GREEN TECH THE SERIES COLUMN FOR AUGUST 10, 2016
HEADLINE: HOW TO BUILD AN ENERGY EFFICIENT HOME: PART THREE

May I first say “Thanks” to the greater than average number of readers who wrote me on this series! Some asked very specific questions that I have answered directly and I will continue to do so, this being the third of a four part series. This week, we cover water conservation.

Water and the rapidly declining reserves of this precious commodity have been on the radar within the green community for some years now. World Health Authorities stated in a recent press release that over 2.5 billion people on this planet lack fresh water for at least a month a year. By 2050, this figure will double to over 5 billion people. One American sustainable think tank went so far as to say the next world conflict will not be religious; it will be over water. California, whose citizens have suffered through a drought since 2014, the worst on record, people are now drilling wells so deep that it is estimated that this water they are recovering is upwards of 20,000 years old. With the sheer volume of people on the plant, we simply won’t have enough water if we continue to use it at the rate we now do. An average Canadian family of four, it is estimated, uses up 200 gallons of water daily.

It is safe to say that nearly every homeowner understands that reduction of actual water usage by way of low flush or dual flush toilets, low flow shower heads and taps, water reduction clothes washers and dishwashers are here now and accepted as the norm in most homes. Where we have not made the step is how we can reuse this 200 gallons a day, or at least significantly reduce this usage. A column some weeks ago was on water conservation methods and one reader commented that this technology is simply too “far-fetched” for most homes and well beyond most budgets. Here I beg to differ. There are three systems that can reduce a home water use by at least a third and, coupled with containment of the excess grey water, it can be reduced by well over 2/3 from the initial fresh water use. All of this could be installed in a new or majorly renovated home for under $5,000.00. When you look at the payback period, which I am comfortable would be under 10 years, all of this technology is viable.

My first recommendation is to install a grey water recycling unit like the one manufactured here in Ontario by the folks at “Recover” residential water recycling system. We have one of these units in our B&B/Spa and it has operated successfully for nearly a year now. Only recently did it develop a glitch and the

Recover folks stepped up immediately, providing excellent tech support and replacement parts. The standard setup is to have the showers drain to the unit, where the water is treated and then used in the toilets. They have found that, in most residential installations, this provides a good balance. We added our sinks due to the advanced water restriction taps we used; they reduce the water usage significantly. Toilets have the largest single water usage in most homes. The "Recover" unit will discharge any excess water from its tank if the supply outstrips the containment within the unit. We setup a bypass drain system so that, in the summer, this excess water goes to an external storage tank that allows us to use this water for our lawn and trees. The folks at "Recover" expected we would recycle at least a third of our fresh water. I feel that is a conservative estimate and is likely closer to 50%. We also capture 100% of the water off the roof of our spa. This water is also used for landscape work. We are on a well, making this type of conservation a sustainable use of our well. The last time I checked, the "Recover" units were retailing in the $3,000.00 range.

The other option, at a significantly lower cost, is to reduce toilet water usage by recycling the water from your sink to the toilet and there are a number of companies offering these compact grey water toilet systems. If you have a vanity in your bathroom, as most homes do, these units are a slick, simple to install package. One of these systems is made in the USA by Sloan and can be bought on the internet for around $400.00 USD plus shipping. Sloan estimates their unit can save upwards of 6,000 gallons of water a year.

The third item is called a drain water heat recovery unit. This passive unit will not save you any water. Rather it uses the heat that you have paid for to bring your water to temperature, by reclaiming some of this heat. The folks at "Watercycles" state the benefits of these installations very well. "Water is the most expensive natural element to heat and carries a significant amount of energy. Any hot water that goes down the drain carries energy with it. That's typically 80-90% of the energy used to heat the water in the home. Drain water heat recover systems capture this energy to preheat cold water entering your water heating appliance." They retail for under a $1,000.00 CDN and, as long as you have a vertical main drain that can accommodate one of these units, you are all set. There are no moving parts, these units simply and efficiently capture a portion of the heat and reduce your energy bills for hot water.

As I stated, for around $5,000.00 you can retrofit your home and significantly reduce your water usage. Any reader who would like to see our system in operation and are prepared for a drive to see us, is welcome to see first-hand how

they can make a difference. Next week, is the last in this series. We will cover non-toxic materials and how to design and operate the functions within your sustainable home.

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