Rainwater Harvesting in Today's Modern Homes

By Chris Maxwell-Gaines

Here in Texas, the idea of rainwater harvesting usually conjures up images of your parent's or grandparent's farm or an old farm cistern. With the increasing interest in green building techniques and sustainability, rainwater harvesting is becoming a viable option for supplying our modern homes with water, whether it be for landscape irrigation or for potable water. It's not just for the farm anymore! There are many countries such as Germany and Australia where rainwater harvesting systems are regularly installed during new home construction. In the U.S., the growth of green building techniques and practices in the construction industry has made rainwater harvesting systems more popular, especially in drought-prone areas or areas facing water restrictions. In addition, stormwater regulations in many cities create another reason for the installation of a rainwater harvesting system.

Rainwater harvesting is simply the collection of the rainwater run-off from a structure such as a roof or other impervious surface in order to store it for later use. Traditionally, this involves harvesting the rain from the roof of your house. The rain will collect into gutters that channel the water into a cistern. The simplest form of rainwater harvesting is the use of a rain barrel installed under a gutter downspout. While collecting rain in a rain barrel is beneficial, many people discover that the rainstorms of central Texas easily produce enough precipitation to flood these small rain barrels. To take advantage of the large amount of rainwater run-off from your roof, a rainwater harvesting system can be installed during initial house construction or easily installed to your existing home. Rainwater cisterns in these systems can range from 300 gallons to 10,000 gallons. A cistern can be sized according to the amount of roof drainage area and to the desired use of the stored rainwater.

Rainwater Configurations

There are many different configurations of rainwater harvesting systems with a variety of design options. A rainwater system cistern can be located immediately adjacent to or far away from your house, as long as the entry point of the rainwater into the cistern is below the elevation of your lowest gutter. This allows a cistern to be installed where it naturally fits into your landscape or property layout. Additionally, there are many options for cistern materials such as, galvanized sheet metal, plastic, fiberglass, corrugated metal, and wood. In order to utilize the stored rainwater, a small pump can be installed to provide pressure to apply the rainwater to your landscape through a sprinkler or irrigation system. Another benefit of rainwater systems is the opportunity to direct the stormwater run-off away from your home's foundation. When the cistern fills, an overflow pipe can be installed to direct the excess rainwater to a designated area away from your house and foundation.

How much do I need?

So just how much rain can you collect from your roof? One inch of precipitation over 1,000 sq. ft. will yield approximately 600 gallons of water. Therefore, if you have a 2,000 sq. ft. house, 2 inches of precipitation will yield 2,400 gallons of water! Typically, in the central Texas area, we receive large storms with long periods of dryness in between these storms. A rainwater harvesting system with a large cistern takes advantage of the pattern of rainfall in central Texas and allows you to store this rainwater for the periods of no rainfall.

In conclusion, there are many benefits of rainwater harvesting systems, no matter if you are in an urban setting or if you live in a rural area. Harvested rainwater can be collected and used for landscape irrigation with just a small investment in a rainwater harvesting system. Rainwater systems can be designed into your landscape with a variety of options and configurations. Every household can harvest rainwater and reap the benefits of the harvested water. For more information about rainwater harvesting and for more water conservation ideas, visit www.watercache.com.

Benefits of Rainwater Harvesting

Clean, readily available

Better for landscape and plants versus municipal water

Reduces the stormwater run-off and solves drainage problems

Promotes conservation and self-sufficiency

Socially acceptable, environmentally responsible

Simple technologies, easy to maintain

The potential cost savings especially with rising water costs