

GREYWATER REUSE

What is greywater?

Greywater can be defined as any domestic wastewater produced, excluding sewage. Greywater originates from non-toilet plumbing fixtures such as showers, baths, basins and laundries. The main difference between greywater and sewage (or black water) is the organic loading. Sewage has a much larger organic loading compared to greywater and is unsafe to use untreated.

What can I use greywater for?

Greywater can be used to water gardens and if treated appropriately it may be used to flush toilets and used within your laundry for washing clothes.

What are the advantages of greywater?

- Reduce your water bills;
- Reduce the application of fertilisers to gardens and lawns; and
- Reduce the demand on water resources.

Types of greywater reuse

There are three main options for domestic greywater reuse:

1. Manual bucketing

Manual bucketing involves collecting small quantities of used water from washing machines and showers and disposing of it on your lawn and gardens.

No approval from City of Canada Bay is required for manual bucketing.

2. Greywater diversion device

A diversion system diverts water into your garden via a subsurface irrigation system. Water is not stored for long periods of time. Excess water that cannot be diverted into your garden can be directed into the sewer. This system only passes the water through a coarse screen filter to remove lint, hair and coarse particles. The water has not been treated (chlorine) and therefore it cannot be stored in a collection tank or distributed via a hose. There are two greywater diversion devices which can be implemented within your home

a. Pump diversion device

This incorporates the use of a surge tank (immediate holding well) and pump. The surge tank only controls the flow of the water, such as when water from a bath is released. A surge tank does not store the water for a long period of time. The greywater is then diverted into your garden via sub-surface irrigation.

b. Gravity diversion device

Incorporation of a hand activated valve, tap or switch which is directly fitted to the waste pipe of the plumbing fixture such as a washing machine. The greywater is then diverted into your garden via sub-surface irrigation.

Approval for a greywater diversion device

Approval is not required from City of Canada Bay to install a greywater diversion device providing that certain conditions are met. These conditions are detailed in the NSW Guidelines for greywater reuse in seweraged single household residential premises. Generally (this is not an exhaustive list) a greywater diversion device must:

1. Be installed in accordance with the Plumbing and Drainage Code of Practice
2. Not be a sewage management facility
3. Meet performance standards in that the greywater diversion device
 - a. Prevents the spread of disease;
 - b. Prevents the spread of foul odours;
 - c. Prevents the contamination of water;
 - d. Prevents degradation of soil and vegetation;
 - e. Discourages insects and vermin;
 - f. Ensures persons do not come into contact with untreated sewage or effluent (whether treated or not); and
 - g. Minimises adverse impacts on the amenity of the premises and the surrounding lands.
4. Display the 'WaterMark' logo
5. Be able to switch back to sewer
6. Not store greywater for extended periods of time
7. Have subsurface distribution lines that are at least 100mm below ground surface and 1m from property boundaries.
8. Contact Sydney Water to determine if an integral dual check valve for your water metre is required. You must consult the NSW Guidelines for greywater reuse in seweraged, single household residential premises prior to the installation of a greywater diversion device.

3. Domestic Greywater Treatment System (GTS)

A domestic greywater treatment system collects, stores and treats greywater to a quality which allows discharge directly on to the surface of your lawn or garden. The treated water may also be used for toilet flushing and laundry use. Greywater treatment systems are required to be serviced quarterly by an appropriately qualified person. A copy of the service report is to be submitted to Council.

Treatment

The treatment process involves the settling of solids, floatation of lighter materials, anaerobic digestion, aeration, clarification and disinfection. Disinfection is the last process, usually consisting of chlorination of clarified water, and it is undertaken to eliminate pathogenic micro-organisms.

Approval

Greywater treatment systems must be accredited by NSW Health. You can find the list of accredited systems on NSW Health's website. You must obtain approval from City of Canada Bay to install and operate a domestic greywater treatment system. You must submit an 'Approval to Install a Domestic Greywater Treatment System' application with the relevant information. Once approval has been given by City of Canada Bay and the greywater treatment system has been installed satisfactorily, a section 68 'Approval to Operate' will be issued. You will need to install a testable backflow prevention device at the water meter at your own expense, you will need to have this tested annually by a licensed plumber and you will need to notify Sydney Water.

Sizing of Systems

The amount of wastewater generated by households will vary depending on the number of occupants, age distribution, lifestyle and water usage patterns. It is important to determine how much greywater will be generated before making an application to City of Canada Bay to install a greywater treatment system.

Information on how to size a greywater treatment system disposal area can be found in the appendix of the NSW Guidelines for greywater reuse in seweraged, single household residential premises.

Pollution Risks

Greywater has the potential to contain many pollutants and microorganisms such as food, faecal coliforms, E.coli, nitrate, phosphate and bleach. These pollutants can have adverse impacts on the health of humans and the environment. When operating a greywater system:

1. Use detergents that have low levels of phosphate, nitrate and sodium; and
2. Only operate the greywater system when it is required. Overwatering can cause greywater run off which has the potential to cause pollution. Do not put greywater into the stormwater system, any creek or water way. This is considered water pollution under the Protection of the Environment Operations Act, 1997 and regulatory action may be taken against you. The greywater you produce must remain on your property and must not cross the property boundary.

Do

- Wash your hands after watering with greywater
- Use garden-friendly cleaning products that are biodegradable and are free from or low in sodium and phosphorous
- Pipe greywater underground or under mulch to water your garden
- Irrigate your ornamentals and orchards, making sure greywater is not in direct contact with fruit
- Regularly check your greywater system is working properly
- Divert greywater to the sewer during wet periods
- Stop using greywater if someone in the household is sick
- Check your state and local regulations
- Use a licensed plumber to install your diversion or treatment system
- Avoid clogged soil by using a coarse filter to reduce the amount of solids in your greywater
- Make sure you contain greywater within your property.

Don't

- Store untreated greywater for more than 24 hours
- Use greywater to water vegetables and herbs that are to be eaten raw or partly cooked
- Use greywater sourced from washing nappies or soiled clothes
- Use greywater that has disinfectants and bleaches in it
- Use greywater from kitchens, unless it has been treated
- Use greywater that is still hot as it will kill beneficial organisms in the soil
- Spray or hose greywater
- Allow pets to drink greywater.

Related Items

- NSW Government - Water 4 Life 'Greywater Factsheets'
- http://waterforlife.nsw.gov.au/recycling/greywater/greywater_fact_sheets
- NSW Guidelines for greywater reuse in sewerred, singled household residential premises
- http://waterforlife.nsw.gov.au/__data/assets/pdf_file/0018/11808/Greywater_guidelinesMay2008.pdf
- NSW Health <http://www.health.nsw.gov.au/publichealth/>
- Sydney Water <https://www.sydneywater.com.au/SW/your-home/using-water-wisely/greywater-reuse/index.htm>