TO INSULATING YOUR HOME’S WINDOWS

LOW-COST SOLUTIONS

The space that we decided to study is a living room on the third floor of a multiplex located at 13th and Mill in Eugene. The room has two south and three east facing windows that enable the space to have a stronger connection to the outside environment. This turn-of-the-century building has newly installed double pane vinyl windows. For our study we wanted to determine the heat loss that occurred overnight. We decided to cover the curtainless windows with different textiles that varied in materiality and color. With are findings we wanted to determine an alternative low-cost substitution to standard insulated drapes.

We believe that by adding drapes to all windows in a room that is 35% glazed, we can stop the temperature drop at night by at least 5°F.

**Methods for Testing**

1) Use HOBO devices in outside and inside to gather temperature data when windows are left uncovered (control day).
2) Place different drape materials over windows.
3) Turn heat up to a constant temperature reached at 6pm, then turn off.
4) Measure heat loss from evening until next morning.
5) Collect data graphically to see which materials reduced heat loss the most.

**Ranking (Best to Worst)**

- Space Blanket
- Black Felt
- White Felt
- Sheer Fabric

**Conclusions**

Based on our findings, we determined that the best performing material was the black felt, and it could retain heat by 3 to 4°F. The sheer fabric and space blanket seemed to have reverse effects, that performed even worse than the control day without any window covering. On a cost versus performance comparison based on R-values, no covering is the best deal, yet if there needs to be a cover, the most frugal purchase would be the space blanket.

**Heat Retained with black felt = 3 to 4°F**

**Heat Retained with white felt = 2 to 3°F**

**Heat Retained with space blanket = 2 to 3°F**

**Heat Retained with sheer fabric = 1 to 2°F**