

# Alternative Waste Water Systems

## Why Build with Alternative Water Systems?

**Drinking water is a precious resource not to be used to carry waste.** As opposed to conventional toilets, which use almost 20 liters of water to flush, water-conserving toilets can use only 5 liters. The flushing of toilets (creating blackwater) constitutes 38 to 45% of all interior water use in the US and is the single largest use of water indoors. Composting toilets do not need water to function at all.

**Graywater, water from bathing and washing, can be reused.** The nitrogen, phosphorous and potassium from soap and body waste are actually organic matter that can be harmful pollutants when discarded into the environment. When responsibly recycled, however, they can be beneficial nutrients. It is estimated that 42 to 79% of household graywater comes from the bathtub and shower, 5 to 23% from laundry facilities, 10 to 17% from the kitchen sink or dishwasher, and 5 to 6% from the bathroom sink.

**Alternative wastewater systems reduce the need for septic system pumping.** A septic system that receives only graywater and does not contain waste from garbage disposals or toilets, only needs to be pumped once every twenty years as opposed to the conventional once every three years.

## What are Alternative Wastewater Systems?

### Graywater Systems:

**Direct Reuse:** Reuses graywater for flushing toilets and for lawn and garden irrigation.

**Cleaning Reuse:** Filters water through deep soil beds, or shallow gravel beds, in a space where plants can be grown. Graywater can also be circulated through evapotranspiration trenches (where plants absorb the water and release it as water vapor, letting the solids filter out to be composted) or through constructed wetlands where the water is drained into a fabricated pool where grasses and rushes grow and filter the water.

**Composting Toilets:** Composts wastes through microbial processes, heating the waste to a temperature so as to kill any harmful bacteria, and producing materials that in some areas can be used as fertilizer. This system does not use water, eliminating the production of blackwater (water from toilets), and the contamination of precious drinking water.

**Eliminating Garbage Disposals:** Reduces waste added to septic systems, prolonging the life of the septic system. According to the US EPA, household garbage disposals contribute 850% more organic matter and 777% more suspended solids to wastewater than do toilets.

### Sources:

Talbot, John. Simply Build Green. Findhorn Press, Scotland: 1997.

Jenkins, Joseph. The Humanure Handbook. Jenkins Publishing, Pennsylvania: 1999.