



Simulated energy savings of standard one-color and duplex fabric solar shades

All simulations are set up in the same identical building (a theoretical building set up is used for the purpose of the analysis). This is not a real life evaluation, but only a benchmark analysis in a given simulation of performances, comparing as a variable, the use of solar shading with or without cooling. The test office consists of four external facades, in four orientations (North, East, South, West). Each of the facades are 13.12' x 19.68' x 9.84' (4 m x 6 m x 3 m).

Study Criteria

Fabric: 5% Basket Weave fabric is a charcoal color. 5% Duplex fabric is a charcoal/white color.

Solar shading: The horizon is presumed to be at a vertical level of 5°. No other obstacles or buildings are taken into account.

Glazed surface in facade(s): 50% of the facade total surface.

U-value of glazing: 2.9 W/m²K (i.e. 0.15" (4 mm) glass).

Ventilation: The Landscape Office is ventilated with external air through the whole year. The air change rate is a constant of 1 Volume/hour.

Calculation period: One full year. Average of all four facades.

Base orientation: Average of North, South, East and West facades.

Outdoor climate: Saint Louis, MO.

The light bar on the graph indicates the percentage of savings in air conditioning costs when Duplex fabric is used on the window shades vs. using no window shades at all.

The dark bar on the graph indicates the percentage of savings in air conditioning costs when window shades with standard, one-color Basket Weave fabric are used on the window shades vs. using no window shades at all.

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