

The economics of energy efficiency

There is an economic factor in virtually every decision you make about home energy management, from undertaking such simple measures as caulking and weatherstripping to buying a new, super energy-efficient dwelling. Careful consideration of the facts and of your own circumstances should enable you to make wise judgments that will benefit you financially long into the future.

R-2000: no guesswork

If you are in the market for a new home, you can remove the guesswork on the energy factor by limiting your search to super energy-efficient dwellings, such as an R-2000 home. There are now more than 2,700 R-2000 homes across Canada.

R-2000 homes render improved comfort, immediate cost savings and long-term security against rising energy prices. Buyers are therefore assured of maximum energy efficiency and increased comfort from day one.

Although an R-2000 home costs five to 10 per cent more than a comparable conventional dwelling, its energy requirements will be considerably less, resulting in lower overall ownership costs, and savings that grow year after year. Compared with conventional homes of the same design and floor space R-2000 homes have achieved reductions of more than 50 per cent in the energy needed for space heating. That translates into a 50 per cent reduction in your heating costs.

In fact, these energy cost savings may help you to afford a higher-

priced home. That is because many financial institutions are willing to include energy costs in the equation for mortgage approvals.

When determining whether or not they can afford a particular home, many buyers take into account only the principal, interest and taxes (the PIT formula used by many mortgage companies) involved in the purchase. However, energy costs are also an important factor. To fairly evaluate trade-offs between purchase and operating costs, the PITE equation was developed: principal, interest, taxes and energy or operating costs.

PITE represents the total cost of a home. By including operating costs in the budget when pricing a home, the equation takes into account the impact of seasonally variable costs.

When the PITE equation is used, the benefits of an R-2000 home's lower heating and cooling costs become obvious. Monthly payments remain consistent because energy costs are calculated in advance.

Using PITE, some Canadian lending institutions are now allowing buyers of R-2000 homes to put up to 32 per cent of their monthly income into a mortgage, instead of the usual cut-off of 30 per cent. The result is a higher debt service and more flexibility in home size and design. As well, although an R-2000 home may cost more, PITE payments per month will be consistent with those of a conventional home beginning sometime between the third and fifth year.

R-2000 homes are also sound investments because of their high-

quality construction. R-2000 standards far exceed even the toughest provincial construction codes, and the attention to detail needed to build these homes results in a superior product with an excellent resale value.

Retrofitting an existing house

R-2000 technology offers some obvious and immediate energy benefits, but that doesn't mean you should put your existing home up for sale. You can conserve energy, save money and protect your investment through such home "retrofit" measures as upgrading windows or adding insulation. These measures can be an effective buffer against future energy cost increases, as well as a means of increasing the value of your house.

Retrofit measures such as air sealing, new windows, insulation in the attic and upgraded wall insulation add up to energy savings in the home. But before undertaking any of these measures, it is important to weigh the benefits against the costs and to develop a list of priorities for energy conservation projects. For example, replacing faulty windows with more energy-efficient ones will improve the comfort and value of your home. However, from an energy efficiency standpoint, less expensive activities such as caulking and weatherstripping may have shorter payback periods.

Hard questions must also be asked about upgrading insulation, which is generally regarded as one of the most effective conservation meas-

ures available to homeowners. For example, while many homeowners think they can reduce their energy costs by adding insulation to the attic, the question remains as to how much insulation should be added before the costs begin to outweigh the benefits.

When considering insulation in any area of your home, many variables must be taken into account; for example, the existing levels of insulation; the cost of the additional insulation materials and installation; the cost of energy; interest rates if you have to borrow money for the project; the efficiency of the heating equipment; the life expectancy of the building; and the climatic conditions in your area.

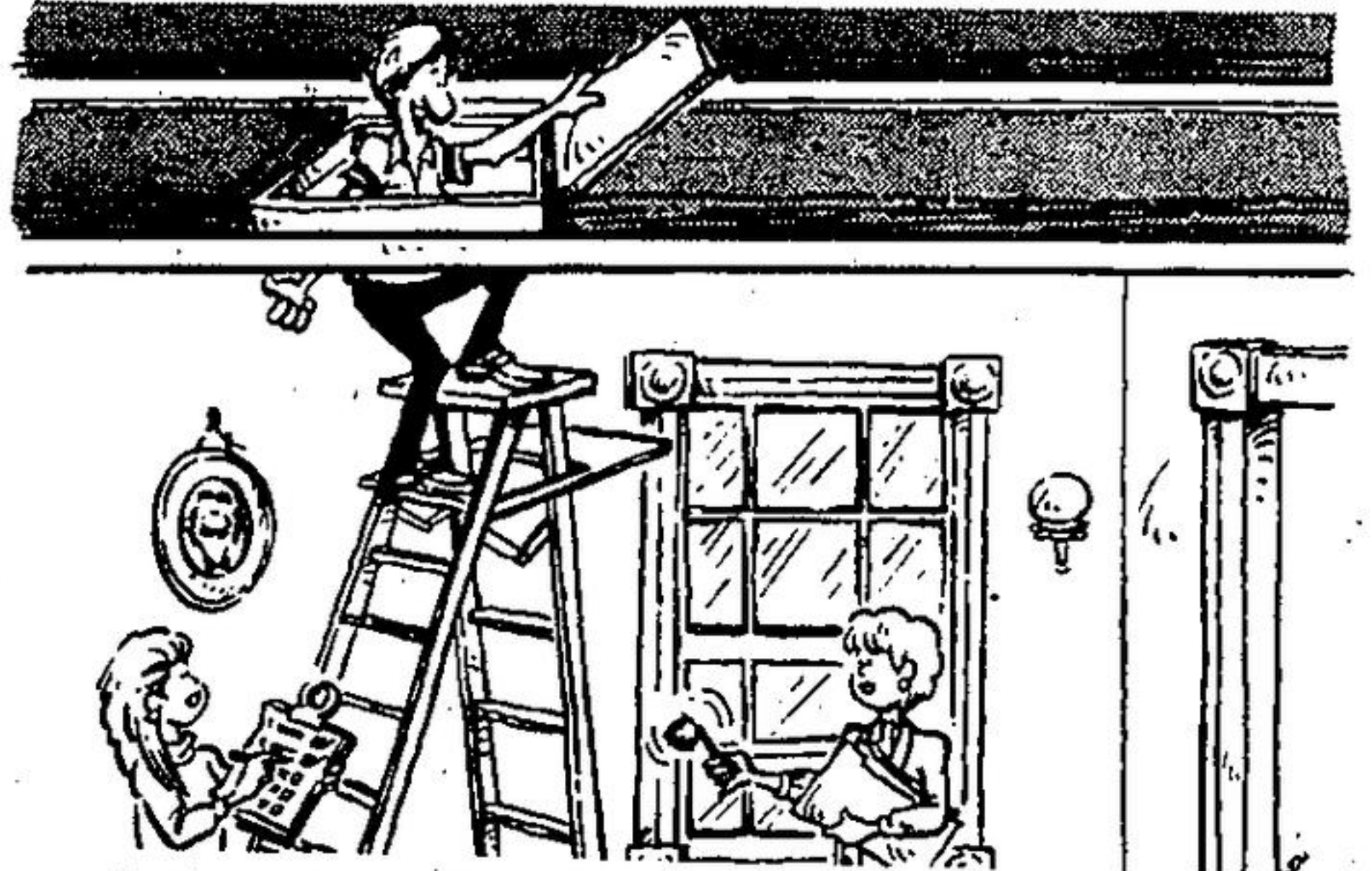
All of these factors will have an impact on the payback period for the project. If you determine that payback will be quick (three or four years), the project is worthwhile. On the other hand, if you do not anticipate recovering your costs for 15 or 20 years, you should seriously question the investment.

One project that offers good payback is the installation of an automatic setback thermostat. This

device can be programmed to raise and lower the thermostat setting in your home at specific times each day. For every degree Celsius you lower your thermostat setting below 20°C over a 24-hour period, you can reduce your space heating costs by about five per cent.

Many renovation projects provide an excellent opportunity to add insulation and improve the energy efficiency of your home at a small incremental cost. Look for opportunities for "piggyback" conservation when undertaking projects such as finishing your basement, sealing foundation walls from the outside, installing siding, or remodelling a kitchen or bathroom.

The message to homeowners and potential home buyers is clear: energy costs are an expensive fact of life in Canada today, and they will become even more so when world oil prices rebound. But energy costs in the home can be minimized. After carefully weighing the benefits against the costs, more and more Canadians are coming to the conclusion that home energy conservation represents a sound investment for the future.



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