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Rainwater Harvesting

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MAKE EVERY DROP COUNT

Every year we hear of countries who are suffering through annual drought, Africa seems to be the hardest hit along with Australia. It is no secret that our fresh water supplies are rapidly dwindling. Some parts of the world have begun major projects; both China and Brazil have huge collection systems in place. In Bermuda and the US Virgin Islands a rainwater collection system must be included in any new construction.



One US state that is bucking the trend however is Colorado, they have a water rights law that restricts "stealing water" that they feel belongs in the watershed.

Our American neighbors have a number of areas where there is an acute shortage. Florida and California have aggressive rainwater harvesting programs. Florida for example from 1986 to 2001 increased their reuse capacity by nearly 300%.

Here in Canada we have begun to realize the value of rainwater harvesting. The recently announced LEED for Homes has an entire section in their program for water management, irrigation and grey water use. In June of 2006 the Ontario Building Code was amended to allow the use of rainwater for

dual plumbing systems inside a building. The City of Toronto has two pilot projects at the Metro Zoo and Exhibition Place. A number of the CMHC EQulibrium Project Homes have utilized rainwater collection for supplying water to toilets along with irrigation. In January of this year the Canadian Water and Wastewater Association partnered with the Canadian Institute of Plumbing and Heating to promote water demand reduction programs. The CIPH is promoting the "WaterSense" program developed in the USA that certifies water fixtures and devices used for water consumption. Why are these companies and governments promoting rainwater harvesting? One of the biggest reasons is water treatment; you really don't need municipally treated water for your garden or your toilet for that matter. The cost of treating water is one of the major cost factors in most municipal budgets. The City of Toronto estimates that 33% of their annual municipal electrical bill is devoted to water pumping and treatment.

How can the average homeowner help to do their part? It can be as simple as rain barrels located where each of your downspouts are connected to your eve trough. There are some things you should know about rain barrels and how to properly locating them. I see more of these in use and some are cleaned out plastic barrels with a hole cut in the lid. These are going to be a frustrating supply once the leaves and debris block the drain line. Lack of proper base is another issue, as is poorly installed downspouts that have been loosely fitted to the barrel. Not all barrels are created equal; the better rain

RAINWATER RECOVERY

barrels have the right features. The first is a screw on cap that has a fine screen fitted to the cap to catch the leaves and debris. There should be two openings, one with a tap installed on the base of the barrel. The second opening should be near the top where you can attach an overflow line. A good rain barrel will cost around a hundred dollars. The next step is a proper base, once a rain barrel gets full it weighs a lot and I see many that have settled and now the overflow is not functioning. One method is to dig a hole at least 18 inches deep and wide enough for the rain barrel to sit fully in the centre of the hole. Line the hole with garden fabric, then fill it with washed gravel and tamp it down fully. Next, place a large patio stone on the gravel and level the rain barrel. Now fit your eve trough to the rain barrel so that the downspout elbow sits securely above the screened lid by about 6 inches. This allows you to clean the screen without taking the downspout apart. Fit your overflow line so that it discharges no less than 6 feet from your home. Attach your hose to the tap on the barrel and you are ready to go. If you intend to have more than one barrel and want to use them for irrigation you can raise barrels by building frames under them and filling them with gravel. I saw one home recently where they carefully connected three barrels together so they could water their vegetable garden.

If you are serious about rainwater harvesting there are a number of companies that offer packages for above and below



ground collection systems. One Canadian company is called Bushman. They have an extensive lineup of systems. Their basic package includes a tank that sits flush against the home, strainer and cover with all the necessary fittings. Go to

www.bushmancanada.com it's a very good website. If you

have the space and want to create a dual use you can go to the **next step. Four years ago I dug trenches for 6" underground pipes to connect all of our home eve trough. They drain to a collector pond that uses a solar pumping system for irrigation of our gardens. The Big "O" pipe, connections and the solar pumping system cost us less than \$2000.00 and should last for over 20 years. The pond is now a relaxing garden feature, situated amongst an acre of natural landscape.**

You will be surprised how much water you will collect. A millimeter of rain falling upon a square metre of your roof equates into one litre of water, two or three good spring rains will easily fill an average rain barrel depending upon its location.



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