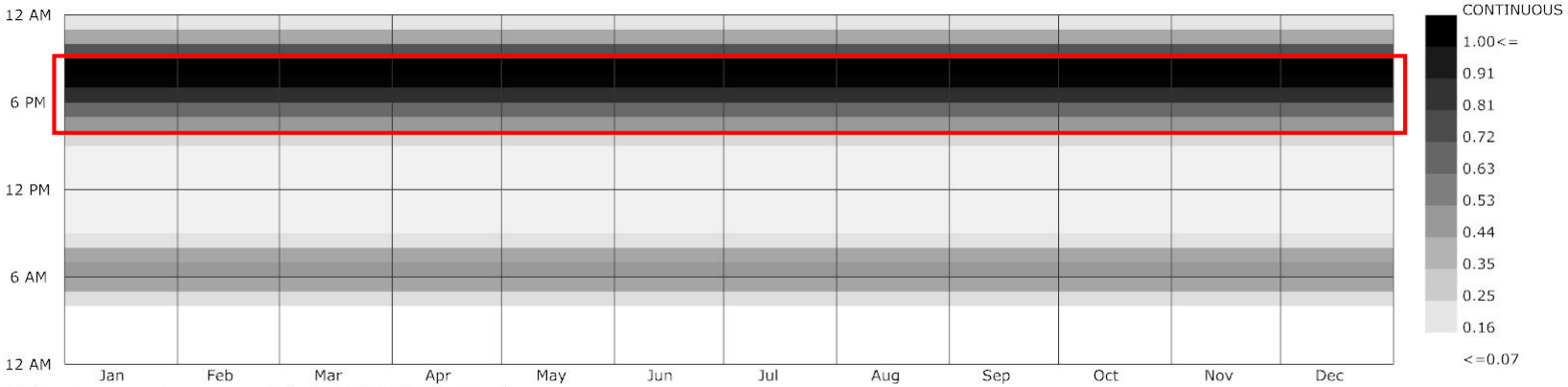
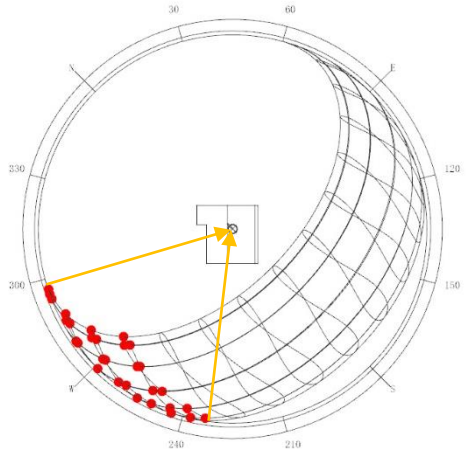


MidriseApartment Apartment Light (CONTINUOUS) - Hourly
schedule:year
1 JAN 1:00 - 31 DEC 24:00



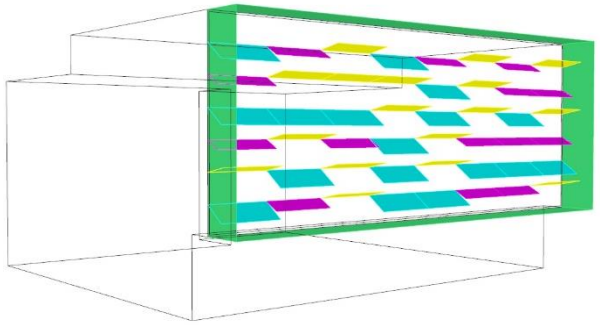
High Lighting demanded:

4 – 9 PM

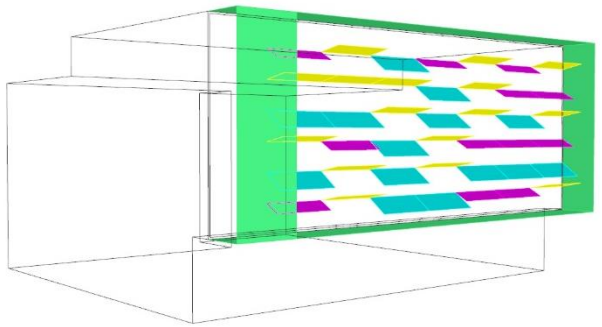
Sun Positions of:

4 – 9 PM

PROVIOUS FACADE

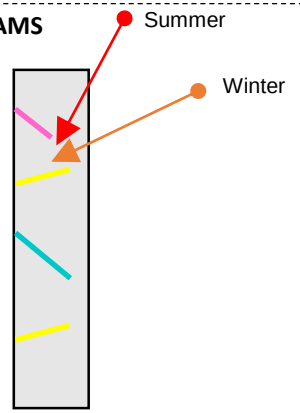


ADJUSTED FACADE

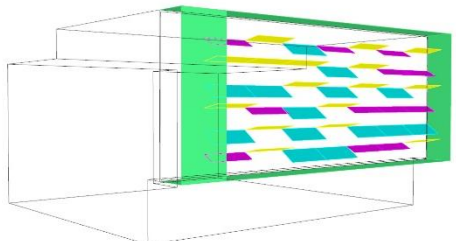


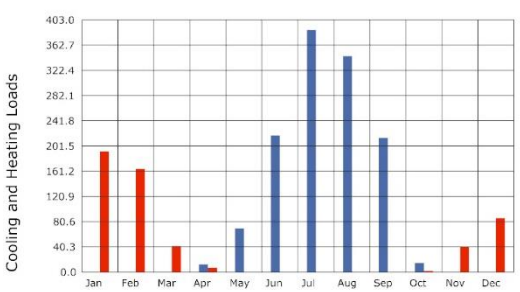
A reflective panel was added to increase afternoon's sunlight.

SECTION DIAGRAMS

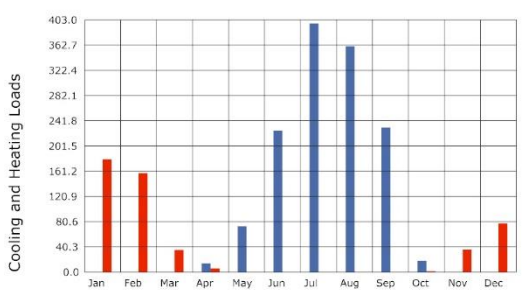


Three types of panel are optimized to block or introduce targeted sunlight



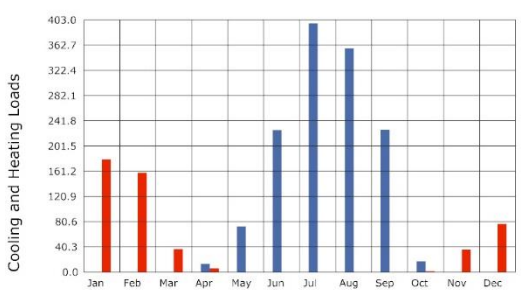


Philadelphia International Ap PA USA TMY3
Panel 1, Panel 2:45.0%, 30.0%
Cooling Load:1262kWh
Heating Load:534kWh
Total:1796kWh

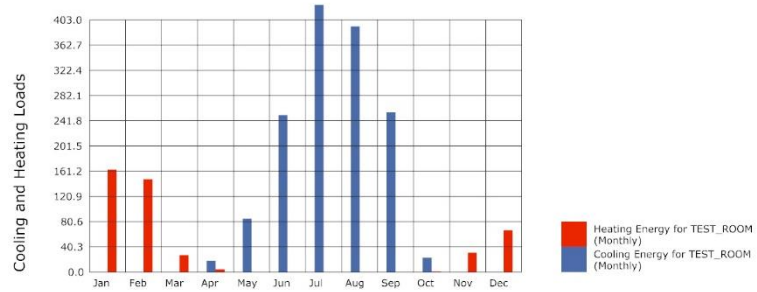


Philadelphia International Ap PA USA TMY3
Panel 1, Panel 2:40.0%, 30.0%
Cooling Load:1321kWh
Heating Load:495kWh
Total:1816kWh

sDA: 24% (9-17)



Philadelphia International Ap PA USA TMY3
Panel 1, Panel 2:35.0%, 30.0%
Cooling Load:1313kWh
Heating Load:496kWh
Total:1809kWh

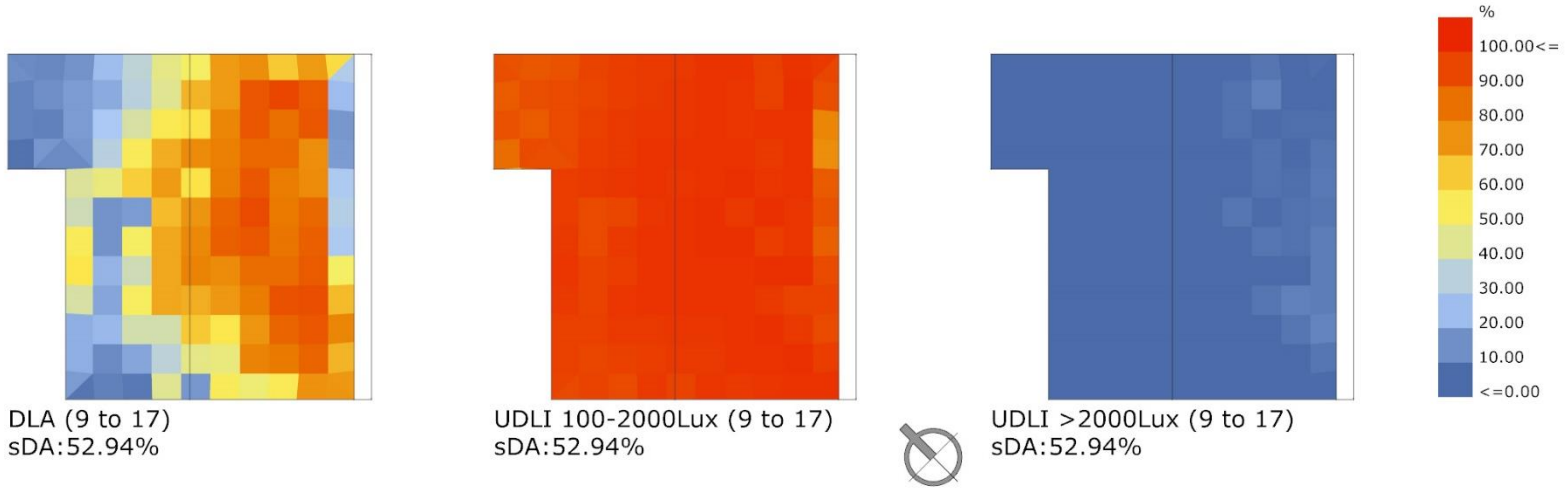


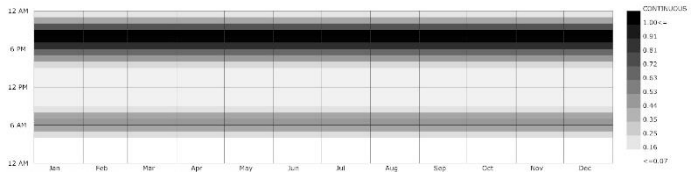
Philadelphia International Ap PA USA TMY3
Panel 1, Panel 2:30.0%, 30.0%
Cooling Load:1453kWh
Heating Load:443kWh
Total:1896kWh

sDA: 48% (9-17)

With the annual daylighting simulation result of “45% panel 1”, sDA (24%) is not good enough. Decreasing amount of panel 1 (for blocking sunlight) could bring more daylight, while total heating and cooling loads are increasing.

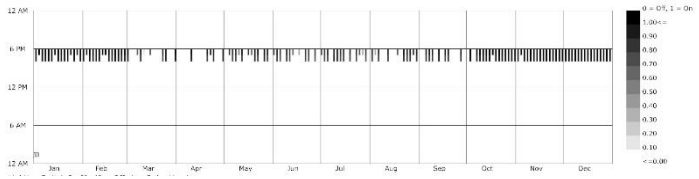
DAYLIGHTING LEVEL
Minor adjust depth of panels to increase daylighting level further (sDA: 53%).



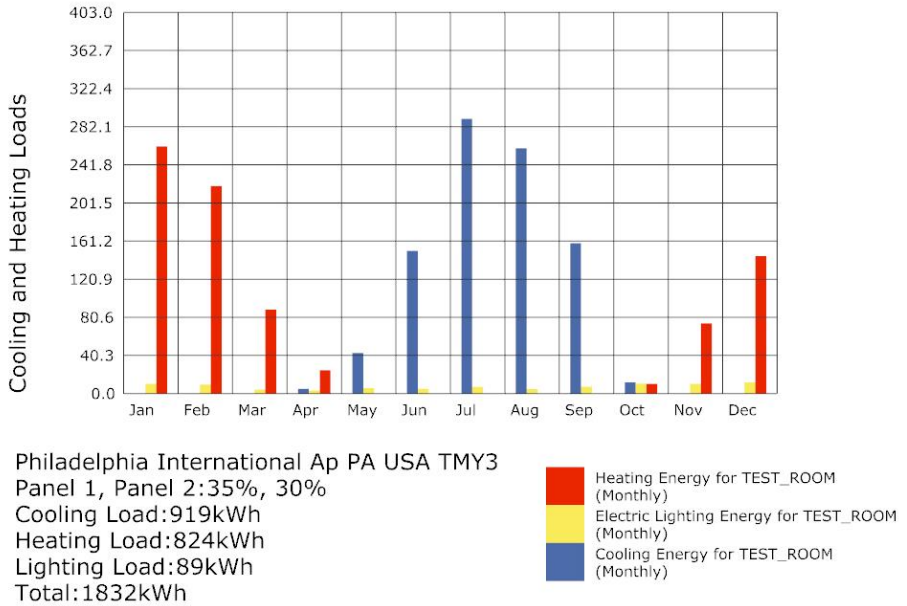


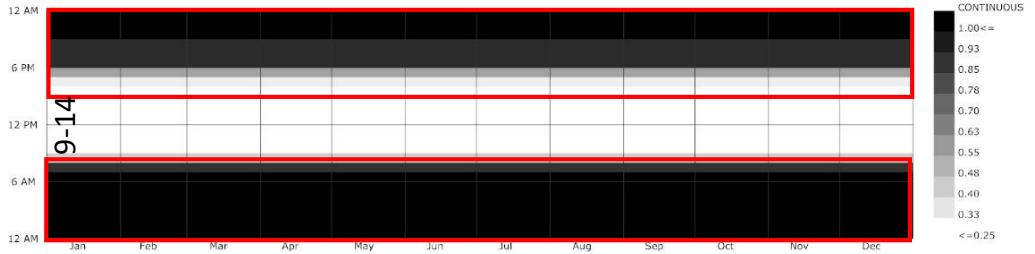
LIGHTING SCHEDULE

ENERGY LOADS
Replacing original lighting schedule with daylighting-lighting schedule to calculate energy loads.

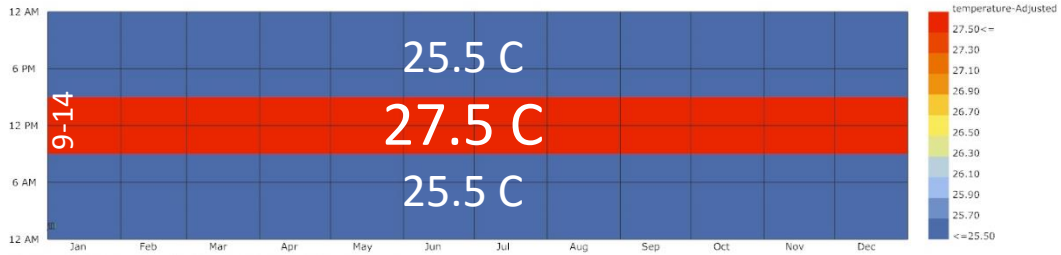


DAYLIGHTING-LIGHTING SCHEDULE

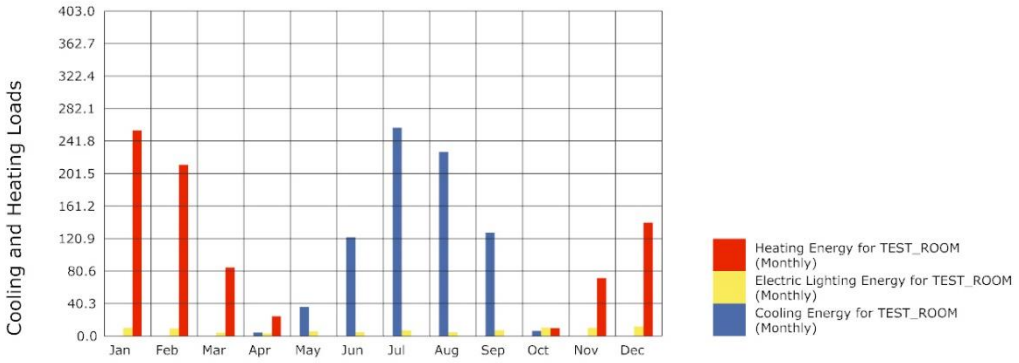




OCCUPANCY SCHEDULE



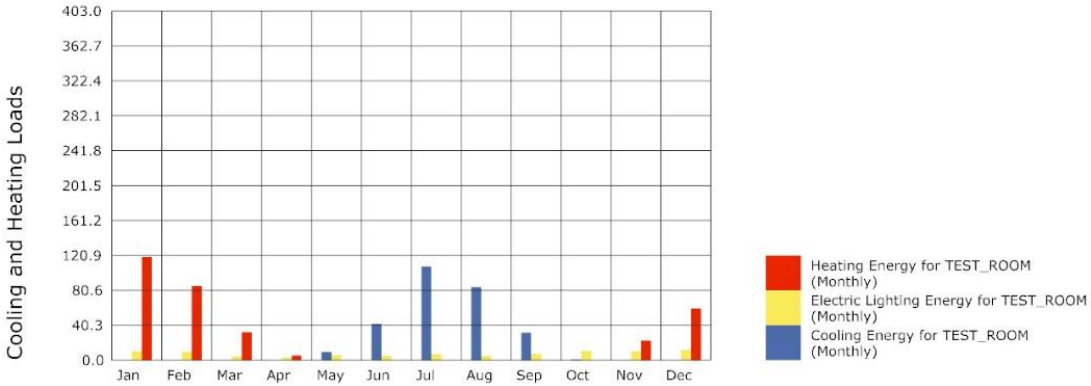
COOLING SET-TEMPERATURE SCHEDULE - ADJUSTED



Philadelphia International Ap PA USA TMY3
Panel 1, Panel 2:35.0%, 30.0%
Cooling Load:784kWh
Heating Load:800kWh
Lighting Load:89kWh
Total:1673kWh

Adjusting cooling and heating set temperature schedule (from 9 am to 2 pm, cooling: 27.5C, heating: 18C), based on occupancy schedule.

SERIOUS ENERGY	SeriousGlass
RIT Golisano Institute of Sustainability	
I-1 (1" oa)	
Configuration: Outer Light	1/4" Clear w/Cardinal 272 (#2)
Configuration: Central Suspended Film	88 (#4)
Configuration: Inner Light	1/4" Clear
Configuration: Interspaces	2 @ 1/4"
Configuration: Gas Fill	90% Krypton
Performance: U-Value	0.13
Performance: R-Value	7.7
Performance: Solar Heat Gain Coefficient (SHGC)	0.35
Performance: Shading Coefficient (SC)	0.40
Performance: Visible Light Transmission (TVis)	62%
Performance: Light to Solar Gain Ratio (LSG)	1.77
Performance: "Winter" Glass Surface Temp	62° F
Performance: UV Blockage	99.7%
Order #43891	**Line #1**
www.SeriousEnergy.com	**Toll-Free: 800-797-8159**



Philadelphia International Ap PA USA TMY3
Panel 1, Panel 2:35.0%, 30.0%
Cooling Load:276kWh
Heating Load:325kWh
Lighting Load:89kWh
Total:690kWh

Replacing window with double-glazed window (R:7.7, SHGC:0.35).