Braemer' domestic. Assumed 30 L/hr water use (24 L evaporated, 6 L bleed)
Solar hot water system	Solahart 302J two-panel, 300-litre storage tank.
Rainfall	286 mm/yr mean.
Roof area for rainwater capture	145 m ²
Pre-treatment of rainwater	'Gutter-guard' mesh on gutters. Mosquito screen & 60-litre first flush diverter on tank.
Tank	13,500-litre plastic TeamPoly tank (3,000-gallon). 2.92m diameter, 2.24 wall height, 2.46m total height. Would use 9,000-litre tank next time.
Pump delivering rainwater	Davey XP350P-8C pressure pump
Fixtures supplied	Solar hot water system & evaporative air conditioner
Mains water top-up	When rain water runs low, mains water is trickled into the top of the tank from an inlet valve controlled by a float assembly in the bottom of the tank. This ensures an air gap and no backflow to mains system. Based on system used in Beaudesert Shire Council, QLD.
Alternative mains configuration	Davey 'Rainbank' controller that senses when raintank is empty and switches to mains water supply that by-passes the tank. When it rains, automatically switches back to rainwater. Has 'Watermark' approval in NSW and Victoria. An NT decision is pending (from DIPE). We are seeking approval to install a Rainbank in late 2004.
Available rainwater (average year)	25,800 litres/year (based on rainwater tank modeling spreadsheet at www.alec.org.au)
Hot water use	Approx 33,000 litres per year (ASp average 59,000 litres per year (8%))
Evaporative a/c use	Approx 15,000 litres per year (ASp average 49,000 litres per year (7%))
Hot water – expected % supplied by rain	60%
A/c – expected % supplied by rain	40%
Payback period	207 years. (\$17.50/yr savings in water bills. Does not include reduced maintenance costs or increased lifespan of solar hot water system).

Cost of system

Tank	\$1,720
Pump (package price with tank)	\$240
First flush diverter	\$155
Rainbank controller	\$400
Pipework	\$200
Installation	\$900
TOTAL	\$3,615



Updates

Go to www.alec.org.au or ph 8952 6066 to follow the trial's progress including water volumes consumed.

Participants

The trial is a project of the Arid Lands Environment Centre.
 Trial funded by a 2003 Power Water Environmental Excellence Award grant.
 Tank and pump donated by TeamPoly, Adelaide. www.teampoly.com.au.
 First flush diverter and plumbing gear donated by Taps Tubs Tiles, Alice Springs.
 Installation by Roy Winther.



Further information

'Rainwater tanks' fact sheet (for central Australia). 2004. By Department of Infrastructure, Planning & Environment.
 'Guidance on use of rainwater tanks' (2004). 70 pp. EnHealth Council. Copies available for viewing from NT Health Dept (ph 8951 7518) or can be downloaded at http://enhealth.nph.gov.au/council/pubs/documents/rainwater_tanks.pdf