

Performance & Weather Jan 08 - 21

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.

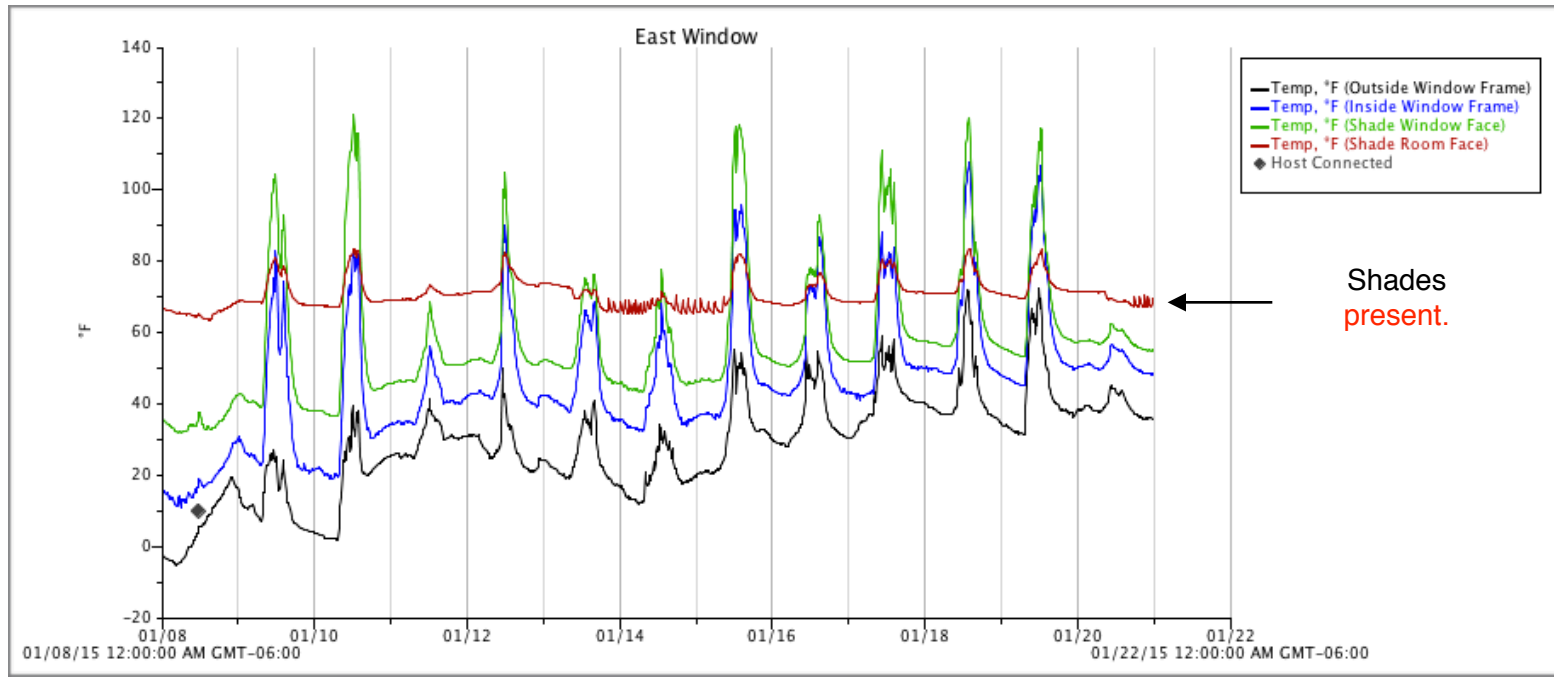
The ceilings are 128" high, there are four HVAC vents equally spaced across the ceiling. Both the vents and ducts are exposed. The thermostat dedicated to the room is on the opposite wall. Daily records of thermostat settings have not been available. It is safe to assume an average setting of 72°F.

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

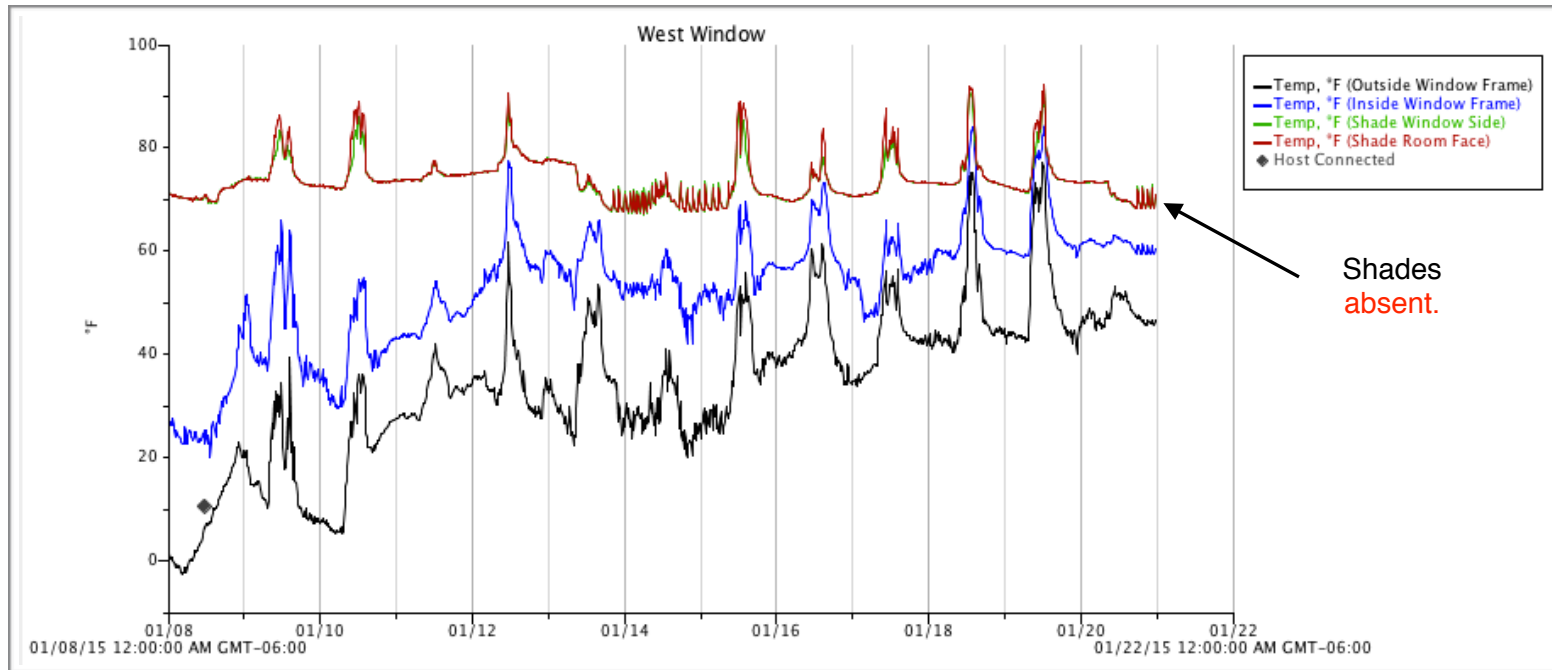
East Windows = Shades **permanently deployed** throughout test period.
West Windows = Shades **permanently raised** throughout test period.

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) (2)	Jan 18 High 71° Jan 08 Low -5°	28.65° 01/18 43° High 31° Low 01/08 20° High -7° Low
Inside Window Frame (4)	Jan 18 High 107° Jan 08 Low 11°	46.38° 01/18 43° High 31° Low 01/08 20° High -7° Low
Window Side Face (4)	Jan 10 High 121° Jan 08 Low 32°	57.84° 01/10 26° High 0° Low 01/08 20° High -7° Low
Room Side Face (3)	Jan 18 High 83° Jan 08 Low 64°	70.74° 01/18 43° High 31° Low 01/08 20° High -7° Low



West Windows

Averages

Temperature Comparisons

Outside Window Frame	Jan 19 High 77° Jan 08 Low -2°	34.35°	01/19 43° High 01/08 20° High	27° Low -7° Low
Inside Window Frame	Jan 19 High 85° Jan 08 Low 20°	53.06°	01/19 43° High 01/08 20° High	27° Low -7° Low
Window Side Face (4" inset from wall face)	Jan 18 High 90° Jan 14 Low 67°	73.57°	01/18 43° High 01/14 21° High	31° Low 05° Low
Room Side Face (4.5" inset from wall face)	Jan 19 High 92° Jan 14 Low 67°	73.87°	01/19 43° High 01/14 21° High	31° Low 05° Low

Weather Data Jan 08 - 21 <http://bit.ly/1JHKUmQ>

High Jan 17 44°

Low Jan 08 -7°



Daily Data Jan 08 - 14

01/08 <http://bit.ly/1Axr2QM>

01/09 <http://bit.ly/1AGCX1m>

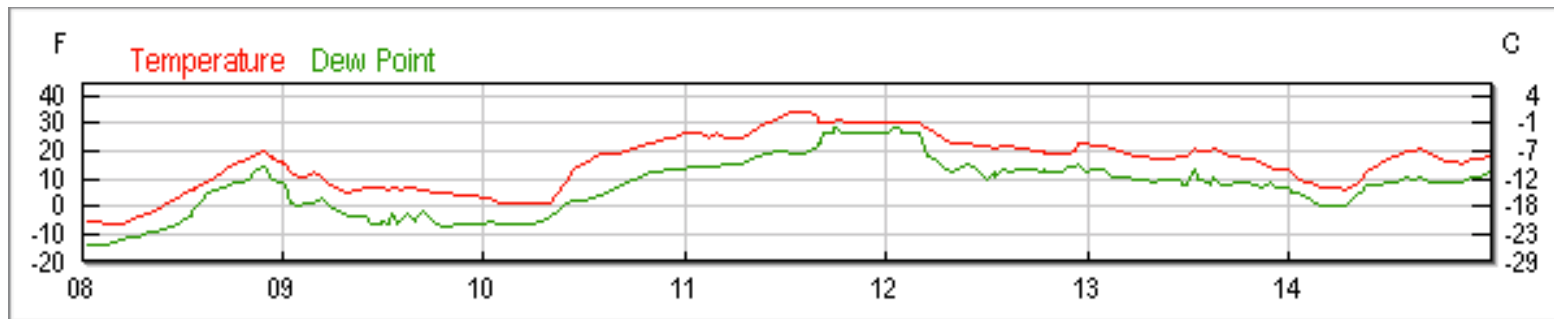
01/10 <http://bit.ly/1y8ffYv>

01/11 <http://bit.ly/1tZHp3Z>

01/12 <http://bit.ly/1FQuz2x>

01/13 <http://bit.ly/1zbZXVt>

01/14 <http://bit.ly/1IClbMQ>



Daily Data Jan 15 - 21

01/15 <http://bit.ly/1E7hnBD>

01/16 <http://bit.ly/1zoi62u>

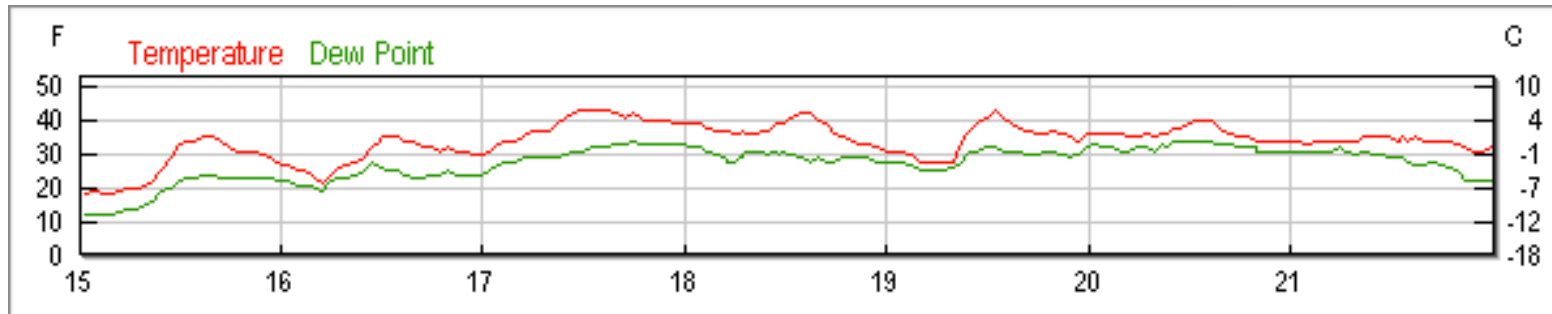
01/17 <http://bit.ly/1xGZqnR>

01/18 <http://bit.ly/1CHbXwk>

01/19 <http://bit.ly/1GptrTW>

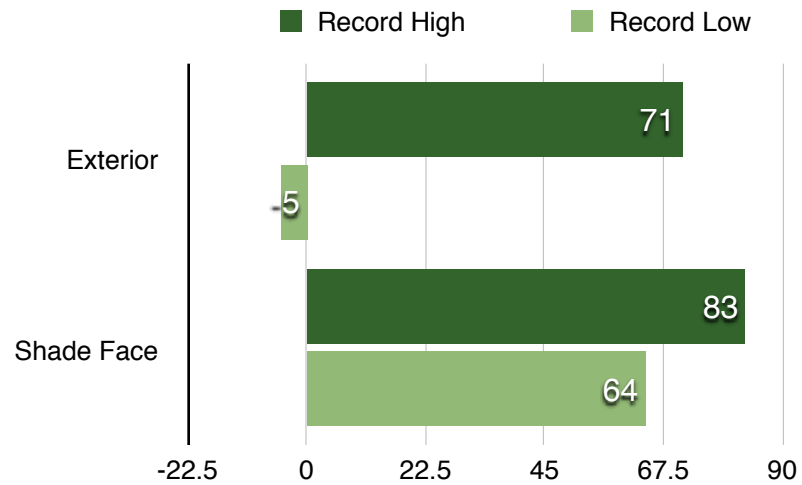
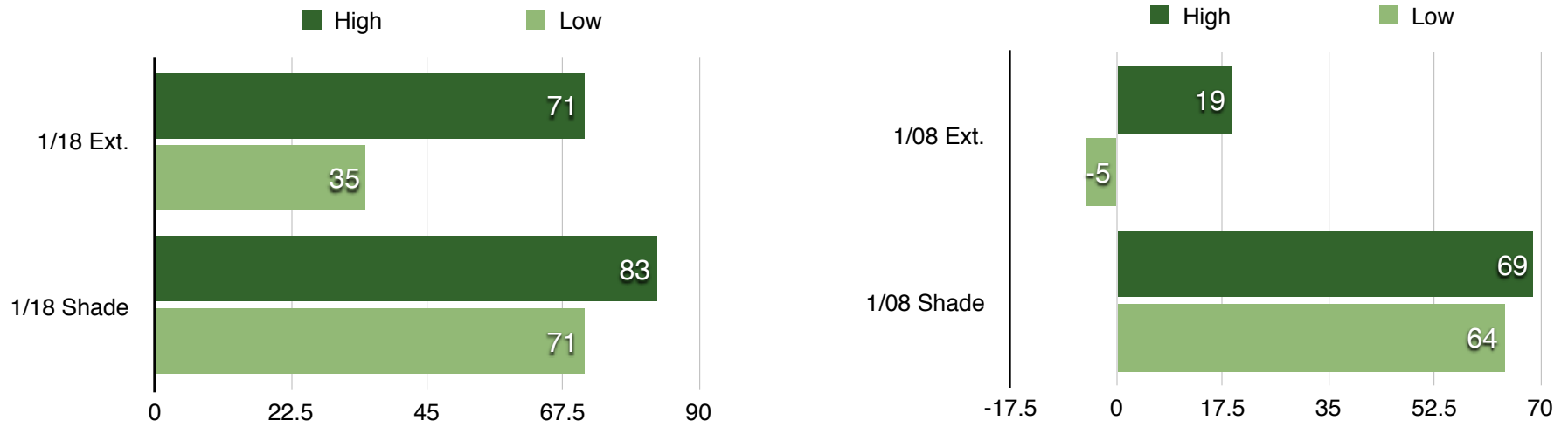
01/20 <http://bit.ly/1Cgq0dO>

01/21 <http://bit.ly/1unukl6>



Notes.

- (1) The Jan 18 exterior **High of 71°** vs. **Low of 35° = 36° difference**. By comparison the Jan 18 face of shade **High of 83°** vs **Low of 71° = 12° difference**.
- (2) The Jan 08 exterior **Low of -5°** vs. **High of 19° = 24° difference**. By comparison the Jan 08 face of shade **Low of 64°** vs. **High of 69° = 05° difference**.
- (3) The exterior **High of 71°** to **Low of -5° = 76° swing**. The face of shade **High of 83°** to **Low of 64° = 19° 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.