

GREEN TECH THE SERIES COLUMN FOR SEPTEMBER 23, 2015
HEADLINE: HOW & WHY OF PHANTOM LOADS

If you have been following this column, you know we are in the final stages of renovations and a new build to house a unique B&B/Spa; one which has been built following guidelines for the Passive House Movement, by far the most comprehensive assembly method available today. Included in the design is the use of solar powered exterior lighting and LED lighting on the interior. Yet to come is the use of interior motion sensors for lights.

One thing we have avoided in our effort is anything that uses “Standby Power,” “Vampire Power,” “Leaking Electricity” or, the most common term, “Phantom Loads.” For some time, I’ve wondered if the claim that 15% of electrical power is wasted due to phantom loads was really true, since too many “Green” ideas ride the wave of environmental change and not all are what they are cracked up to be.

It does seem, however, that there is some considerable truth to this claim. As we hunt for wasted electricity, the problem of Phantom Loads has, indeed, surfaced as a major problem.

So, what exactly is a Phantom Load? Simply put, it’s the wasted electricity that is used for the instant-on feature of your TV and the power that your charger is using even when it’s not powering up your cell phone or flashlight and items like your cordless phone or computer. A US study brought to light some interesting facts. In 1998, it was estimated that the phantom load use was equal to 5% of all the power used in the US. By 2004, this had doubled to 10%, amounting to about three billion dollars of wasted power, annually. Back in 2001, the US government had recognized this issue and mandated that any office equipment purchased must have less than one watt in standby reserve. Canada’s percentage of wasted power is nearly identical to our southern neighbors and Canadian appliances, in standby mode, are eating up power at the rate of 6.3 billion...yes billion, KWH, annually. If we could save 80% of this, it equates into the residential consumption for the province of New Brunswick.

The City of Edmonton set up a program a few years ago called “Green Edmonton” where they offered the use of Electronic Energy Meters through the libraries; you could borrow them like a book. These power meters actually show you how much electricity you are wasting while your electronic devices are off. You can buy these at most big box stores for about \$25.00. Their web site, www.greenedmonton.ca, has the full story of how much electricity and the amount of coal in kilograms is used to produce this wasted power.

How do we fix this issue, while still having some of the “creature comforts” we now enjoy? The first step is to look really hard at the kind of home office and entertainment equipment we use. Most are now Energy Star rated for electrical consumption. If you check these, you will find that some use nearly 50% less standby energy. I had long thought that computers were amongst the largest “power hogs” in standby. The screen saver feature eats up nearly as much

electricity as if you had the computer running. The list of home conveniences that are quietly drawing tiny amounts of power include your DVD player, game console, cable or satellite box or audio system. Some of the game box consoles consume up to 185 watts of standby power. That's like leaving two incandescent lights on 24 hours a day. Recently, I was shown how the new large flat screen TV's are overtaking computers for wasted power.

There is a concept called the "Green Plug" wall switching program. In the case of a new home or a major renovation, electricians can recommend installing a designated circuit that is located in the areas of a home where computers and entertainment equipment may be located. The plugs wired to this wall switch are painted green. When you go to bed or leave for any length of time, you simply turn this switch off and it cuts the power to the major part of your "Phantom Load." Because this is a manual system, it requires the homeowner to remember to shut it off each night. Another product that has been popular in commercial installations for over 10 years and is rapidly gaining popularity in the residential market, it's called an "Occupancy Sensor" and, within the past 2-3 years, the prices have dropped dramatically.

What is an Occupancy Sensor? In basic terms, it is a motion activated control, inserted where you have a wall switch that operates lighting and wall plugs. They are designed so that when a person enters the room the lights and, possibly the plugs, would become activated. The earlier units were infrared and had limitations. People found them shutting off while they were still in the room, for example. The new units are ultrasonic and are much better. I know of one case they installed one in a bathroom with a veined glass shower door. When the person entered the shower an infrared unit would have lost the sensory ability to shut the lights off, but the ultrasonic unit worked great.

The other option is low voltage, timed controls that can be retrofitted to a wall switch. This allows the time for the plugs to come on and off to be preset. I have seen a number of novel ideas in homes where the "Phantom Load" issue is recognized. In one home, the owner had the electrician wire all the duplexes in each room with the top plug to the light switch and the bottom plug remained live. This was popular some time ago when ceiling lights went out of style. In this case, all the plugs in the room with the equipment that generated phantom load were plugged into the top plug. This allowed table lamps, clock radios or light timers to remain in use.

Now that we recognize the advantages of the new LED light bulbs, as a next step reducing the "Phantom Load" in every home should become the next major energy conservation move. How do we start?....easiest is to buy a good quality power bar with a built-in switch and move all your computer set-ups and entertainment equipment to this device, then remember to turn them off every night or when leaving for any length of time.

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