

In 1981 5524 SW Miles Ct was designed and built as a passive solar home by an architect named Dale Aspevig. This house was built with sustainability and a low carbon footprint in mind before we were talking about these principles. It was often included in solar home tours over the years. The house faces south with a sunroom to capture the sunlight and views of the garden.

The house sits on an 8" thick slab of concrete which rests in a thick foam insulation. This insulated foundation with a small amount of additional mass in the sunroom wall, is the key for temperature regulation of the house. This mass creates a more stable temperature throughout the seasons.

In the winter even on a cloudy day, the light coming into the sunroom captures heat. This heat is stored by radiating into the mass and is supplementing the heat from the gas fireplace. All of the heat introduced into the home, from either source radiates to the mass and is stored there. The thermostat for the gas fireplace turns off the heat as the solar gain occurs. If the solar gain is minimal, the thermostat turns on the fireplace.

During the summer the mass functions as a cool storage and a place for the heat of the day to radiate into. To cool the mass, windows are opened in the evening to allow convection to work for us. In this case, cooler air drops to the floor, and pushes the warmer air out the high clerestory windows upstairs. The mass is now cool and ready to absorb the next days' heat. Shades on the interior can be lowered during the day, and as summer gets hotter, exterior shades are lowered as needed to further reduce the heat gain.

This design works so well that you can stop heating in the spring 6 weeks earlier than traditionally built homes. Likewise, you begin heating with the furnace 6 weeks later in the fall than typical homes. The mass retaining either the heat of winter or the cool of summer allows the house to be very comfortable.