

GREEN TECH THE SERIES COLUMN FOR SEPTEMBER 21, 2016
HEADLINE: "MAKING A VICTORY HOME GREENER"

Recently, I had a number of questions from homeowners who live in what we know as the "Victory" homes. Also known as "war houses," these kit homes were built by the hundreds all over Canada, shortly after WW2. They were usually a single storey or a storey and a half building on a footprint of around a 1000 sq. ft. The design was very popular on both sides of the border, actually, as our US friends also had entire subdivisions and one entire town, from what I can recall. Many had a low basement or crawl space, where the furnace and hot water tank was located. The foundations were concrete block and they absorbed water like a sponge. They were often damp for weeks and months on end. The design of the homes was simple; they were prefab sections bolted together that made up the floor, walls and roof. I have heard that a skilled crew could start in the morning, bolting the wall sections together from the foundation prepared the day before. By night fall, they could be installing the roof shingles

With assembly this fast and zero attention to air loss, the fact that basements were damp was not an issue. The whole house leaked air and, with this sort of natural air exchange, air quality and any accompanying health issues were rare from what we know now.

While many of these homes were ignored for years, others have had additions and second floors added, usually also with minimal attention to air loss. Within the past few years, homebuyers have been buying them for retirement. As well, single professionals, who want a reasonably priced city residence, have shown interest. The majority of these homes are now inside the main residential areas of most cities, where regular services, such as transit, are now well established.

A common question I receive is, "where do I start in improving the energy costs of these homes?" You will make a major difference if you remove the original siding, install insulated rigid foam board and then add new siding. This will significantly reduce the thermal loss in the building.

By design, the window openings were very rudimentary and air leakage was excessive, to say the least. Window upgrading makes sense and this step is best done in conjunction with the siding replacement. You can expect to budget anywhere from \$8000.00 to \$15,000.00 for good EnergyStar rated double glazed fibreglass insert casement windows for the main level and sliders for the basement. This budget amount should also replace both front and back door.

Buying windows can be very confusing, get three quotes and compare energy value.

The next step is to address the basement. This is one area where you must address any moisture issues, since you have now reduced the air exchange in the home significantly. This upgrade can range from better grades around the home, to new or improved eavestrough and downspouts, to actual excavation of the foundation and installation of a foundation membrane, as well as a proper below grade drainage system. Ensuring the basement is dry is paramount in the overall health of the indoor air quality of the home.

If the basement is unfinished, use either rigid foam board like SM or closed 2 lb. spray foam. Installed by a professional contractor this application provides both insulation and air barrier in one application. I have used closed cell spray foam in numerous older home projects and prefer “polar Foam” for its formula and for the fact that it’s made in Canada.

My next recommendation may surprise some readers. Get rid of the carpets and old flooring. Many of the early homes had sawn lumber for subfloor, though later on they were plywood. This subfloor has seen years of dampness. Once the carpets and older “vinyl” flooring, which is actually a paper composition material, are removed, check the subfloor for decay. Install a proper underlay and then consider using engineered hardwood flooring. These floors are very durable, not as affected by dampness and easy to clean. If you are lucky to have one of the later models, some had “ribbon strip” oak flooring installed. You should be able to get this floor sanded and refinished for under \$5000.00. If you rent the sander and do it yourself, a company called AMF has developed a durable water based clear gloss finish with very high solids level and low VOC content; one of the few that is Green Cross Certified. With these actions, you have just made a major step forward in indoor air quality.

By now, you will have also added attic insulation and done what you can with respect to weather-stripping and caulking. Suggestion number four is to, just before the siding is installed, get a thermal audit done by a certified thermal imaging technician. The design of these Victory homes creates different air leakage locations than in a platform frame home, locations that only a thermal audit can find. Modern thermography measures surface temperature, these cameras see light in the heat spectrum and record these temperature variations. In the hands of a skilled and experienced technician an indoor scan, which is usually the most effective, will point out the areas of air leakage that still need to be corrected.

My last recommendation is to get your heat ducts cleaned. Now that you have improved the energy efficiency and reduced the air loss, all those contaminants that were not an issue, could become one. Most of the reputable duct cleaning companies charge by the number of floor registers. Ask if they have the equipment that actually “scrubs” the inside of your main duct run. You can expect to pay in the \$250.00 to \$500.00 range for a professional cleaning. This is the last step, once the renovations are done.

I strongly support making existing homes “sustainable.” While building new homes to energy efficiency is great, we have millions of older homes contributing to the nearly 20% greenhouse gas issue. This needs correcting and these measures will go a long way toward that.

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