



AN ENVIRONMENTALLY FRIENDLY HOME and LANDSCAPE, Part 3

by Bernadell Larson, HCMG

Another of the eight categories for obtaining a LEED-H rating is Water Efficiency, which addresses 1) Water reuse, 2) An Irrigation System, and 3) Indoor Water Use. The intent is to minimize demand for potable water.

Water Reuse: LEED suggests designing and installing rainwater harvesting system (also referred to as a rainwater catchment system); and/or designing and installing a grey water re-use system. You can install a whole house rainwater harvesting system (potable water inside the home) or a system to capture water for landscaping. Numerous articles have been published about rainwater harvesting. The Master Gardeners association offers specialization training in rainwater harvesting; and, these specialists are available to speak to organizations about rainwater harvesting / catchment. For anyone wanting to design and install a rainwater system, there are some valuable resources available to you via the Texas Rainwater Catchment Association (www.TRCA.org) and the State of Texas website (www.twdb.state.tx.us).

As much as 50% of potable water use in a home may be for maintenance of lawns and gardens. Capturing rainwater for landscaping helps reduce this demand. Grey water is defined as water from showers and lavatories. (Black water is defined as water from toilets, kitchen sinks and clothes washers, and has to be processed thru a septic system or municipal wastewater treatment facility.). If you install a grey water reuse system, it should be directed to a subterranean drain field for landscape irrigation (it has to be separate from the/a septic system). It must include a storage tank that can be used as part of the irrigation system. Effective January 1, 2005, the State of Texas enacted more stringent guidelines for grey water systems, and most counties no longer allow clothes washer water to be diverted to a grey water system because of possible contamination from fecal matter when diapers are washed. (My question is: Who still uses cloth diapers?) It is best to verify current regulations before installing a grey water system. However, we are seeing more homeowners plumbing their homes to use grey water to flush toilets; thereby reusing grey water prior to entering a septic system or municipal treatment plant.

Irrigation System: The irrigation system must have a central shut-off valve and sub-meter. One option for the irrigation system is to install a high efficiency irrigation system with: 1) having at least 50% of landscape planting beds with a drip irrigation system to minimize evaporation, 2) a separately zoned area for turf and each type of bedding area, 3) a timer or controller that activates the valves for each watering zone and allows irrigation at the most efficient time of the day; 4) pressure regulating devices to maintain optimal pressure and prevent misting, 5) high efficiency nozzles and 6) check valves in the heads. Another option for the irrigation system would be to design and install a high efficiency irrigation system with a moisture sensor controller or rain delay controller. As an example, the "smart" controllers receive radio, pager or Internet signals with evapo-transpiration information to direct the irrigation system to replace only the mixture that the landscape has lost due to heat, humidity, and wind. Of course, another option is to install a landscape design that needs no irrigation.

Indoor Water Use: The intent is to minimize indoor demand for potable water. The preference is to install high efficiency (low flow) fixtures. All lavatory faucets and shower heads must have ≤ 2.0 GPM (gallons per minute) and toilets must be ≤ 1.3 GPF (gallons per flush). There are also fixtures and shower heads available that are ≤ 1.5 GPM and toilets with ≤ 1.1 GPF. These toilets were not available when I selected mine.

You can also achieve water savings with more efficient water distribution systems; improved hot water distribution systems, and water efficient appliances. As an example, top loading washing machines take 45 to 55 gallons per load; horizontal axis clothes washers take anywhere from 5 to 15 gallons per load. Also, if you chose a high efficiency dishwasher, it will use less water than if you washed the dishes by hand. One of the most significant things we can do is to practice water conservation. We have all heard about various tips to be better conservers of water, so I will not repeat them here. My suggestion is to be aware of how much water you are using next time you turn on the faucet or flush the toilet. You will be surprised at how easily it will be to change habits. Every little bit helps!