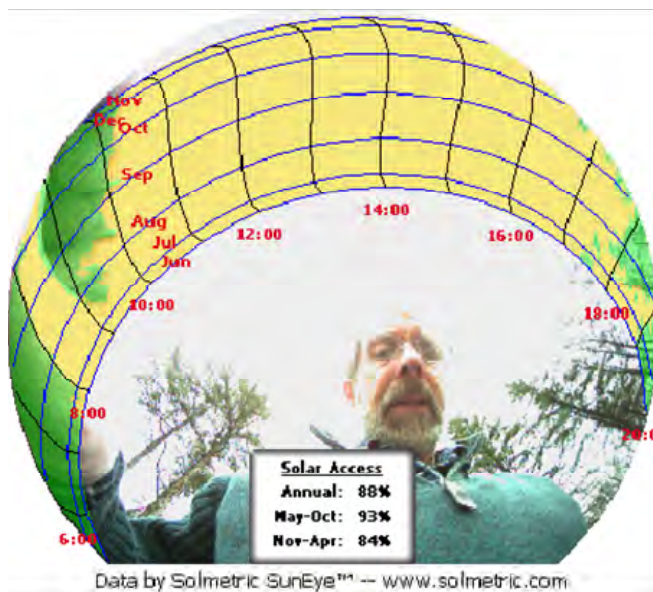
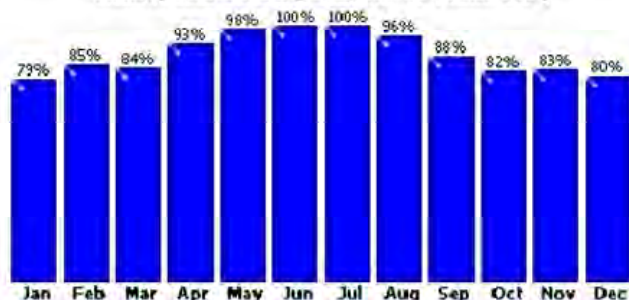


passive solar [building orientation]



Monthly solar access: (Fixed; Tilt=90°; Azim=180°)



Orientation of the house towards true south (magnetic south) enables the home to maximize its capture of solar energy. We “stretched” the house out East-West in order to obtain more south facing exposure and thus allow more of the home to be have access to direct solar energy.

Floor Plan

Originally the floor plan had a number of features that were passive solar “faux-pas”; 1) the gazebo was directly south and blocked sun from entering the dining room, 2) there was a deck off of the living room that blocked all solar energy from entering the basement windows and 3) the south-facing walls were octagonal therein minimizing valuable south face glazing. Luckily we realized our errors early in the design process and were able to easily alter these features.

Trees

When we decided to build a passive solar home in the middle of a forest we anticipated some raised eyebrows. Although the home is not 100% passive solar efficient (as compared to a similar home in an open field), with thought and computer modeling tools we were able to keep the majority of the surrounding mature trees and minimize the site environmental impact.

Solar Survey

Before the excavators showed up we verified the solar potential with a Solmetric SunEye—a solar access and shade device. Readings were taken at the home site and at the PV array site in order to determine the by-month solar access for input into the engineering analysis. These values were important for determining the amount of passive solar energy that would be collected and the size of photovoltaic system required to offset the passive solar.

