



Greywater Treatment Systems

All municipal water that is supplied to households is of drinking water quality, yet only about 1% is actually used for drinking. The rest is used for washing (becoming greywater), flushing toilets (becoming blackwater) or used on the garden.

Currently, in Tasmania, council regulations state that greywater must be treated (cleaned) before it can be re-used – on garden beds or for toilet flushing etc. This is because greywater (used water from laundries and bathrooms) contains traces of faecal matter and disease-causing pathogens.

Untreated greywater should not be stored, as pathogens can breed quickly. If greywater is collected, for example by washing-up in plastic tubs, or bucketing out of a bath, it should only be emptied directly onto soil, not onto plants. It should also be put on different parts of the garden in rotation, to avoid a build-up of salts which damage the soil.

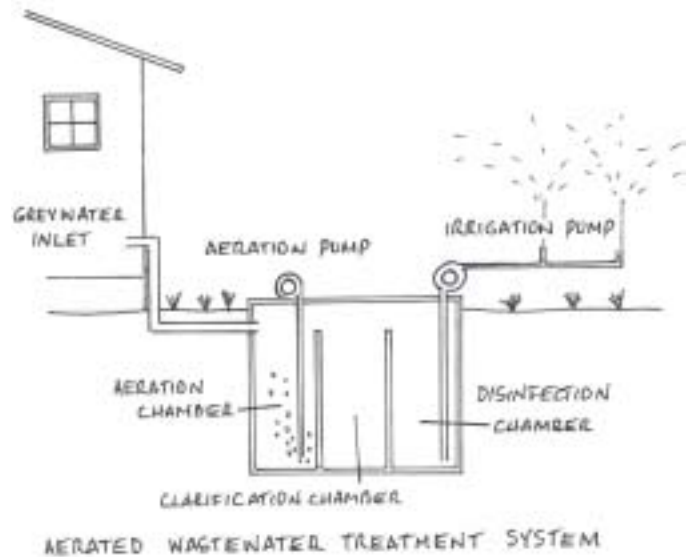
Traditionally, greywater in non-sewered areas has been treated through absorption trenches filled with gravel – which act as a filter – before the water is absorbed into the surrounding soil. Absorption trenches are used in conjunction with septic tanks or composting toilets. But some soils and sites are not suited to absorption trenches and here a miniature sewerage treatment plant or Aerated Waste Water Treatment System (AWTS) will be needed.

Aerated Waste Water Treatment Systems

Approved Aerated Waste Water Treatment systems in Tasmania (see contacts list overleaf) come in various types. Some include blackwater from toilets, while others treat only greywater. They use biological filters (gravel, sand and micro-organisms), aeration, and disinfection

(with chlorine tablets or ultra violet light) before pumping treated water onto garden beds.

Some systems use rotating arms to aerate water while others use pumps to blow air



into the tank. They all require a continuous power supply and regular maintenance by a contractor.

Initial purchase and plumbing installation costs about \$10,000 depending on the unit; maintenance and power will cost about \$500 per year.

Principles of Greywater Filtration Systems and Reed Beds

The first stage in filtering greywater is to remove large particles, hair, lint etc through a cloth bag or old stocking to prevent clogging of the next filter. (Kitchen water should pass through a grease trap first.)

Water is then fed into the top of a large drum or tank filled with layers of sand, fine gravel, then coarse gravel, before trickling out the bottom of the tank to a constructed reed bed or miniature wetland. Plants help to absorb nutrients (nitrogen, phosphorus) and aid evapotranspiration of water.

Tasmanian Native Plants for Irrigation Beds

Melaleuca ericifolia (swamp paperbark)

4–6 metres, frost-hardy

Melaleuca squamea (swamp paperbark)

2–3 metres, frost-hardy

Leptospermum lanigerum (woolly tea tree) 1–2 metres

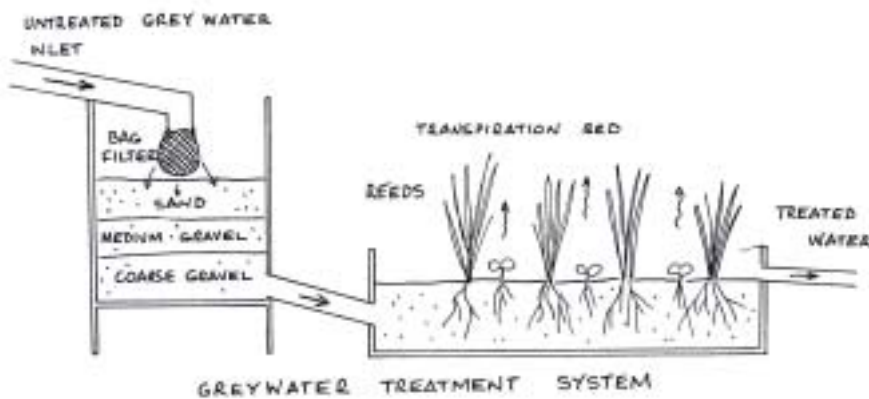
Callistemon viridiflorus (green bottle-brush) 2 metres

Callistemon pallidus (yellow bottlebrush) 2 metres

Gahnia grandis (cutting grass) 2 metres

Bauera rubioides dense shrub to 1 metre

Grevillea australis spreading shrub 1 metre high x 2 metres wide



Plants for Reed Beds

Sedges – *Carex appressa*, *Carex tasmanica*

Cordrushes – *Baloskion tetraphyllum* (tassel rush), *Baloskion australe*

Rushes – many species, e.g.

Juncus kraussii (small, salt-tolerant),

Juncus astrepus (large)

Water-tolerant Tasmanian natives are available from:

Plants of Tasmania

65 Hall Street, Ridgeway, 7054

phone 6239 1583

Suppliers of Aerated Waste Water Treatment Systems

Envirocycle

Professional Plumbing

7 Hornby Road Goodwood, 7010

Ph 6273 0755

Biocycle

Manion Plumbing

18 Invermay Road, Launceston 7248

Ph 6334 0617

Ozzi Kleen

MG Roberts Plumbing

Unit 1/12 Maxwell's Rd, Cambridge 7170

Ph 6248 5270

Biolytix Technology

www.biolytix.com

1300 881 472

Ph 07 5435 2700

Super Treat

490 Arthur Highway

Sorell, 7172

Ph 03 6265 1564

For More Information:

Sustainable Living Tasmania Environment Resource Library

Environmental Guidelines for the Use of Recycled Water in Tasmania. Department of Primary Industries Water and Environment, 2002

Workplace Standards Tasmania, Plumbing, on the Department of Infrastructure, Energy and Resources (DIER) website:

www.dier.tas.gov.au

Websites for the manufacturers of waste water treatment systems

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