

Performance & Weather Data March - August 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 average 62.85% shading during this period.

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.

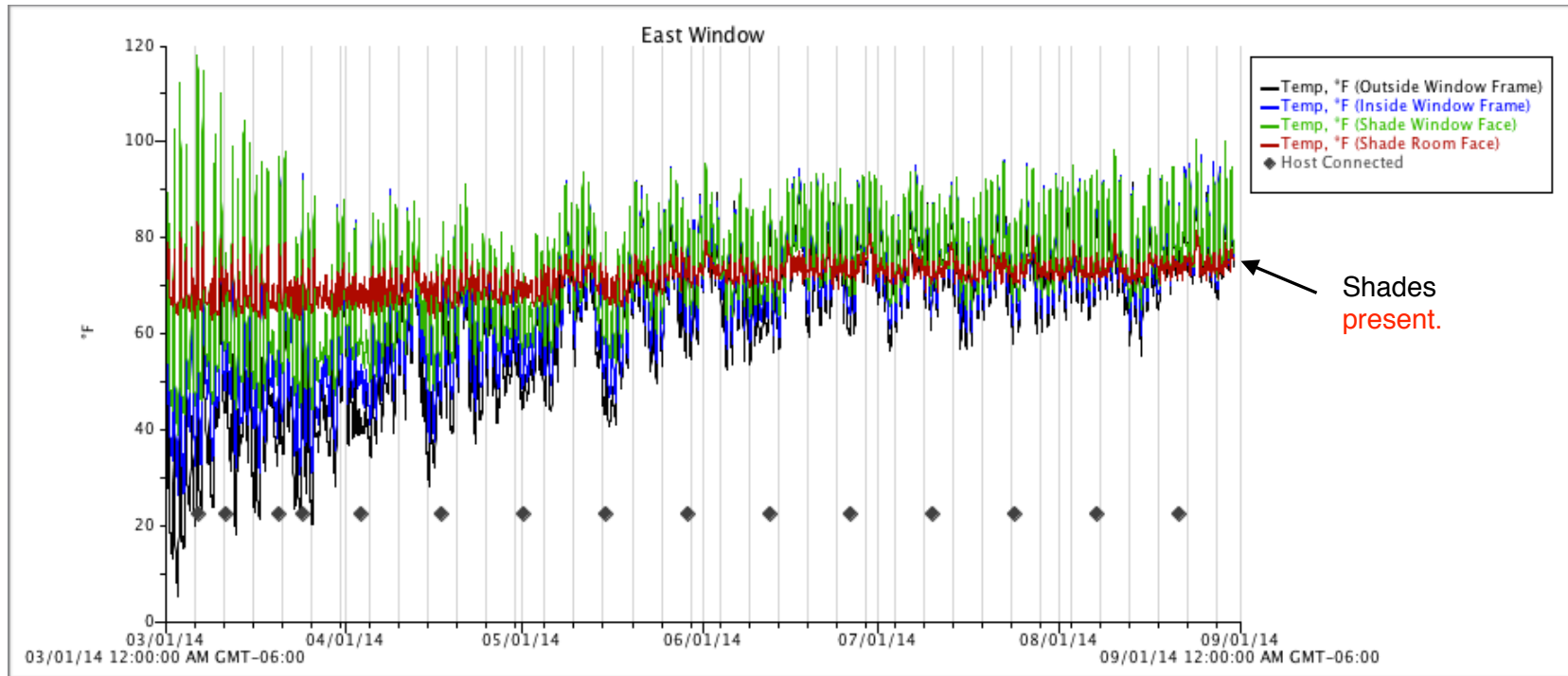
One [Onset](#) data logger and four sensors deployed per window assembly.

Black = outside window frame.

Blue = inside window frame.

Green = window side face of shade.

Red = room side face of shade.

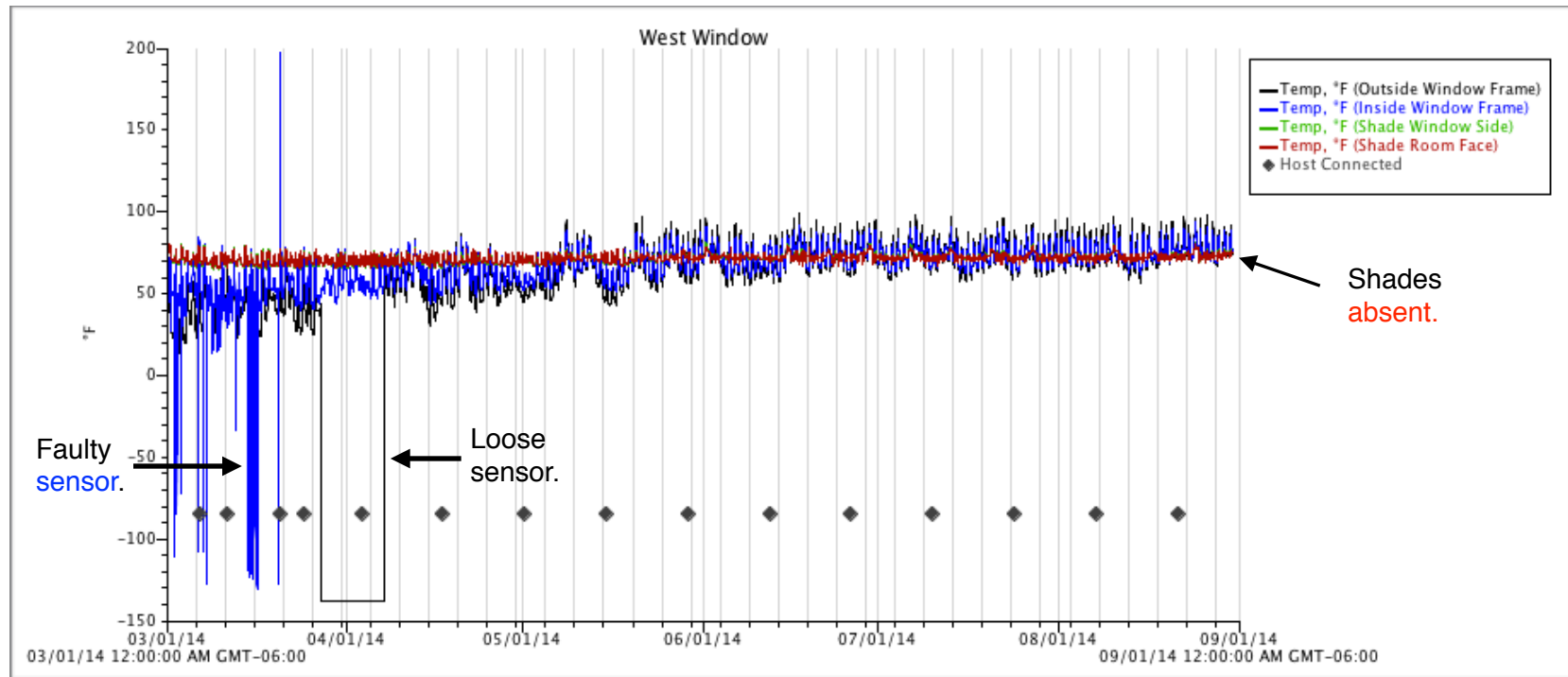


East Windows

Averages

Temperature Comparisons

Outside Window Frame (1) (3)	June 17 High 94°	62.45°	06/17	93° High	79° Low
(2)	Mar 13 Low 18°		03/13	39° High	14° Low
Inside Window Frame (4)	Mar 7 High 100°	68.51°	03/07	46° High	20° Low
	Mar 24 Low 31°		03/24	37° High	20° Low
Window Side Face (4)	Mar 7 High 115°	72.17°	03/07	46° High	20° Low
	Mar 26 Low 44°		03/26	39° High	17° Low
Room Side Face (3)	Aug 31 High 82°	71.73°	08/31	87° High	71° Low
	Mar 9 Low 63°		03/09	42° High	21° Low



West Windows

Averages

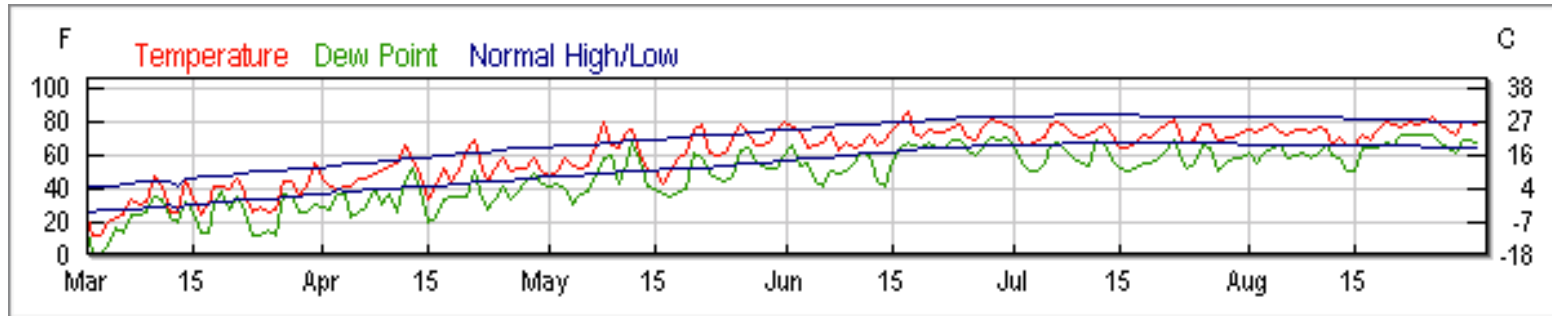
Temperature Comparisons

Outside Window Frame	June 17 High 99° Mar 13 Low 24°	65.04°	06/17 93° High 03/13 39° High	79° Low 14° Low
Inside Window Frame (5)	Aug 24 High 94° Mar 8 Low 13°	67.52°	08/24 89° High 03/08 39° High	73° Low 23° Low
Window Side Face (4.5" inset from wall face)	Aug 31 High 83° Apr 16 Low 65°	71.67°	08/31 87° High 04/16 52° High	71° Low 31° Low
Room Side Face (4" inset from wall face)	Aug 31 High 81° Apr 16 Low 65°	71.69°	08/31 87° High 04/16 52° High	71° Low 31° Low

Weather Data Mar 1 - Aug 31 <http://bit.ly/1vnHzUS>

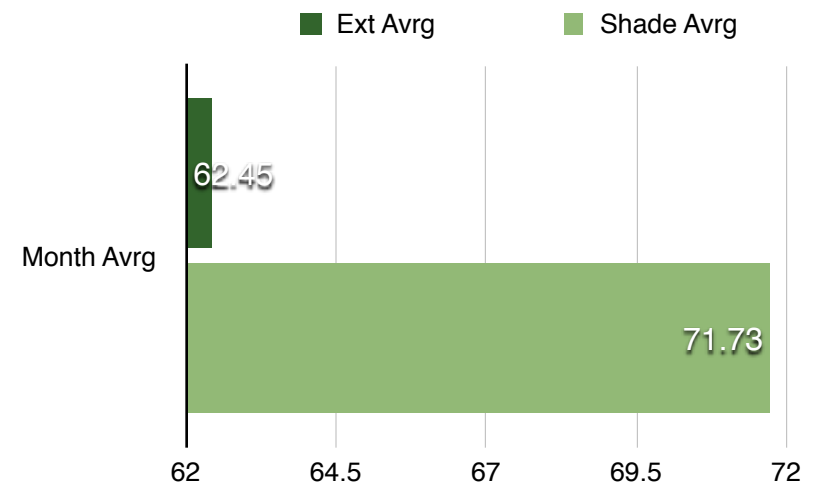
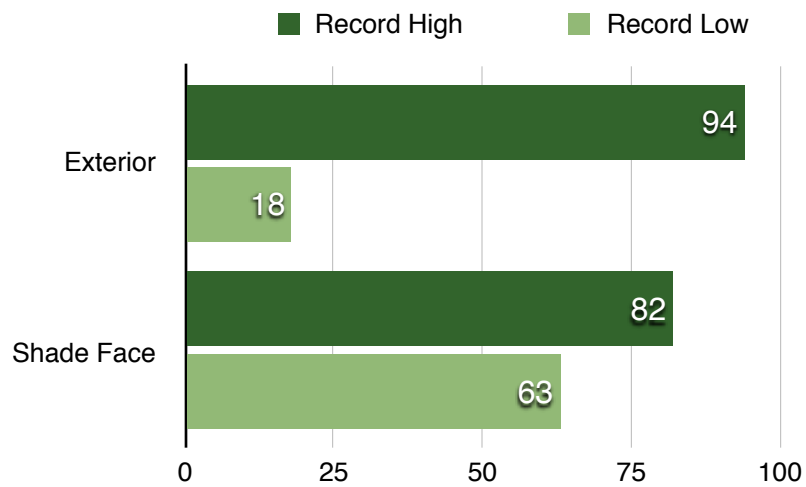
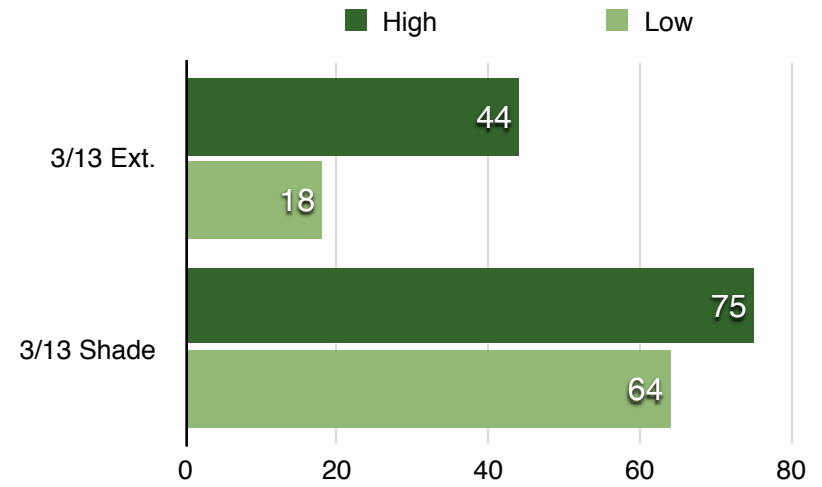
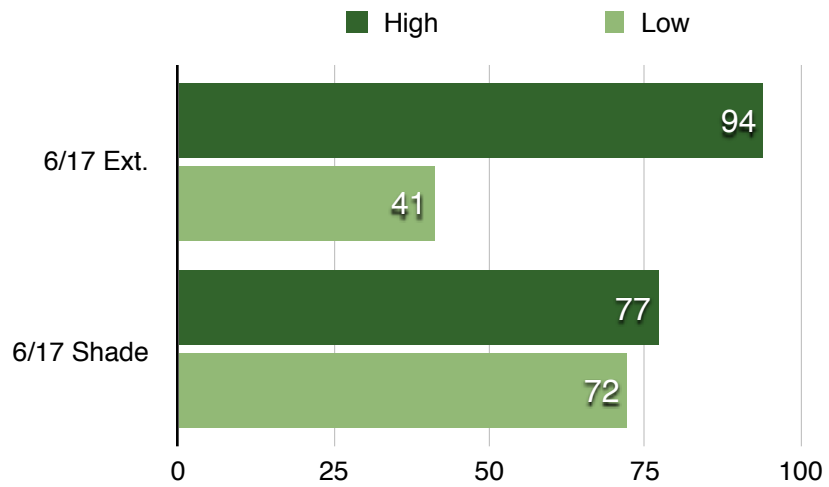
High June 17 93°

Low Mar 3 01°



Notes.

- (1) The **June 17 exterior High of 94° vs. Low of 41° = 53° difference.** By comparison the **June 17 face of shade High of 77° vs Low of 72° = 5° difference.**
- (2) The **March 13 exterior Low of 18° vs. High of 44° = 26° difference.** By comparison the **March 13 face of shade Low of 64° vs. High of 75° = 11° difference.**
- (3) The **exterior High of 94° to Low of 18° = 76° swing.** The **face of shade High of 82° to Low of 63° = 19° swing.** The **exterior average of 62.45° vs. face of shade average of 71.73° = 9.28° 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 and loose 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.