

**Performance & Weather Data February 6 - 28, 2014**

**Southern exposure only with limited shading is an important factor. *These 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 provide *0% shading during February.***

The weather 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.

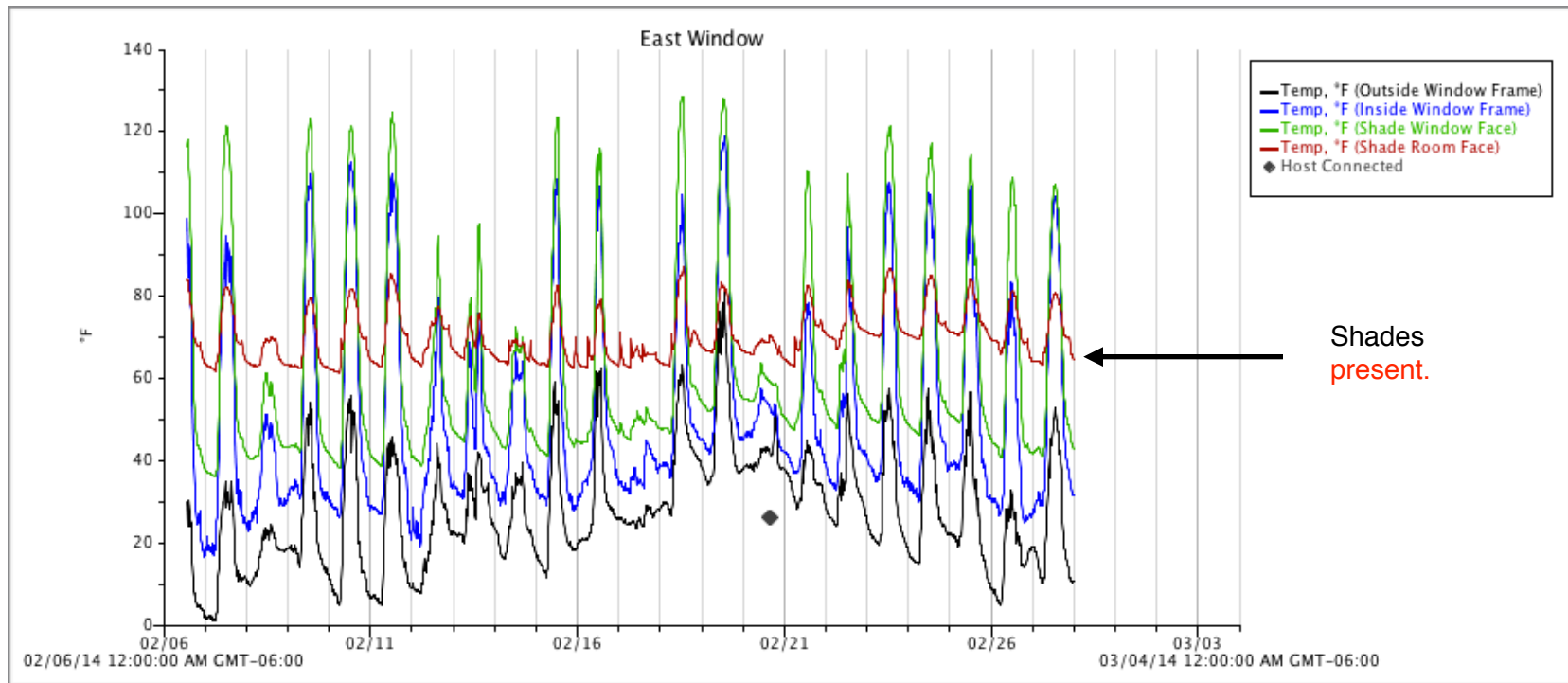
One [Onset](#) data logger and four sensors deployed per window assembly.

**Black** = outside window frame.

**Blue** = inside window frame.

**Green** = window side face of shade.

**Red** = room side face of shade.

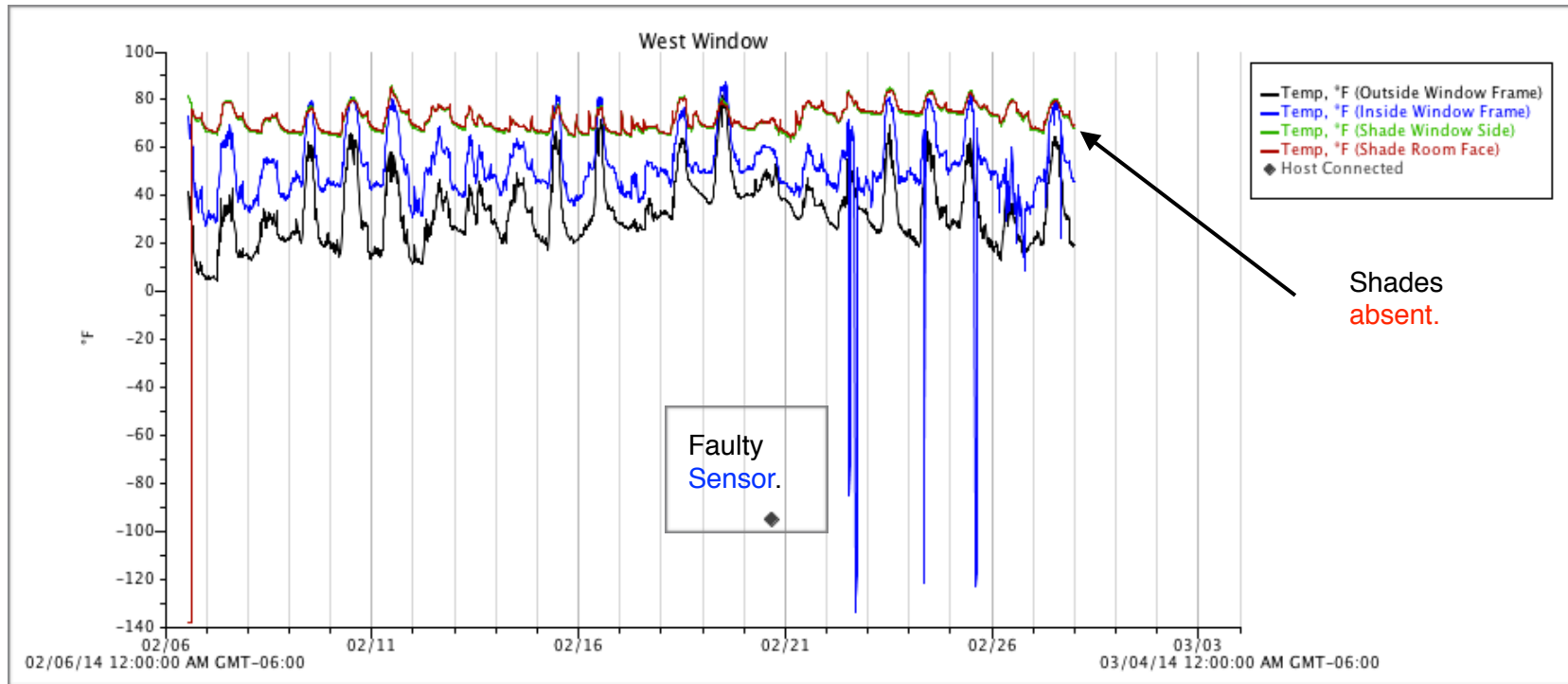


### East Windows

### Averages

### Temperature Comparisons

Outside Window Frame (1) (3)	Feb 19	High	82°	27.79°	02/19	45° High	32° Low
	(2)	Feb 7	Low		01°	02/07	11° High
Inside Window Frame (4)	Feb 19	High	119°	49.96°	02/19	45° High	32° Low
	Feb 7	Low	17°		02/07	11° High	-3° Low
Window Side Face (4)	Feb 18	High	128°	62.61°	02/18	45° High	23° Low
	Feb 7	Low	36°		02/07	11° High	-3° Low
Room Side Face (3)	Feb 18	High	87°	70.17°	02/18	45° High	23° Low
	Feb 10	Low	61°		02/10	13° High	-2° Low



### West Windows

### Averages

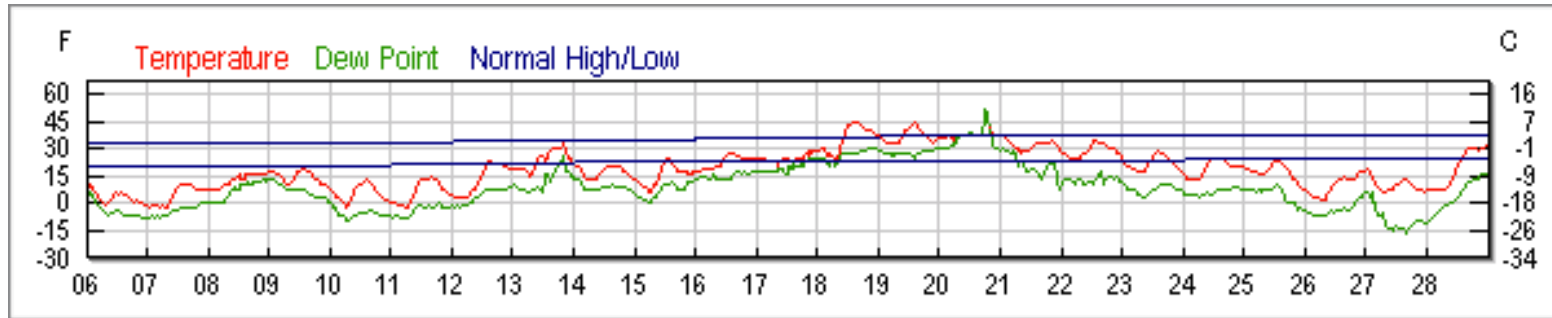
### Temperature Comparisons

Outside Window Frame	Feb 19 High 85° Feb 7 Low 4°	33.52°	02/19 45° High 02/07 11° High	32° Low -3° Low
Inside Window Frame (5)	Feb 19 High 88° Feb 26 Low 17°	52.56°	02/19 45° High 02/26 19° High	32° Low 01° Low
Window Side Face (4.5" inset from wall face)	Feb 11 High 85° Feb 21 Low 62°	71.96°	02/11 15° High 02/21 37° High	-4° Low 28° Low
Room Side Face (4" inset from wall face)	Feb 11 High 85° Feb 21 Low 64°	72.38°	02/11 15° High 02/21 37° High	-4° Low 28° Low

**Weather Data** Feb 06 - 28 <http://bit.ly/1tQ0Q03>

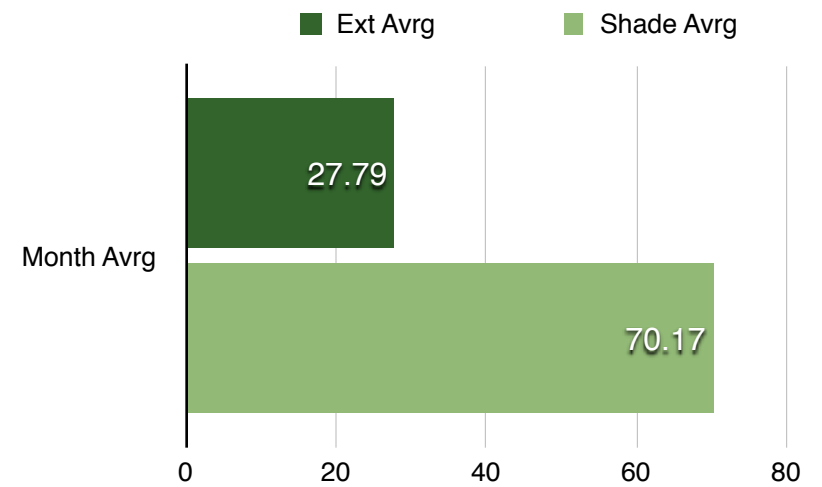
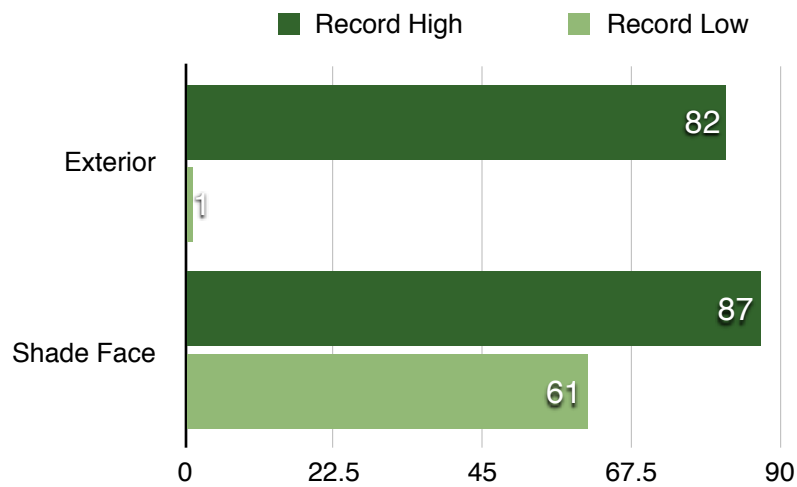
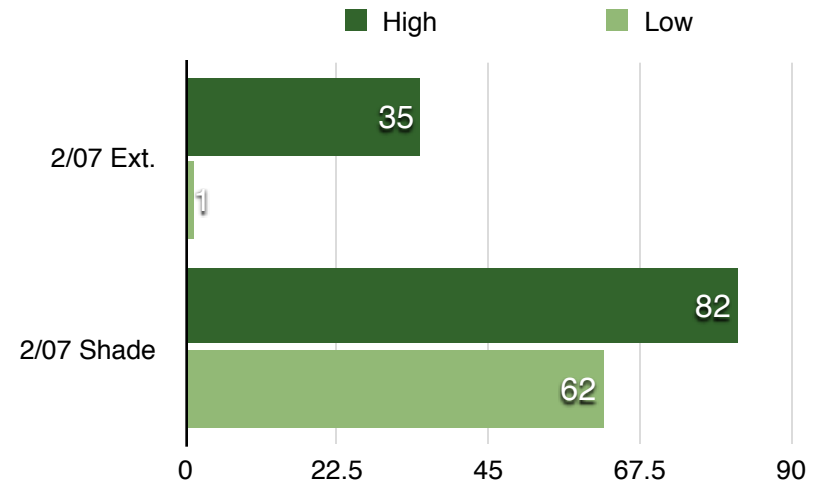
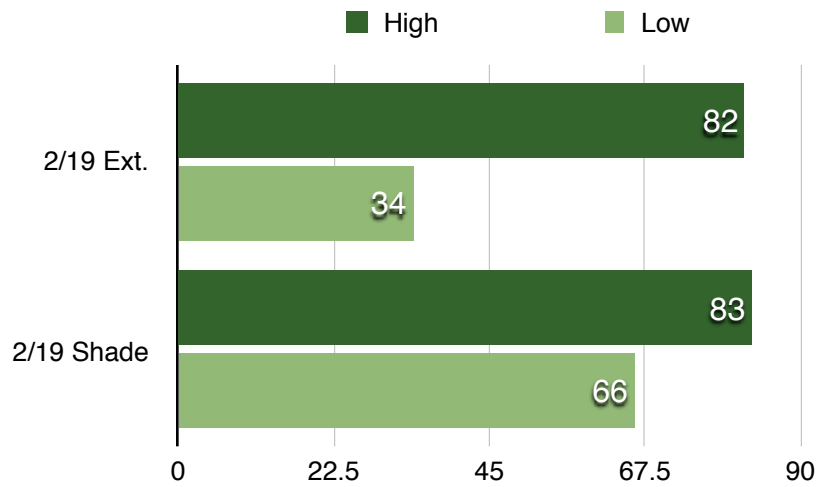
High Feb 20 51°

Low Feb 10 -2°



### Notes.

- (1) The **February 19 exterior High of 82° vs. Low of 34° = 48° difference.** By comparison the **February 19 face of shade High of 83° vs Low of 66° = 17° difference.**
- (2) The **February 7 exterior Low of 01° vs. High of 35° = 34° difference.** By comparison the **February 7 face of shade Low of 62° vs. High of 82° = 20° difference.**
- (3) The **exterior High of 82° to Low of 01° = 81° swing.** The **face of shade High of 87° to Low of 61° = 26° swing.** The **exterior average of 27.79° vs. face of shade average of 70.17° = 42.38 difference.**
- (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.* A more accurate representation would be to use the High temperatures from the West Windows. Similarly some of this heat penetration to the inside face of the shades is likely to raise those temperatures somewhat.
- (5) The faulty sensor readings have been excluded from all data collected and reported. In the related Onset spreadsheet the temperature spikes are obvious, contained and did not effect the adjacent cells.



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