

## Huddart House design details

The Huddart home built on nine acres on Hartnell road in Vernon British Columbia. This property is situated approximately 400 meters above the valley floor with incredible views to the west and south west. The design concept of the building was to reduce the northerly exposure and increase the southerly exposure. The design conceptual was done by a local architect Elmo Wolf. Elmo did this by designing the house walls to radiate outward from the north/east end to the south/west end. The floor plan has the north/east width at 30 feet across and the south/west width at 45' across. The roof is an 8/12 pitch and in order to keep the pitch consistent it had to increase in elevation by approximately 10' over the 48' roof ridgeline from the north end to the south end. This concept increased the southerly exposure creating a passive solar heated home.

The next step was to properly position the home on the property. This was done by solar technologist Kerry Parks. What Kerry did was first to assist in the optimum home placement on the nine acres and once that was done he did a solar chart from that position. This chart determined the sun's movement from December 21<sup>st</sup> (shortest day) to June 21<sup>st</sup> (longest day). With the chart we positioned the direction of the house. The chart also assisted in the amount of roof overhang in order to block the summer sun and allow winter exposure.

The third part of the process was to design the windows to allow maximum winter exposure and minimum summer exposure. The east side of the home has a solarium that allows early morning sun to heat the home. These windows are low E style (insulating gas). The solarium floor is slate tiles for mass, this mass heats up during the day and helps to continue to radiate warmth once the sun is gone. The dining room bay plus the French doors on the south side of the building have solar reflective glass. This glass allows low angle sun (winter) to penetrate and high angle sun (summer) to reflect the heat. The dining room floor is also slate for mass additions.

This overall design combined with a well sealed, high insulated structure makes this house very comfortable to live in and extremely efficient to keep warm in the winter and cool in the summer.