

Solve Septic Waste Problems with a Composting/Greywater System

Traditional on-site sewage disposal systems have inherent problems: Water is mixed with human waste, then sent to a septic tank, trickling out as a smelly, polluting effluent. After traveling through a sizable leach field, this pollution is distributed into the ground and eventually into our groundwater, wells, aquifers, lakes, ponds, oceans, and waterways.

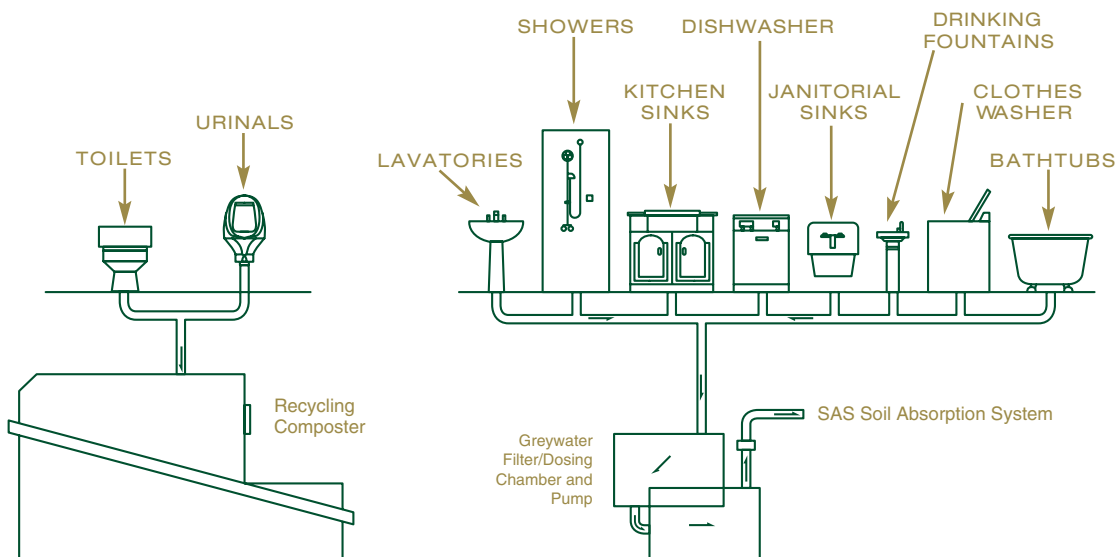
Public health and drinking water supply issues, as well as impacts on recreational activities, are enormous. Regulations have tightened considerably and waste disposal is a prime concern for new construction and in existing buildings, public facilities, commercial buildings and residences alike. The stringent regulations and strict approval process necessary to get a permit for a traditional septic system may make some projects unbuildable. Efforts to bring an existing system into compliance could require installing retaining walls, tearing out

trees and enlarging leach fields. This may not be economically feasible or may reduce the value and aesthetic appeal of the property.

For sites that cannot meet traditional septic system rules cost effectively, a Clivus composter/greywater system is the solution. This system employs a simple but solid science and modern technology at all points:

- *Flushing toilets with soap foam instead of water*
- *Discharge greywater only*
- *Converting human waste to safe end products*

Less water is used. Greywater is safely recycled. Less space is necessary. Site aesthetics are retained. User needs are met in an acceptable manner. The environment is protected.



The Clivus greywater system

Greywater is all the used water coming out of a residential, commercial, or public building that does not come from urinals, toilets, or garbage grinders. This includes drains from lavatories, showers, kitchen sinks, dishwashers, janitorial basins, drinking fountains, washing machines, and bathtubs.

These drains have traditionally been plumbed into the same system with sewage as a cheap convenience. But that is no longer an affordable option for many sites. Turning greywater into sewage and wasting water are luxuries of the past.

Fresh greywater, never polluted by the waste stream, is not offensive and is a valuable resource that can quickly be recycled back into the environment.

A Clivus dosing recycling greywater system is simple, efficient, and low maintenance. Greywater flows through filters to remove solids and is then dosed to biologically active soil.

After filtration, greywater flows into a chamber, then into dosing lines under a plant bed or lawn. It is effectively recycled as irrigation water.

A greywater system can be used alone to greatly reduce the amount of water that must be leached through a septic tank's field lines and to distribute it back into the environment in a nonpolluted state. But a greywater system is most efficient when combined with a Nepon foam toilet/Clivus composter system.

Nepon Foam-flush toilets

Depending on the use of the facility in which they're located (residential, commercial, public), traditional water-flush toilets account for 40 to 95 percent of the water that goes into a septic system, and account for nearly all the problems. This water turns human waste into a smelly, polluting mess underground.

Although dry toilet fixtures can be safely and efficiently used when necessary, most Clivus systems use innovative foam-flush toilets that closely replicate traditional flush toilets. A Nepon foam-flush toilet looks and works very much like a traditional toilet. But it ingeniously agitates a drop of soap with 3 ounces of water for each efficient flush.

The soap actually enhances the action of the composting system down the line. A durable and highly efficient fan pulls air down through the toilet, over the composting mass below, and out a vent stack on the roof. Toilets attached to a Clivus composting system emit no odor.



The Clivus composting system

If we work with natural science instead of against it, nature will convert human wastes safely into compost. Oxygen-using organisms (aerobes, or "good bacteria") do the work. They convert 95 percent of the waste mass to water vapor and carbon dioxide—the same gases humans exhale. The other 5 percent becomes nitrogen-rich byproducts.

This natural process is thwarted when human waste is mixed with water and sealed away from oxygen in a septic tank. The resulting sewage returns to the environment in a polluting state.

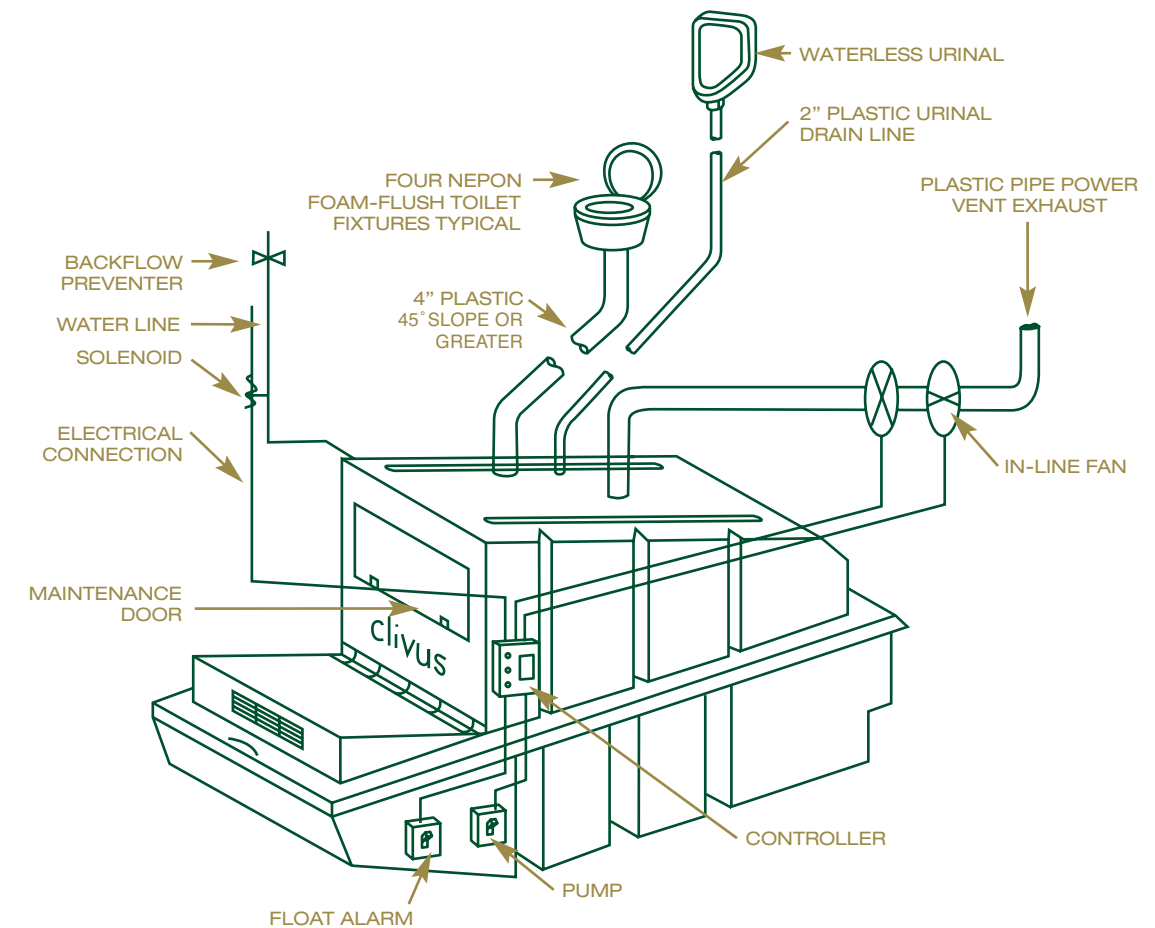
A Clivus composting system takes advantage of nature's aerobic composting process, then enhances and accelerates it. After waste enters the Clivus composter, the natural process of breaking it down is given a boost.

Bacteria and wood shavings are added to the composter occasionally. Those natural ingredients, along with the oxygen circulated by the venting fan, help aerobic bacteria thrive and quickly and efficiently "eat" the waste. About 95 percent of the mass vents off as harmless water vapor and carbon dioxide.

The remaining 5 percent is nonpolluting, safe compost that is removed by the Clivus maintenance department or a local contractor after a two-year initial startup, then about once a year thereafter.

The composter's size depends on the number of users and amount of waste it supports. A home requires a unit that is about 9 feet long by 5 feet high by 4 feet wide. Public and commercial buildings use larger composters, often several in tandem.

Because the greywater/composting system relies on gravity, a basement installation is ideal. But an underground exterior utility room can also house the units.



MAINT.
DOOR

CLIVUS

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Your Unique Solution

Each Clivus composting/greywater system is uniquely designed and engineered for each specific site/use. Our staff will gladly provide a free estimate and initial design for your existing or planned building. Simply complete the appropriate questionnaire:

- *Site Profile Questionnaire (Public/Commercial Facility)*
- *Site Profile Questionnaire (Residential)*

Let Clivus provide an economic solution for the challenges of your site.

Support

Clivus supports its installations according to its clients' needs. Our experienced technicians can provide total ongoing maintenance or respond on an as-needed basis. We will gladly train on-site personnel, from the maintenance staff of a large project to the do-it-yourself homeowner. The soap, wood shavings, and biological supplies needed to keep Nepon toilets and Clivus composters performing efficiently can be delivered, as needed, or actually put into the system by our maintenance staff.

About us

The Clivus prototype was first tested in Sweden over 65 years ago. Since 1971, Clivus has been providing environmentally friendly and cost-effective human waste solutions in the United States. Over the years, populations and density have increased, drinking water supplies have dwindled, pollution has skyrocketed and environmental regulations have tightened.

Fortunately, Clivus has a full line of economical and less polluting products. Yes, technology has improved. But Clivus systems rely on an entity greater than technology—nature. Instead of trying to change the laws of natural science to fit human needs, Clivus leases natural science and enhances it with modern technology. The result is a more natural and economic solution.

Partial list of typical clients

- *Oakes Hall, Vermont Law School, South Royalton, VT*
- *Misquamicut State Beach, RI*
- *McDonald's-Mobil, Interstate 93, NH*
- *Walden Pond State Park, Concord, MA*
- *Little Compton Library, RI*
- *Wampanoag Tribal Headquarters, Martha's Vineyard, MA*
- *New Seabury Golf Course, Cape Cod, MA*
- *Pinkham Notch Visitor Center, Appalachian Mountain Club, North Conway, NH*
- *Massachusetts Highways Rest Area, Lancaster, MA*
- *Salisbury State Beach, MA*
- *Society for the Protection of New Hampshire Forests, Concord, NH*
- *Gillette Castle State Park, East Haddam, CT*
- *Doyle Conservation Center, Leominster, MA*
- *Camp Sewataro, Sudbury, MA*
- *Island Cohousing Community Association, Vineyard Haven, MA*

Please call for detailed case studies of projects in specific geographic or topographic areas, industries, or uses.

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