

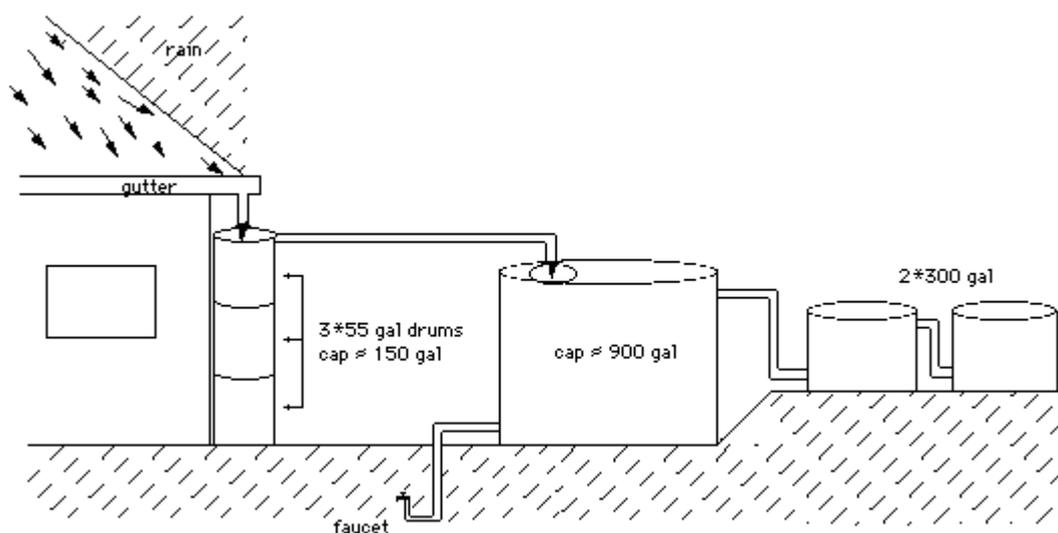
Rainwater Catchment System



The rainwater catchment system is based on collection of rainwater and gravity flow pressure principles. Rainwater runs off the roof of the house into rain gutters. The gutters channel the water and empty it into a standpipe. When the standpipe has reached its capacity of 150 gal, the overflow runs through a pipe and empties into a 900 gal drum. Two 300 gal barrels collect the overflow from the 900 gal drum and any other overflow drains to the public sewer system. Spigots are built into the bottom of the standpipe and the 900 gal drum. The pressure of the water in the standpipe and the drum pushes the water out when the spigots are opened.

System Configuration

To configure our system we used the garage/shop roof, which measures 42'x48', pitched at about 1 to 2, as our collector. During a light rainfall we can collect 400 gallons in a day. During heavy rains we can collect 1500 gallons in a few hours. Our rule of thumb calculation for square footage vs. amount collected is about 400 gallons of water per 1" rainfall, on our 25x40 foot garage roof.



First, the advantages of rainwater collection:

Relatively inexpensive.

Flexible system--easy to reconfigure, expand, or in some cases, relocate.

Can be installed or expanded on a 'pay as you build' basis.

Reliable--eventually, you will have water in your tanks!

Clean, and the water chemistry is easy to manage.

Can be sized to the need at hand, and integrated into new construction easily.

Relatively easy for owner/builder to do with little help.

Excellent back up system.

Can easily be tied into well water system.

Can be put inside a barn, large garage, or in a basement.

Water is still available if you have no power, though at diminished pressure.

Pumps can run off solar or 12 volt systems.

Tanks rarely freeze except in sustained extreme cold due to their thermal mass.

Easy to tie into solar water system.

Most of the system is accessible, rather than buried, so repairs are easy.

Few expensive components.

Now, the disadvantages of rainwater collection:

Aesthetically intrusive - you have to do something with big tanks.

May not meet local building code requirements for primary water source for new construction

Requires more ground space than a well for the storage tanks and pumping system

Requires a good sized roof

Roof materials and airborne pollutants can pollute the rainwater

Gutters require constant maintenance and cleaning
