



COLD CLIMATE HOUSING RESEARCH CENTER

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ENERGY FOCUS

The Importance of Home Orientation

By CCHRC staff

Home orientation is one of the first things to think about when you are going to build a home. Most houses are designed for 'street appeal,' meaning they are designed to give a certain appearance from the street. Others are designed with windows carefully placed to capture a fantastic view. However, in our climate it's important to take into account topography of the property, solar orientation, wind direction, vegetation, shade, and proper drainage.

You may hear a lot about the importance of south-facing windows. In the winter, a home will get more sun from the south. South facing windows can enable passive solar to provide heat to the home. Many south-facing homes in the Fairbanks North Star Borough see a decrease in fuel usage in late February and March. If your home has a lot of north-facing windows, you are going to lose more heat and gain less heat as well.

If you are on a south slope, and you orient your windows to the southwest, you are going to get the hotter afternoon sun heating your home. If you orient a little more toward the east and the southeast, you'll get the morning sun. These are things you'll have to think about when looking at your site.

Proper orientation is also important if you wish to add solar panels to your home. South-facing panels are going to gather more light, and therefore more power.

Seasonal shading from exterior sources is something else you will want to keep in mind. You don't want as much shade in the winter, but you will in the summer particularly on the south and west side of a home. It's nice to have some vegetation to slow the capture of the solar heat in the summer afternoons.

Wind direction is also important to consider when orienting a house. In some areas, prevailing winds can pile up snow in front of windows and doors. However, orienting your house to shield from the wind is more of a consideration for coastal regions than in interior Alaska.

Before you break ground, observe the drainage features on your property. You will alter that drainage when you start moving dirt. Water will tend to drain in a certain pattern around your home, which can be detrimental to your foundation.

Ideally, when you buy a piece of land, get to know that piece of land before you build on it. Understand where shade will be during the summer. Know where the sun will be at noon in the winter. If you are a morning person and need that morning light, orient your home so that morning light comes in. If you like to entertain in the evening, and you like to go out on your deck, it will be important to face that deck toward the west or the northwest.

Before you begin building, make a list of the ideals you want for your home and compare it with what you can accomplish on the actual site. Get the big picture of how orientation will affect your life in your new home.

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