

ASK THE INSPECTOR COLUMN FOR NOVEMBER 4, 2015
HEADLINE: "WAR HOME" INSULATION TIPS

Every fall I get a steady stream of questions on insulation and for some unknown reason we have done a number of inspections on "War Homes" recently where that question came up. The housing between Victoria and Division Streets, north of Concession Street, has the largest number of these homes in Kingston.

Let's start with a little background; the term, "War Home," was derived from the massive building boom that happened in Canada after World War Two. In fact, the proper term was "Victory Home." Nearly a million of these 1½ storey homes were built all over Canada to house our returning soldiers, sailors and airmen, a number of whom brought wives back with them from England and other countries - hence the term, "War Bride." The majority of these homes were basic in assembly, with a footprint rarely over 1000-1200 sq. ft. The earliest homes were actually a kit, assembled off site and trucked to the subdivision. A crawl space was excavated, a rough footing poured and concrete blocks were set to the height required. The floors were a framework that was bolted together. At the outset, there were only a couple of floor plans. To give the appearance of different layouts, often the floor layout would be reversed. The second level was usually 2 bedrooms and the main floor the living area. To cut down on plumbing, the bathroom was midway on the main level, with the kitchen cabinets backed to the wall behind the bathroom sink. The walls arrived as part of the kit and were nailed together on-site.

The roof rafters were a pre-assembled frame to be bolted together similar to the floor frame. I have heard stories from retired contractors that these kits could be dropped off at the site when the perimeter foundation was ready and the house framework was finished within one day.

The walls and attic usually contained bag style, batt insulation, which had a factor of R-12; today we look for a minimum of R20 in a renovation. The attic should be a minimum of R32 and we often see R-40 or higher. Single glazed windows with storms were used at the outset and double-glazed, which meant two panes of glass in a wood or plastic track, came along in the early 50's. Foundations, where a full basement was practical or required, were rarely insulated. Most of the early homes were assembled on a shallow crawl space.

Our most recent clients, who were first time buyers, bought this particular Victory Home, one that had been in the original family since the war. Getting a home of this era that has not seen repeated renovations is rare today. It is surprising how much you can do on a limited budget, and our reader can systematically upgrade to attain maximum benefits. As a general rule, 25% of heat loss is through windows and doors. A tube of good caulking will cover an average of 50 feet at a cost of \$5 to \$10, per tube. Take the time to remove any old caulking around the windows and doors before resealing them. As well, take a close look at the weather-stripping around the exterior doors. The tubular vinyl weather-stripping is the most effective in an older home.

This home had a basement, so I suggested they carefully caulk the area between the wood plates that rest on the concrete blocks, since this area is known for air leakage. Once this is done, using a hand saw, gloves, glasses and a mask, along with long sleeve clothing, they should carefully cut and fill the area between the floor frame and outside

wall on top of the concrete blocks with bags of R-12 batt insulation. Next year they hope the budget permits insulating the basement walls.

The vast majority of these 1.5 storey homes have some paper-covered insulation in the floor area behind the knee walls on the second level. Similar insulation may also be found in the attic. It was common for there to be no insulation in the knee wall, however, though I have seen the rafters filled with cardboard, which is not recommended today. The area behind the knee walls are, in fact, tiny attics and should be treated as such. With that in mind, I suggest filling the knee wall rafter areas with R-12 batts. To support the insulation in the walls, cut some wide strips of plastic from the bags the insulation is packaged in and staple these strips across the framework.

Since our reader would like to use the space behind the knee walls for storage - these homes lacked storage space - I suggested they add strips of wood to the floor frame, sized to a thickness that makes the floor frame 6 inches deep. After measuring for square feet here and in the attic, the local building supply dealer can tell them how much cellulose loose fill insulation to purchase. Back home, the cellulose is poured into the floor space between the raised frame-work. The new insulation value will be close to R-20. Care should be taken not to fill the area between the roof rafter framework and the roof decking. Plywood can be added to form a floor for the storage area. When buying the loose fill cellulose - it costs less than \$10.00 bag - a box of baffles can be purchased. These semi rigid Styrofoam vents should be fitted between the rafters. Any access doors should be insulated by attaching a 2" piece of rigid foam insulation to the access door. Fitting the frame with weather-stripping will help keep the cold out.

Going to the attic, pour in the balance of cellulose and, again using proper masks and clothing, spread this material overtop of the existing batt bags. Before you add this loose fill insulation, however, insert foam baffles into the rafter space, just as was done in the knee walls. Slide these down as far into the rafter cavity as you can. If they show through into the knee wall space.... great. If there is any batt insulation in this rafter cavity, try and get the baffles to fit between the roof decking and the old insulation. This will, hopefully, allow some airflow from the soffit, if they are opened at all. Since most of these homes lacked passive air flow at the soffits, these baffles will allow any air flow in the knee wall areas to continue upwards through the roof vents. Try to add enough cellulose to increase the attic thickness to just under a foot of insulation. When weather permits, adding a "mushroom" vent midway up the roof will help to vent the knee wall "attics."

One last thought. Considering our reader's home has the older double glazed slider windows, as a temporary measure, I suggest the installation of one-time plastic interior storm windows. These are very effective and will get them by until new windows fit the budget. I estimate the total cost for materials here to be less than \$800. Even with the "sweat labour" added in, this young couple will reap substantial savings in heating costs this winter and for many winters to come.

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