HeatSaver® Thermal Shades
Part of the Solution…

Performance & Weather Data February 6 - 20

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 Feb.

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.
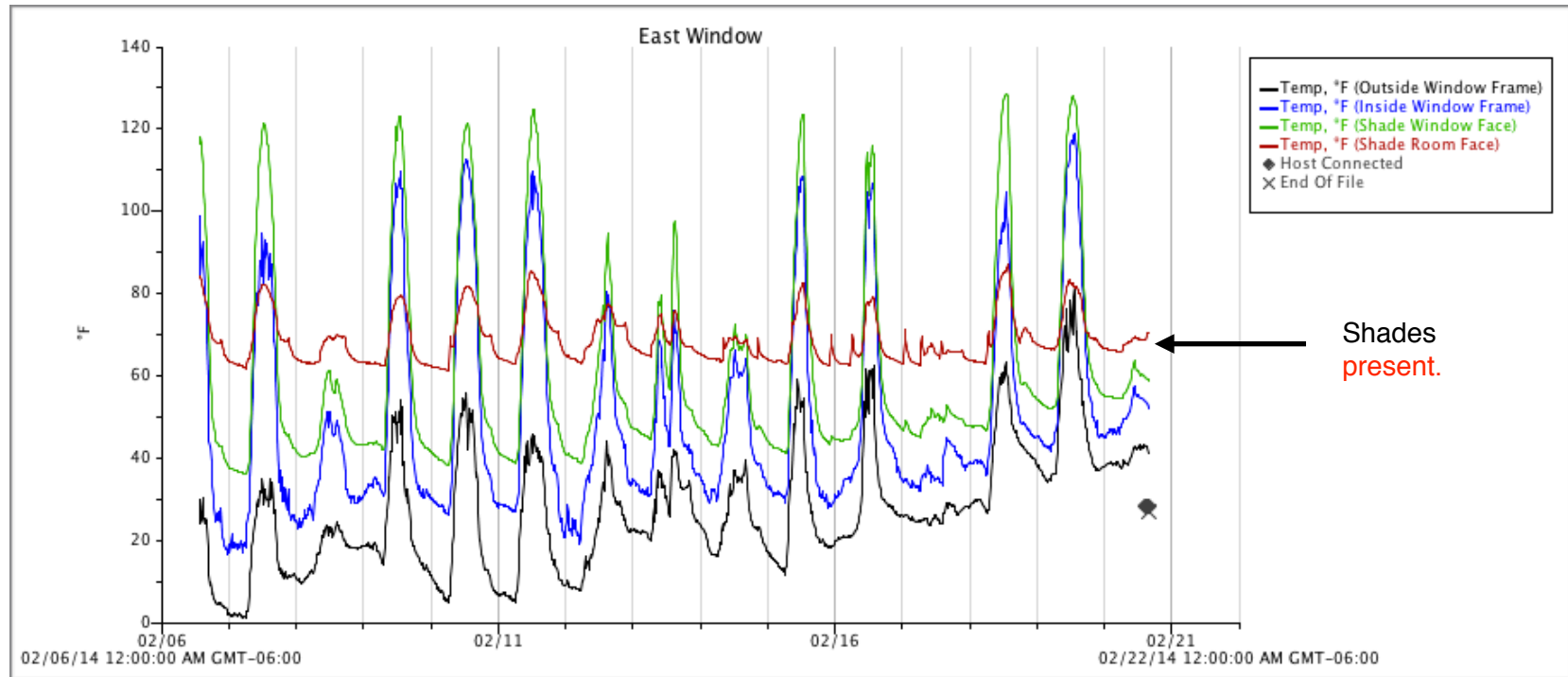West Windows = Shades **_permanently raised_** throughout test period.

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.
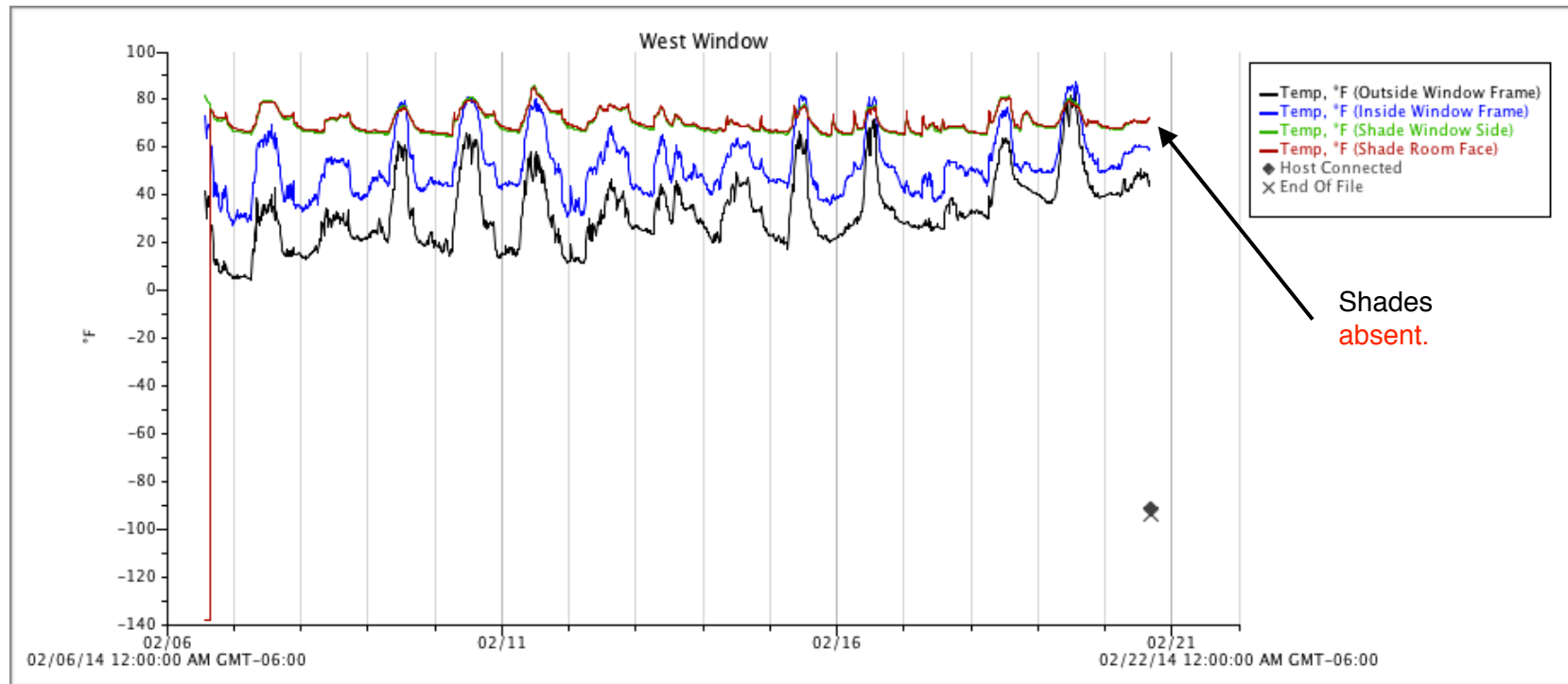

East Window

Shades present.

East Windows			Averages	Temperature Comparisons		
Outside Window Frame (1) (3)	High Feb 19	81°	27.16°	02/19	45° High	32° Low
(2)	Low Feb 7	1°		02/07	11° High	-03° Low
Inside Window Frame (4)	High Feb 19	119°	48.94°	02/19	45° High	32° Low
	Low Feb 6	17°		02/06	12° High	-01° Low
Window Side Face of Shades (4)	High Feb 18	129°	61.22°	02/18	45° High	23° Low
	Low Feb 7	36°		02/07	11° High	-03° Low
Room Side Face of Shades (3)	High Feb 18	87°	68.79°	02/18	45° High	23° Low
	Low Feb 10	61°		02/10	13° High	-02° Low

West Window

Legend:
— Temp, °F (Outside Window Frame)
— Temp, °F (Inside Window Frame)
— Temp, °F (Shade Window Side)
— Temp, °F (Shade Room Face)
◆ Host Connected
✕ End Of File

02/06/14 12:00:00 AM GMT-06:00
02/22/14 12:00:00 AM GMT-06:00

Shades absent.

West Windows			Averages	Temperature Comparisons		
Outside Window Frame	High Feb 19	85°	32.90°	02/19	45° High	32° Low
	Low Feb 7	4°		02/07	11° High	-3° Low
Inside Window Frame	High Feb 19	88°	52.33°	02/19	45° High	32° Low
	Low Feb 6	28°		02/06	12° High	-1° Low
Window Side Face (5)	High Feb 11	85°	70.45°	02/11	15° High	-4° Low
(4.5" inset from wall face)	Low Feb 10	64°		02/10	13° High	-2° Low
Room Side Face (5)	High Feb 11	85°	69.46°	02/11	15° High	-4° Low
(4" inset from wall face)	Low Feb 10	64°		02/10	13° High	-2° Low

Weather Data   Feb. 6 - 20   http://bit.ly/1n0sp0v

High Feb. 20 51°   Low Feb. 11 -04°
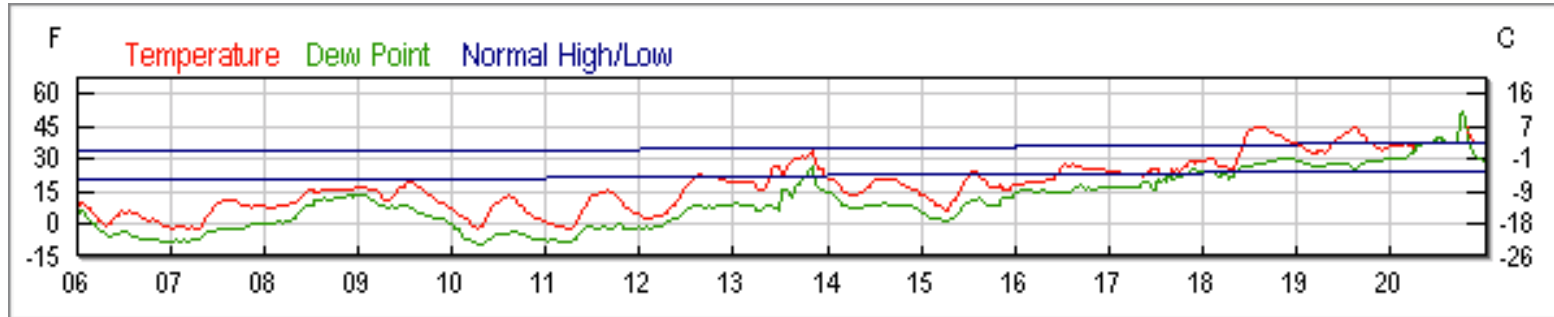
Daily Data

02/06 http://bit.ly/1dCYx63	02/07 http://bit.ly/1lYePAK	02/08 http://bit.ly/1kwIpeT
02/09 http://bit.ly/1eOEl5N	02/10 http://bit.ly/1grusto	02/11 http://bit.ly/1ohNXKv
02/12 http://bit.ly/1evIhUA	02/13 http://bit.ly/MjPNMr	02/14 http://bit.ly/1cNBZA3
02/15 http://bit.ly/1cNCmL8	02/16 http://bit.ly/1gvUFZR	02/17 http://bit.ly/1eMSyvU
02/18 http://bit.ly/1jQHMwI	02/19 http://bit.ly/1jSQhY1	02/20 http://bit.ly/1mycY5X

Notes.

(1) The **Feb. 19** <u>exterior</u> **High of 81°** vs. **Low of 34° = 47° difference.** By comparison t**he Feb. 19** <u>face of shade</u> **High of 83°** vs. **Low of 66° = 17° difference.**

(2) The **Feb. 7** <u>exterior</u> **Low of 1°** vs. **High of 35° = 34° difference.** By comparison the **Feb. 7** <u>face of shade</u> **Low of 62°** vs. **High of 82° = 20° difference.**

(3) The <u>exterior</u> **High of 81°** to **Low of 1° = 80° swing.** The <u>face of shade</u> **High of 87°** to **Low of 61° = 26° 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.

(5) With nothing separating these 2 sensors the temperatures recorded will always track each other closely and are likely indicative of both room temperatures and convection currents present.