

Performance & Weather Jan 22 - Feb 04

Southern exposure only with limited shading is an important factor. *The tests are limited. In particular they do not include glazing on the west, north and east building faces.* As such they may not accurately reflect building envelope performance under optimal control conditions.

Solar panels extending 36" from the building above the windows average 0% shading during Jan.

The weather and temperature information gathered is based on the U.S. Postal Code for the Chicago Center for Green Technology (60612) and sourced through the [WeatherUnderground website](#).

The room is approximately 47 feet wide from east to west. The windows being tested are at opposite ends, approximately 40 feet apart. They are double glazed, wood cased with no films applied or gasses present. The window wells are quite deep. At almost exactly 11" from the inside face of the glass to the face of the shades there is ample room for convection currents.

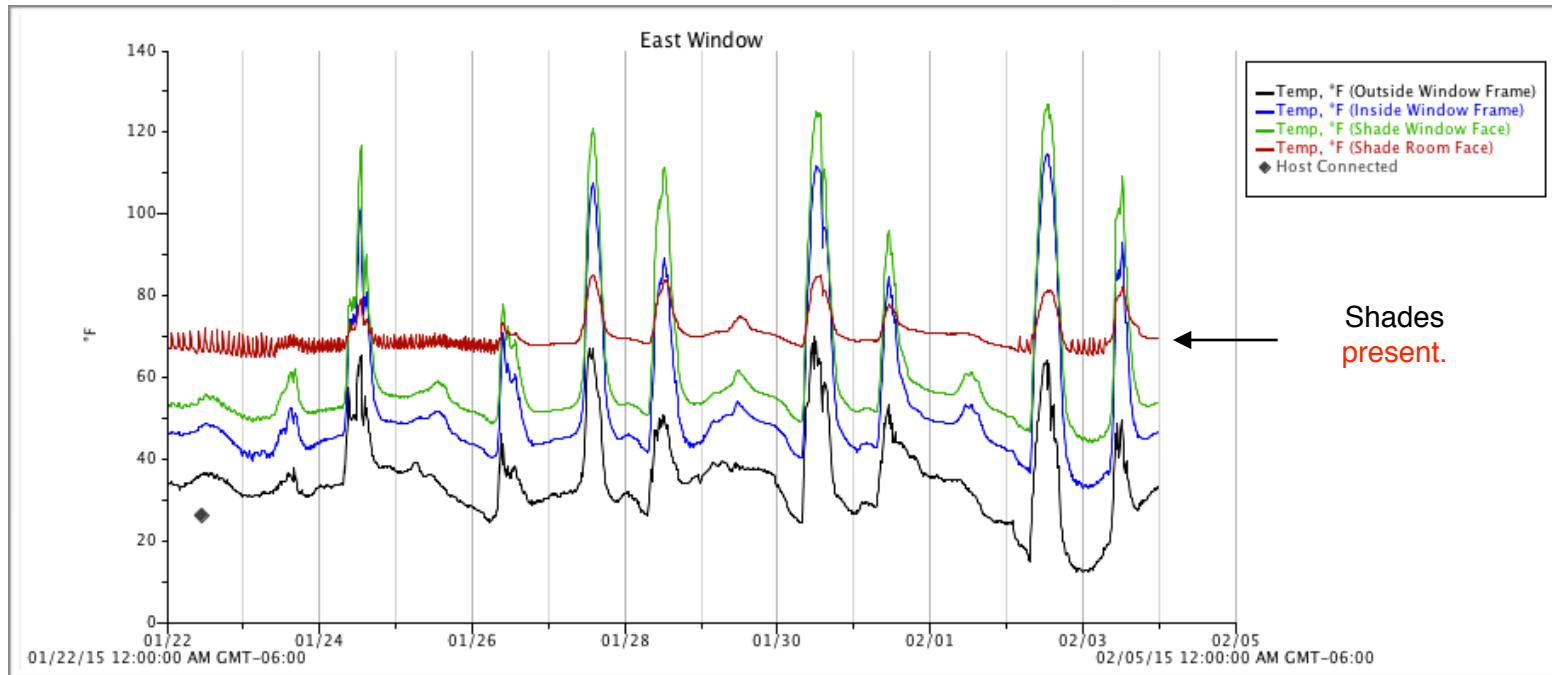
The ceilings are 128" high, there are four HVAC vents equally spaced across the ceiling. Both the vents and ducts are exposed. The thermostat dedicated to the room is on the opposite wall. Daily records of thermostat settings have not been available. It is safe to assume an average setting of 72°F.

High and Low temperatures originate from the graphs below. Temperatures were confirmed and averages were taken from the Onset data spreadsheets.

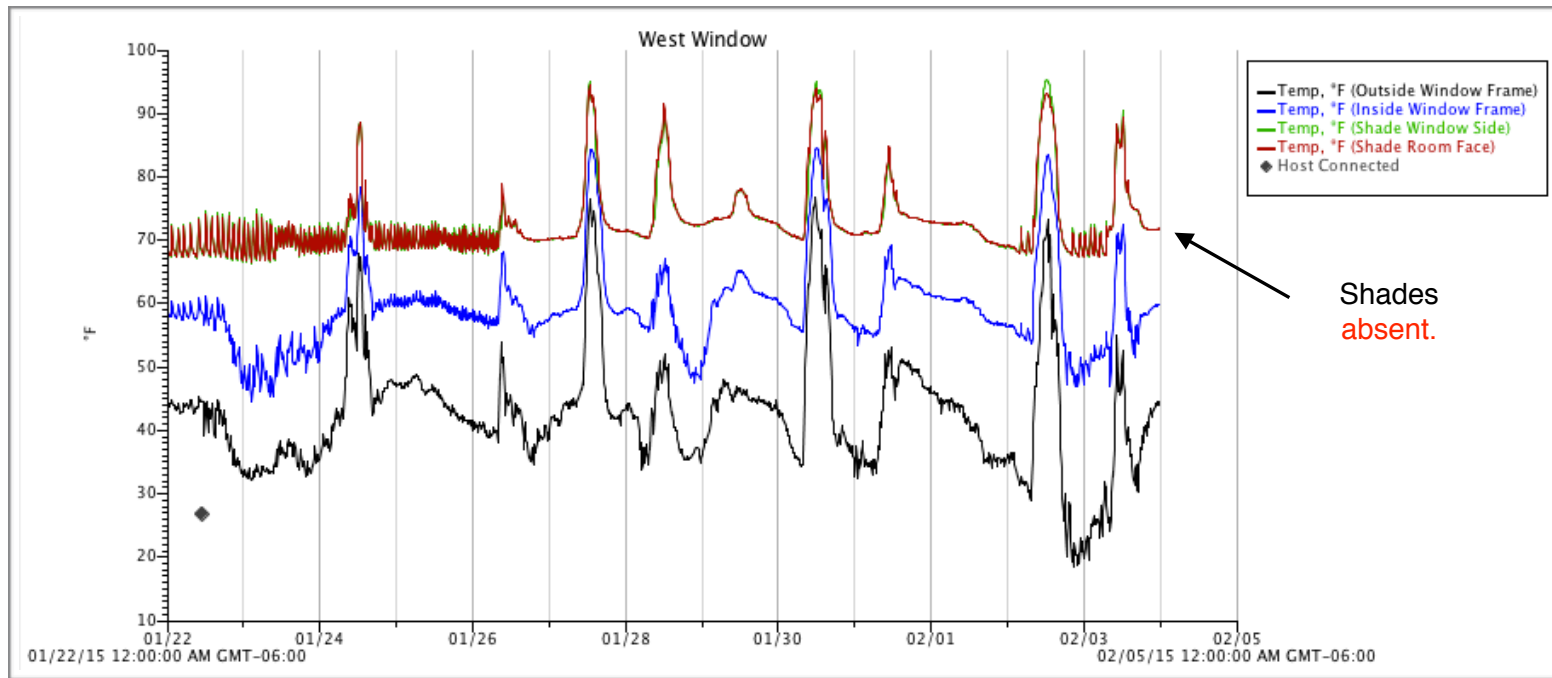
East Windows = Shades **permanently deployed** throughout test period.
West Windows = Shades **permanently raised** throughout test period.

One [Onset](#) data logger and four sensors deployed per window assembly.

Black = outside window frame. **Blue** = inside window frame.
Green = window side face of shade. **Red** = room side face of shade.



East Windows		Averages	Temperature Comparisons
Outside Window Frame (1) (3)	Jan 30 High 70° Feb 03 Low 12°	34.62°	01/30 32° High 23° Low 02/03 30° High 08° Low
Inside Window Frame (4)	Feb 02 High 115° Feb 03 Low 33°	52.58°	02/02 22° High 09° Low 02/03 30° High 08° Low
Window Side Face (4)	Feb 02 High 127° Feb 03 Low 44°	61.13°	02/02 22° High 09° Low 02/03 30° High 08° Low
Room Side Face (3)	Jan 27 High 85° Jan 23 Low 65°	70.41°	01/27 33° High 24° Low 01/23 34° High 30° Low



West Windows

Averages

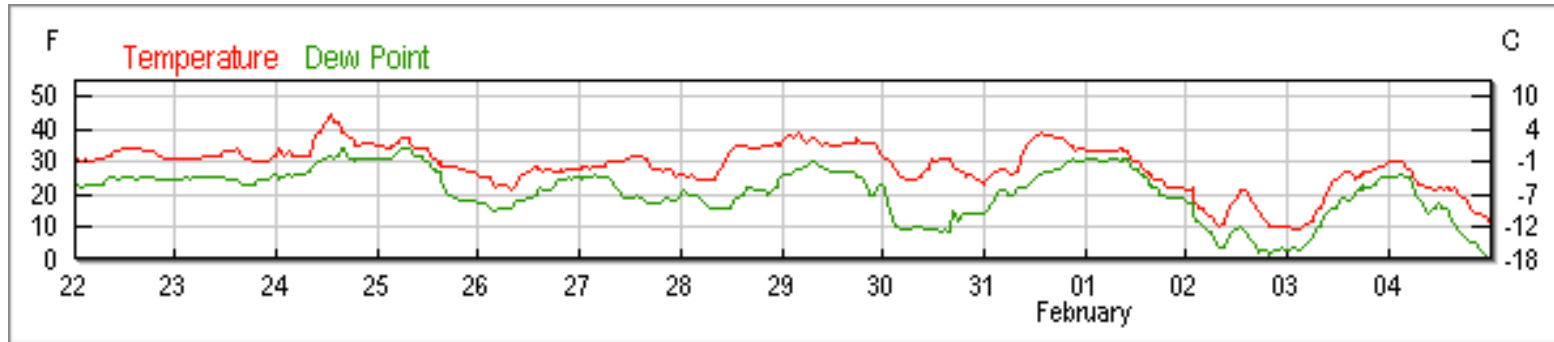
Temperature Comparisons

Outside Window Frame	Jan 30 High 77° Feb 02 Low 19°	42.40°	01/30 02/02	32° High 22° High	23° Low 09° Low
Inside Window Frame	Jan 30 High 85° Jan 23 Low 45°	59.37°	01/30 01/23	32° High 34° High	23° Low 30° Low
Window Side Face (4" inset from wall face)	Feb 02 High 95° Jan 23 Low 67°	72.73°	02/02 01/23	22° High 34° High	09° Low 30° Low
Room Side Face (4.5" inset from wall face)	Jan 27 High 94° Jan 23 Low 67°	72.83°	01/27 01/23	33° High 34° High	24° Low 30° Low

Weather Data Jan 22 - Feb 04 <http://bit.ly/16vfJOA>

High Jan 24 45°

Low Feb 03 08°



Daily Data Jan 22 - 28

01/22 <http://bit.ly/1GHFUCz>

01/23 <http://bit.ly/1D2MyNU>

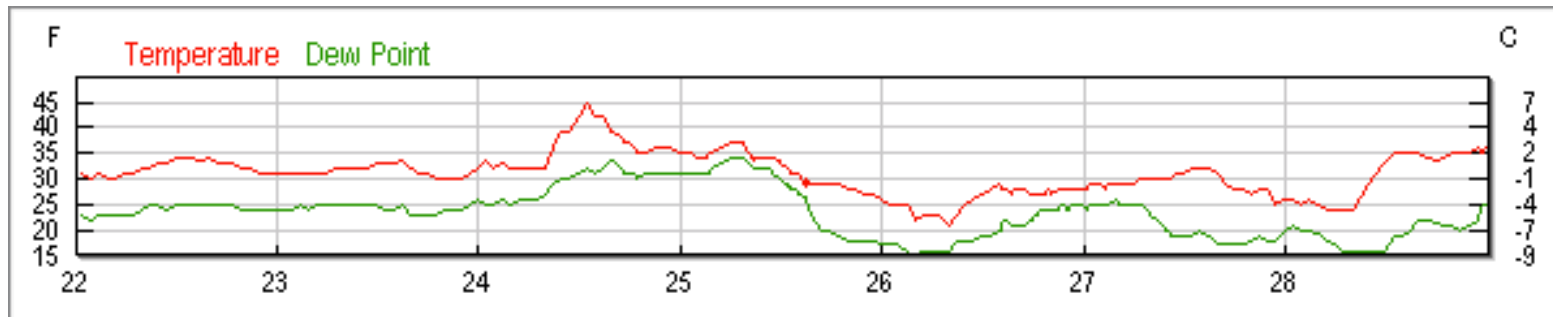
01/24 <http://bit.ly/1yH67vo>

01/25 <http://bit.ly/1EmX720>

01/26 <http://bit.ly/1uYX49R>

01/27 <http://bit.ly/1zbNdvv>

01/28 <http://bit.ly/1DcgCpV>



Daily Data Jan 29 - Feb 04

01/29 <http://bit.ly/1yeCnSX>

01/30 <http://bit.ly/1yYDNF1>

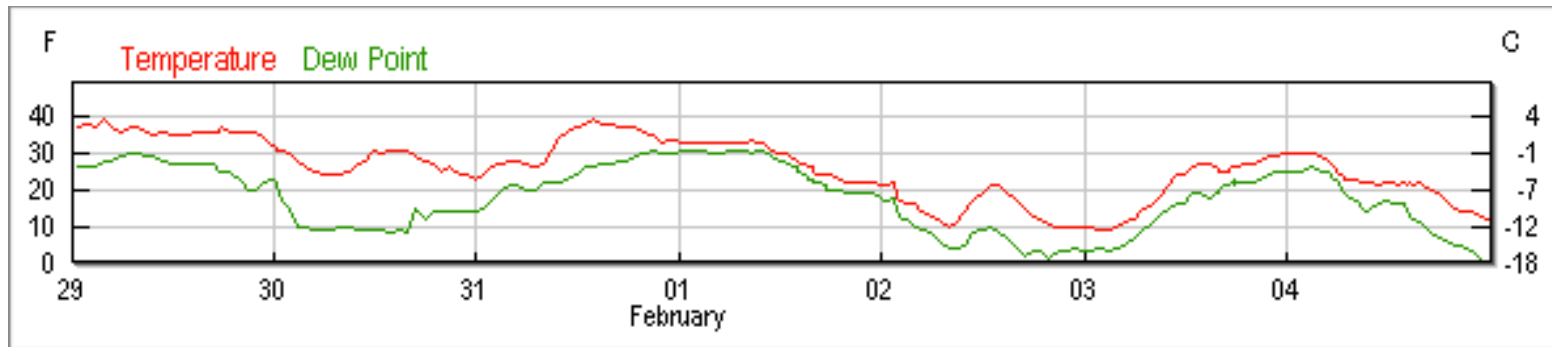
01/31 <http://bit.ly/1BKZOEg>

02/01 <http://bit.ly/1voTIm7>

02/02 <http://bit.ly/16z9nP6>

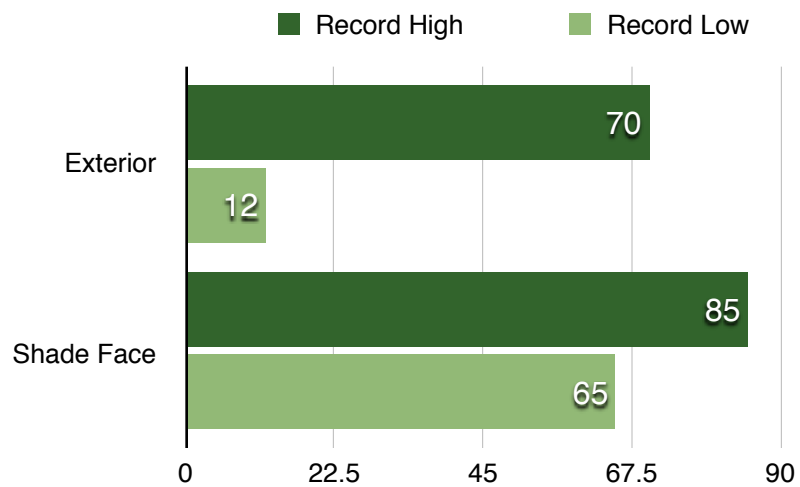
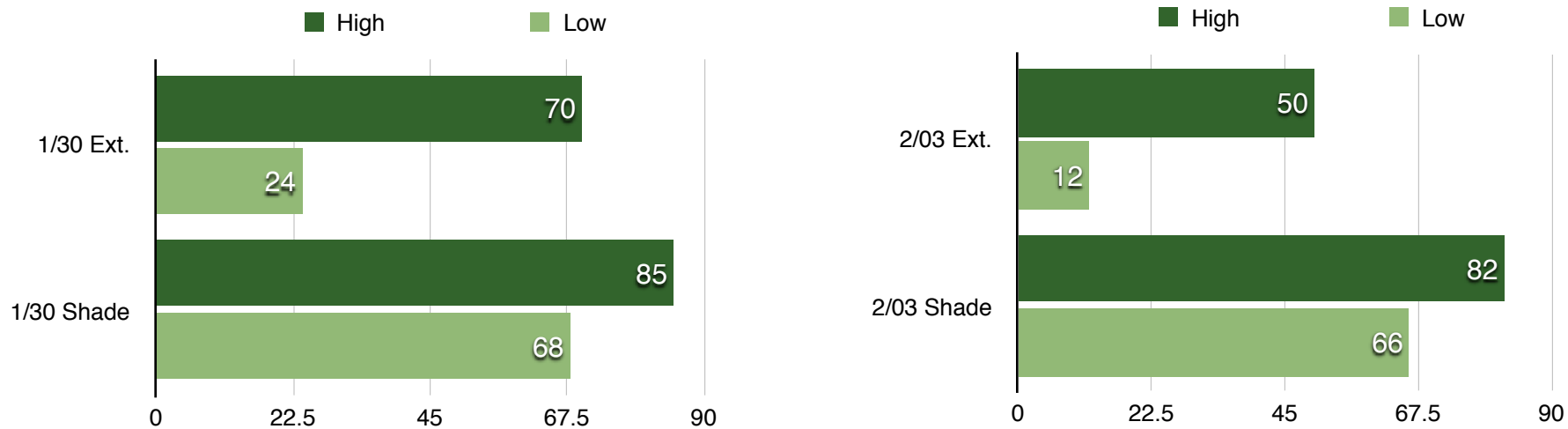
02/03 <http://bit.ly/1yHt91M>

02/04 <http://bit.ly/1I9y6dy>



Notes.

- (1) The Jan 30 exterior **High of 70° vs. Low of 24° = 46° difference.** By comparison the Jan 30 face of shade **High of 85° vs. Low of 68° = 17° difference.**
- (2) The Feb 03 exterior **Low of 12° vs. High of 50° = 38° difference.** By comparison the Feb 03 face of shade **Low of 66° vs. High of 82° = 16° difference.**
- (3) The exterior **High of 70° to Low of 12° = 58° swing.** The face of shade **High of 85° to Low of 65° = 20° swing.**
- (4) The East Window High temperatures recorded on the inside of the window frame and window side face of the shades is not indicative of a typical installation where the shades would normally be raised during the day to allow for passive gains. Similarly some of this heat penetration to the inside face of the shade is likely to raise those temperatures somewhat.



The energy savings and increased comfort due to the temperature moderating and stabilizing effect of **HeatSaver® Thermal Shades** is evident.