

The Wellesley Townsman

December 1, 2009

Going from an energy-eater to a green house in Wellesley

By PATRICK RAFTER, Guest Columnist

Wellesley Forum

Original article online at:

<http://www.wickedlocal.com/wellesley/news/opinions/x441561111/Column-Going-from-a-energy-eater-to-a-green-house-in-Wellesley>

Some words I overheard at the Wellesley dump in September stuck in my mind:
“I do a lot for the environment. Every other week I come here to drop off my recyclables.”

That comment made me realize that for many in town dropping off empty wine bottles and sorting aluminum from tin cans at the RDF constitutes being “green.” To interest some of you in doing the same, let me share our family’s effort to bring the issue of climate control closer to home--- literally.

According to the U.S. Energy Information Administration (EIA), housing contributes 18% of the total greenhouse gas emissions in our country. As you might guess--the quantity of greenhouse gases (carbon dioxide (CO₂), methane, nitrous oxide, various carbons and sulfurs) that any given house emits into the atmosphere is mostly a function of how much energy it consumes.

Beyond my desire to “do good,” as the owner of a drafty 70 yr old Wellesley Hills colonial who cringes when I see my oil and utility bills--I decided to find an expert who could help our family determine how much energy our house was using and wasting, and what could be done to reduce that amount.

After consulting with a half-dozen of my neighbors—we found a great resource in a Massachusetts company called [Woodmeister Master Builders](http://www.woodmeister.com) (www.woodmeister.com). While I had first learned of Woodmeister having visited several gorgeous new homes they’d built for friends in Wellesley and Weston—it impressed me to find out that the company has a Chief Sustainability Officer who was active in creating the new [National Green Building Standard](#) for residential construction. The NGBS encourages homeowners to make smart green choices based on energy efficiency, climate and geography as well as style preferences and budget.

My next step was to contact Woodmeister’s Rational Sustainability team which works with homeowners to build and re-hab residences to make them more energy efficient, healthier, more comfortable, and environmentally responsible.

A crew from Woodmeister recently spent an entire day at our house conducting a *Home Energy Analysis* to determine areas of energy loss, suggest strategies to reduce heating and cooling costs, improve our home’s indoor comfort and air quality, and reduce its carbon emissions.

Here's what is included in a Home Energy Analysis:

Preliminary Safety Checks:

Test for carbon monoxide in the heating system, visually inspect for asbestos, knob and tube wiring, and mold and mildew in the attic and basement areas; and check for satisfactory ventilation in the attic, bathrooms, and dryer.



Technician checking carbon dioxide level and efficiency of oil furnace

Locate air leaks

Using an infrared camera, along with a calibrated [blower door](#) fan, pressure - sensing device and smoke stick, the team locates air leaks throughout the house. A blower door is a powerful fan that mounts into an exterior doorframe. The fan pulls air out of the house, lowering the air pressure inside. The higher outside air pressure then flows in through all unsealed cracks and openings. Using a blower door, the technicians can quantify air flow, pinpoint specific leaks—then track the location and quantity of heat loss.

Fix the leaks

Based on the results of the testing and with our permission, the Woodmeister team set to work – to seal leaks around exterior doors and windows; seal pipe and wire penetrations in the basement; close gaps in the attic walls, roof, and floor; insulate hot water pipes and wrapping heating ducts.



Sealing air leaks by blowing foam into leaky space

Plan for Next Steps

Shortly after the Analysis, Woodmeister reviewed with us a detailed report summarizing an assessment of the efficiency of our house, and detailing initial fixes they implemented during the analysis--with associated projected benefits, estimated energy bill savings, and CO2 reductions. What I found especially interesting in the report was a listing of recommended future remediations, which we plan to do in the near future:

1) Wall Insulation – Like many pre-World War II houses in Wellesley, our house was built with no wall insulation. Blowing cellulose insulation through the clapboard siding of our house will reduce heat losses.

2) Install a programmable thermostat (automatically turns heat up or down at appropriate times of the day) will save an estimated \$237/yr just by lowering the temperature 6 degrees for eight hours per day.

3) Insulate our attic roof with open cell spray foam to reduce air leakage.

4) Insulating our basement steam pipes will help reduce the heat gains on the first floor and balance the heating system better.

Through these small steps alone, Woodmeister projects we'll save more than \$1,000/yr in energy costs, and lower our carbon footprint by reducing the amount of carbon dioxide our house emits by 3.93 tons a year. That's the equivalent of driving 6,601 car miles!

Fellow residents: if any of you are considering remodeling or an addition to your home, or even just want to save some money on your energy bills—I can recommend connecting with an eco-minded contractor like Woodmeister to turn your old house into a green house.

Patrick Rafter lives in Wellesley.

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