



# SEPTIC SYSTEMS

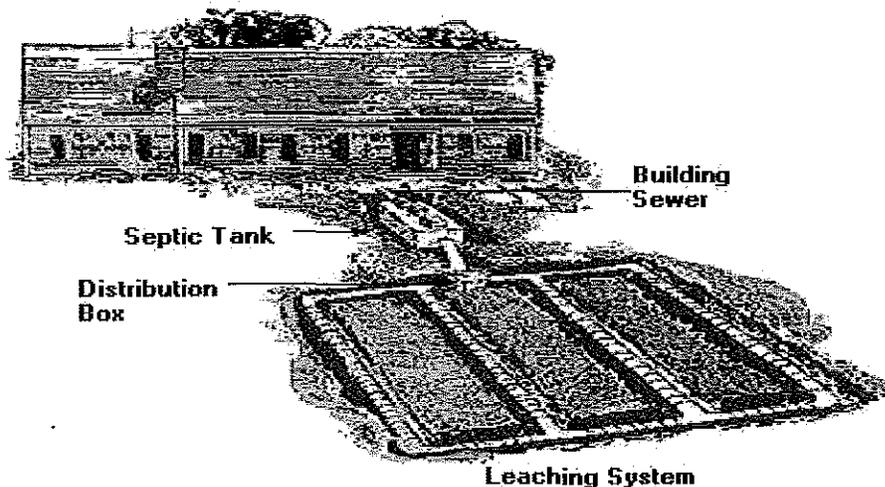
## Who Has A Septic System?

Approximately 30 percent of Connecticut's population is served by on-site subsurface sewage disposal systems (a.k.a. septic systems). This means a large percentage of the state's population is served by other means of sewage disposal such as municipal sewers. If it is unclear how sewage is disposed of from a particular building or residence, please contact your Local Health Department or Water Pollution Control Authority for information pertaining to your property.

## What Is A Septic System?

The purpose of a septic system is to dispose of domestic wastewater or sewage from a building in such a manner as to protect public health and the environment. There are four main components to a septic system:

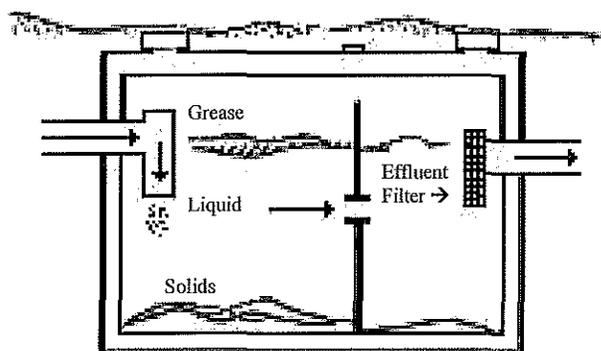
1. **Building sewer** connects the building plumbing to the septic tank.
2. **Septic tank** allows for the settling of solids and provides the initial treatment of the sewage. This is where waste material is broken down by bacterial action. A properly functioning septic tank will reduce pollutant levels and produce an effluent of fairly uniform quality.
3. **Distribution piping** directs the flow of sewage effluent to the leaching system in a manner that assures full utilization of the system. Sewage effluent can flow through the distribution piping by means of gravity, or with the assistance of a mechanical pump or siphon.
4. **Leaching system** disperses the sewage effluent into the surrounding soil. There are many types of leaching systems. The specific type utilized on a property is usually dependant on the soil conditions on that site. Most residential installations utilize stone-filled leaching trenches or hollow structures surrounded by stone.



## What Is The Purpose Of A Septic Tank?

The septic tank is a watertight receptacle that retains and delays the wastewater from proceeding directly to the leachfield. It serves as the primary physical treatment of the wastewater by settling out the heavier solids and preventing the floating scum and greases from escaping into the leachfields. The standard septic tank has a minimum 1,000-gallon minimum liquid capacity and can be made out of concrete, steel or plastic. Newer tanks are equipped with inlet and outlet baffles, an interior compartment wall, and an effluent filter, all which will assist in retaining scum/solids inside the septic tank. The efficiency of the septic tank as a settling unit is reduced when the velocity of the liquid moving through the tank increases. This can occur if a tank that is undersized or has a reduced storage capacity due to an excessive amount of solids. A relatively stable biological system within the septic tank helps promote the conversion of organic solids to soluble organic chemicals and gases, which helps provide a uniform quality of effluent with reduced pollutant levels.

**Typical Septic Tank**



## How Does a Leaching System Function?

A properly functioning leaching system should disperse sewage effluent into the surrounding soils without breaking out onto the ground surface or backing up into the septic tank or building plumbing. The system should be capable of working during peak demand periods and under adverse conditions such as heavy rain events. The bottom of a leaching system must be located a minimum 18 inches above the seasonal high groundwater table. Soil permeability, slope of the area, and the length of the system being provided are all important factors in designing a system and ensuring that the volume of sewage effluent discharged does not overload the capacity of the leaching system and surrounding soils.

Many older homes are served by undersized septic systems or cesspools that are unable to handle the amount of water being used, especially in cases where

the original home has been enlarged without proper expansion of the septic system. Leaching systems for residential homes are sized based on the potential number of bedrooms in a dwelling and soil conditions of the property. In order to protect your septic system from being overloaded, the daily flow from the building should not exceed the design flow of the system. When available, this information may be found on the Permit to Discharge issued by the Local Health Department.

### **What Are Some Common Symptoms That A System Is Experiencing Difficulties?**

Patches of lush green grass, strong sewage odors, or pooling of wastewater on the ground surface are all indications of a possible septic system failure. Sewage overflowing onto the ground surface warrants immediate attention. Plumbing fixtures may exhibit difficulty in releasing its contents (slow draining or gurgling, plumbing backups, etc.). This condition may be septic system related or an indication of a clog in the building sewer or internal building plumbing. In such cases, you should have the plumbing checked before proceeding further with an investigation of the septic system.

Runback from the leachfields into the septic tank after pumping may be an indication that the leachfields are fully saturated and nearing failure. Large volume discharges (such as washing machines and bathtubs) can also cause a backup or overflow of sewage above the septic tank or leachfields. This condition is usually at its worst following heavy rain periods. A CT licensed septic installer should further evaluate the septic system in these cases.

Foul septic odors in storm drainage piping, catch basins, footing drain piping or curtain drain discharges may also be an indication that untreated sewage is entering into these surface water or groundwater control systems. It is important that you contact your Local Health Department to report a possible septic system failure or if you witness any of the above-mentioned problems with septic systems in your area.

### **Where Can I Get Information About My Septic System?**

Local Health Departments have property files that may contain important septic system information such as copies of permits, design plans, as-built drawings, and soil test data. This information is available to be viewed by the public, or you may ask the town sanitarian to review the files with you (as their time allows). Refer to the CT DPH web site at: <http://www.ct.gov/dph> to obtain contact information from your Local Health Department. If your home is served by a septic system, then you must contact your Local Health Department when you are planning a building addition, home winterization, renovation of an unfinished space, or adding a garage, deck, sunroom, pool, shed, etc. These types of projects require approval from both the Building Department and Local Health

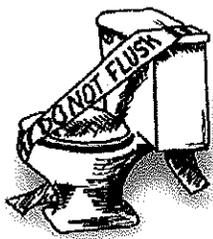
Department prior to construction. It is recommended that you first discuss your plans with the Local Health Department so that they can inform you on the necessary permit requirements and advise you on possible site limitations on your property. There are cases when building projects cannot be approved due to septic system regulations.

### **What Maintenance Is Required For Septic Systems?**

Pumping your septic tank is probably the single most important thing you can do to protect your septic system. CT DPH recommends pumping your septic tank every 3-5 years. More frequent pumping is suggested if you use a garbage disposal, have a large family, or have an undersized septic tank. Failure to pump your septic tank on a regular schedule may result in an excessive buildup of solids inside the tank. In Connecticut, homeowners must hire a licensed septic pumper or installer to pump-out and service the system. This requirement is to ensure septage is disposed of properly, as well as for the homeowner's safety. Septic tanks produce harmful fumes that can be dangerous. This is one of the reasons why individuals should never enter a septic tank as toxic fumes can quickly overcome you.

Keep a record of maintenance on your system. It is suggested that you include who maintained the system, what was done, the date of the work, and the current status of the system. The use of additives to help maintain a septic system is not recommended by CT DPH. Additives do not extend the amount of time required between septic tank pumping. Improperly maintained septic systems can cause environmental and public health concerns such as contaminating groundwater or surface water resources.

### **What Can't I Put In My Septic System or On My System?**



It is important not to put excess solids into the system. Excess solids will increase the frequency of pumping and could cause your effluent filter to clog. Oils, greases, industrial/commercial wastes, toxic chemicals, cigarette butts, condoms, sanitary napkins, cat-litter, and backwash from water softeners or water treatment systems must not be put into your septic system. Putting any of these items in your system can potentially cause problems and will increase the likelihood of premature failure.

It is also noted that the CT Public Health Code does not allow backwash from water treatment systems to be discharged into septic systems.

Be aware of how much water you are using and avoid using excess water. Toilet flushing can constitute 25 percent of water usage in a household. Newer toilets use less water than some of the older models, therefore using a newer model will decrease the amount of water that is used. Set your washing machine on the proper load setting so that you are not using more water than needed.

Do not park vehicles or place other large objects on your septic system. This may compact the soil and reduce its ability to treat wastewater. It may also damage the network of pipes within the system. Avoid planting water-loving shrubs with deep root systems or trees near the leaching system, as roots could damage the pipes or clog the leaching system. Water from sump pumps, roof leaders, yard drains, etc. must always be discharged away from the septic system area.

The repair of failing septic systems can pose a significant expense on property owners, or to the local tax payers if municipal sewer lines need to be extended to a particular area. It is far less expensive to properly maintain a septic system than to replace one.

### **For More Information:**

**CT Department of Public Health**  
Environmental Health Section  
Environmental Engineering Program  
450 Capitol Avenue  
Hartford, CT 06134-0308  
860-509-7296

<http://www.ct.gov/dph/subsurfacesewage>

#### **US EPA Septic Systems**

<http://cfpub.epa.gov/owm/septic/index.cfm>

#### **National Small Flows Clearing House**

<http://www.nesc.wvu.edu/wastewater.cfm>

#### **CT eLicensing Website**

<https://www.elicense.ct.gov/>