



## ENERGY FOCUS

### Things to Look for in an Energy-Efficient House

#### By CCHRC Staff

Shopping for a home in Fairbanks can be difficult, especially if energy efficiency is a priority. With heating oil prices volatile and resale value at stake, finding the most fuel-efficient home makes sense. An efficient home also has the advantage of helping to alleviate Fairbanks's air quality problems, which are particularly bad in winter.

Following is a list of just some of the things you should look for in an efficient home.

#### Site Location

- Due to sunlight, homes situated on south-facing slopes will be warmer in the winter and therefore consume less energy for heat than comparable homes that are on north-facing slopes or obscured by dense tree canopies. Deciduous trees, such as Alaska birch, are desirable because they lose their leaves in winter and allow sunlight to shine through.
- Ideally, homes should be situated lengthwise east to west in order to take advantage of the sun.
- Protection from wind, provided by trees or hills, will help to conserve heat in winter. Low-lying evergreens or shrubs placed on the sides of a house that are exposed to wind will also help conserve heat.
- Using the ground itself as a barrier against cold is a great way to moderate heat loss. Houses that are partially covered by earth or use other natural features of the landscape to insulate against heat loss are desirable.

#### Design

- The overall shape of the house will affect its heat loss due to the amount of wall space exposed to the elements. L-shaped, H-shaped, or U-shaped homes, for example, will tend to lose more heat than rectangular homes.
- Houses that share common walls with other structures, such as townhomes, lose less heat than detached homes.

- Arctic entryways that are sealed from the outside and the inside living areas by separate doors help to retain heat.
- South-facing windows are preferable to windows on any other axis, due to their ability to collect sunlight and minimize heat loss.
- Plumbing should be run inside heated or indirectly heated areas and consolidated as much as is practical. Sinks, baths, and laundry should be close to the water heater to minimize standby heat loss or, alternatively, on-demand water heaters can be used.

### **Insulation**

- There's a saying among energy raters in Alaska – “You can't over-insulate, you can only under-ventilate.” When inspecting a house, ask about how much and what kind of insulation is in the floor, walls, and attic. Other than weather-tight construction, no other single factor will affect a home's energy use more than insulation. But insulation without adequate ventilation is an invitation to trouble resulting from moisture problems.
- All gaps and cracks in the house should be well sealed or caulked.
- Doors and windows need effective weather-stripping.

These are just some of the details to be aware of. A more complete list is available by reading UAF Cooperative Extension Service's (CES) publication “Searching the Market for Energy-Saving Homes – A Checklist for Alaska” (EEM-00252). This publication is available for free online at [www.uaf.edu/ces/pubs](http://www.uaf.edu/ces/pubs). Or, check out CCHRCs “Buying an Energy Efficient Home in Fairbanks,” available for pickup at CCHRC.

**Energy Focus articles promote home awareness for the Cooperative Extension Service (CES) and the Cold Climate Housing Research Center (CCHRC). For questions or comments please contact CCHRC at (907) 457-3454**