

## **Retrofitting your house for energy efficiency**

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We cannot make the transition away from fossil fuels as our main source of energy, unless we use energy much more efficiently. Vermont has many old houses, and we need to reduce the amount of energy needed in winter to heat them. Old houses lose heat in three ways.

- 1) They are leaky and drafty with cold air blowing in around windows, through walls and basements. Often the air in an old house is replaced by cold outside air several times an hour, and the furnace keeps burning to reheat it. So step one is to seal leaks and windows. An energy audit will pressurize your house and find those leaks. Yes, this is painstaking work, but it is worth it: in comfort, money, and walking more lightly on this earth. Your payback will be swift.
- 2) Warm air rises and heat escapes through your attic and roof. If the snow melts off your roof or you have ice dams, put a lot more insulation in your attic. Consult someone to explain where to put a vapor barrier, if you don't know. If you can add more insulation in your attic or roof, the savings on your heating bill will pay for the materials in a very few years. If there is no insulation in your walls, you can have it blown in. In general though, walls need to be built with better sealing and insulation in the first place; so do it if you renovate.
- 3) As much as ten times as much heat escapes from each square foot of window than each square foot of insulated wall. Replacing old single-glaze windows with double glaze will halve the energy loss; and now you can get gas-filled thermopane windows with coated glass, which will reduce the energy loss much more. Yes, replacing windows is more costly than adding insulation to the attic, so get advice on tax rebates, and energy efficiency loans. You are likely to find that the savings on fuel costs will make the payments on the loan, and your old house will be more comfortable – for another century.