

Setting up a gray water system involves extra expense because it requires installing two separate waste and water supply systems, but it can also lead to some savings. Savings for yourself in the amount of fresh water you use and savings for your community. A substantial amount of electricity is consumed by the processing of potable water and by the treatment of waste water. A lot of water that is used is pumped by electricity out of the ground. It's then treated, conditioned, filtered and cleaned and all of these steps require materials, maintenance and more electricity. Then more electricity is used as it is pumped to homes and businesses.

Gray water systems reuse some of the water that would normally go directly down the drain thus conserving the amount of fresh water you are using. This can be done with certain types of waste water but not all types. Prohibited gray water sources include waste water containing urine or fecal matter, reject water from reverse osmosis systems, water softener discharge water, kitchen sink waste water, dishwasher wastewater and some other sources.

A lot of gray water systems use water from basins, showers, tubs and laundry facilities. Water from other sources including swimming pools, back wash operations (from cleaning filters), rain water, cooling tower blow down or foundation water (rain water from drain tiles) might be an option depending on a decision by the Building Official.

This waste water is piped separately to a tank. The tank can be above or below ground where the gray water may be filtered and treated depending on the need. The holding capacity of the tank shall be sized in accordance with anticipated demand and the tank shall be labeled 'non potable water- do not drink'. If the gray water is to be used in an untreated form for subsurface irrigation the tank shall be sized, shall not connect to the plumbing system and an overflow piping system shall be indirectly connected to the sanitary drain waste and vent system. Gray water is often used for flushing toilets. The water from the bathroom shower and sink is drained to a special holding tank and then pumped back through specially marked distribution piping to flush toilets and urinals or other uses. All gray water distribution piping shall be labeled and marked with the color purple and the words 'caution non potable water- do not drink'. This system requires a make up water supply in the event the water level in the tank drops to a certain level. An approved backflow prevention device is required if a connection is made to a potable water system. Signage shall be provided when entering a room where non potable water is utilized. Sources used for this article include the International Green Construction Code.

http://www.iapmo.org/2015%20Minnesota%20Plumbing%20Code/2015_MN_Plumbing_Code_10_Chapter_6.pdf

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