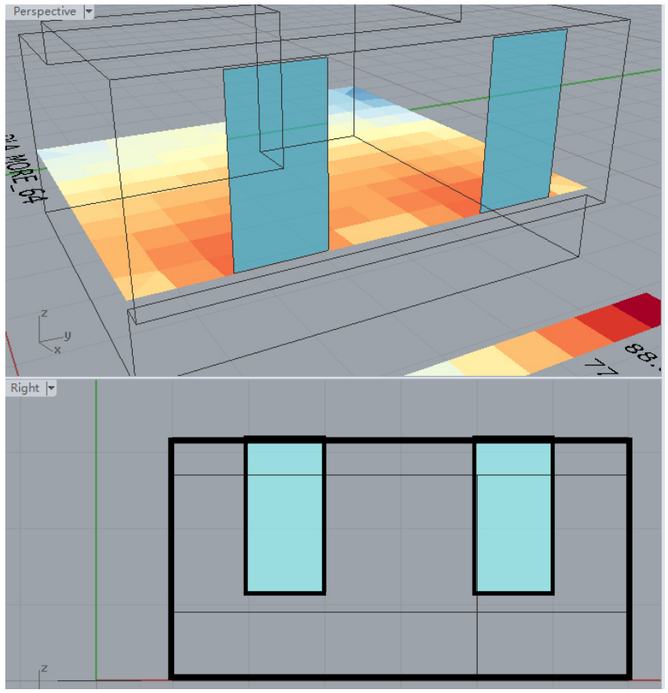
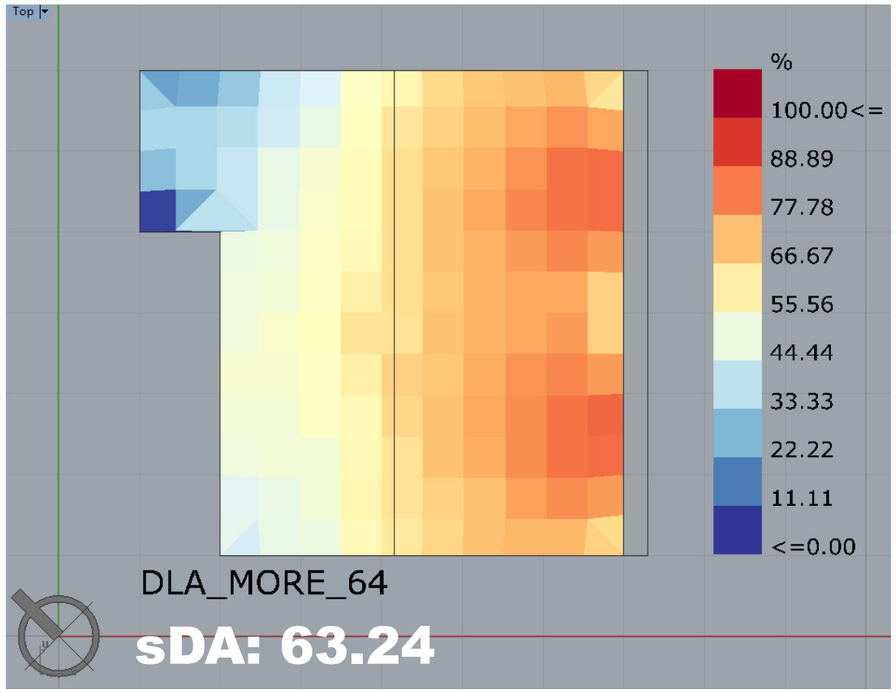
Wall/Window Ratio: 0.3

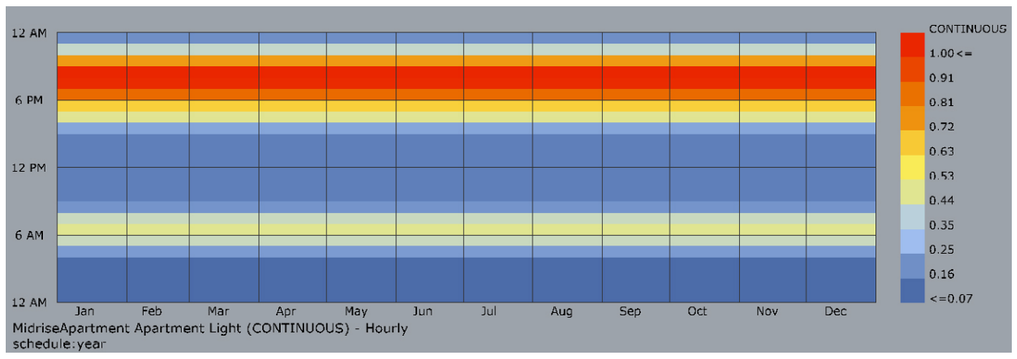


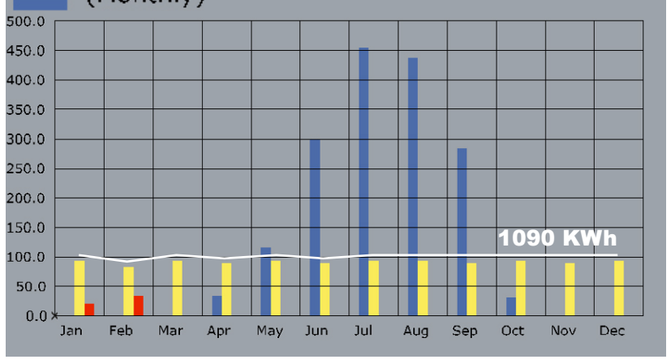
Without Shading Design



Before Lighting Schedual Modified

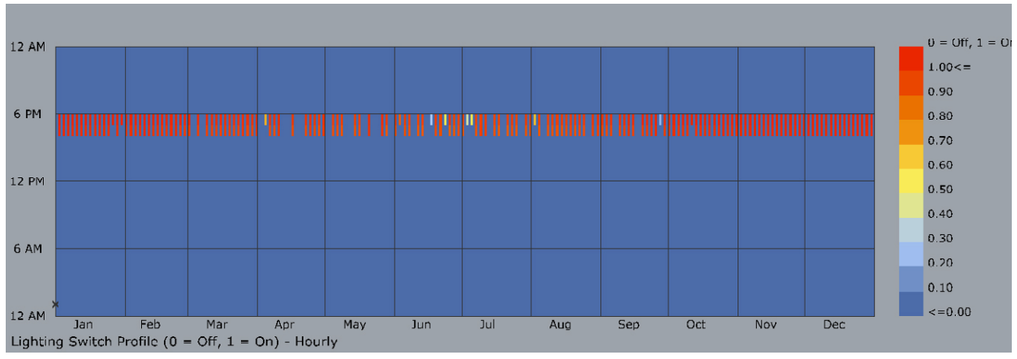
Total Elec. Lighting	Total Load
1089.767523	{0}
	0 2802.625684
Total Cooling	
1658.360231	**2802**
Total Heating	
54.49793	

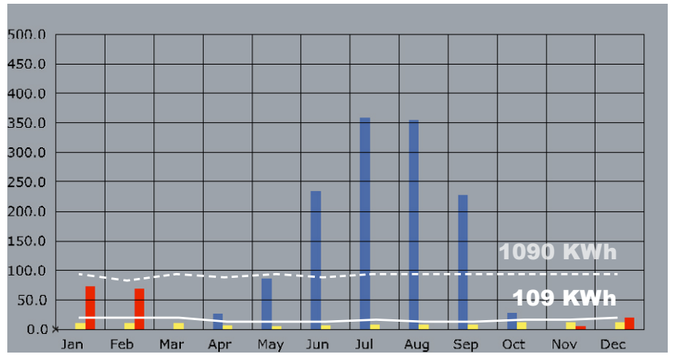




After Lighting Schedual Modified

Total Elec. Lighting	Total Load
109.234398	{0}
	0 1593.750299
Total Cooling	
1316.015707	**1594**
Total Heating	
168.500194	

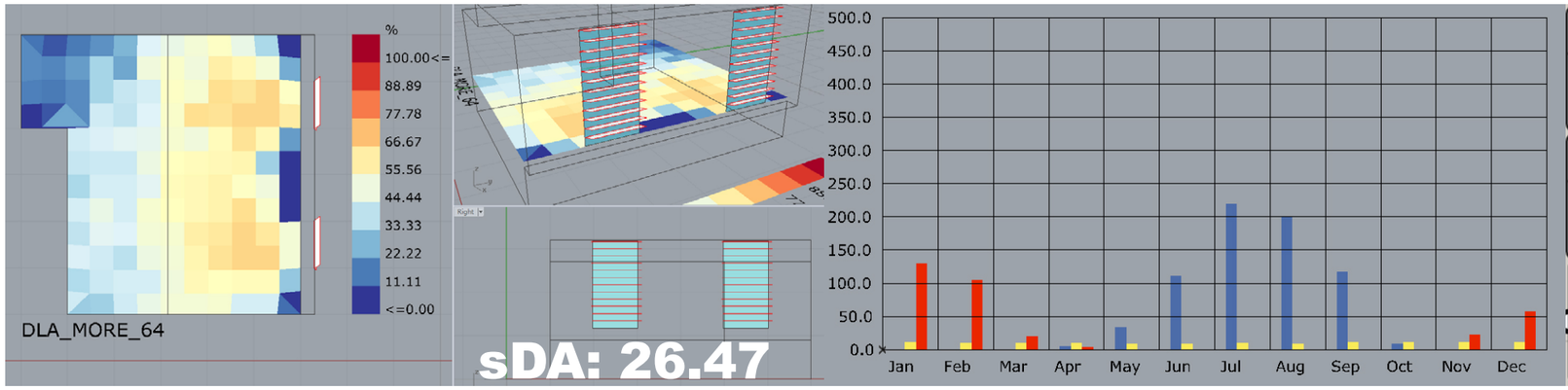




Light Schedual has a huge impact on Total Load

10X Decrease on Electric Lighting

Wall/Window Ratio: 0.3+ With Shading Design



Total Elec. Lighting
126.216312

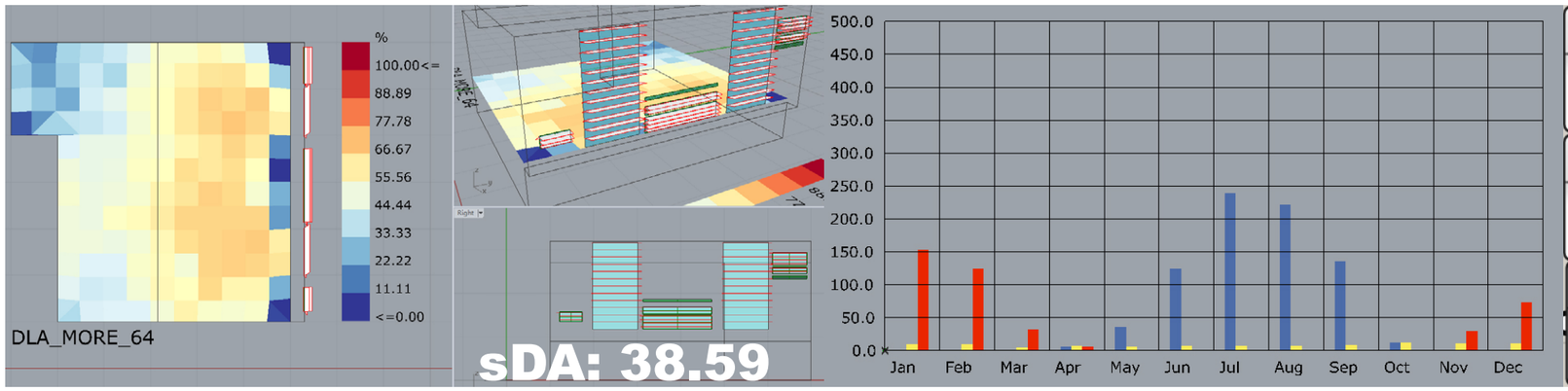
Total Cooling
697.351858

Total Heating
340.388088

Total Load	{0}
0	1163.956258

1163

Variation1: 12 blinds,
not enough Daylighting,
431KWh Total Load Decreasing than Senario without Shading given Coolding load Brought down by Shading.



Total Elec. Lighting
121.264201

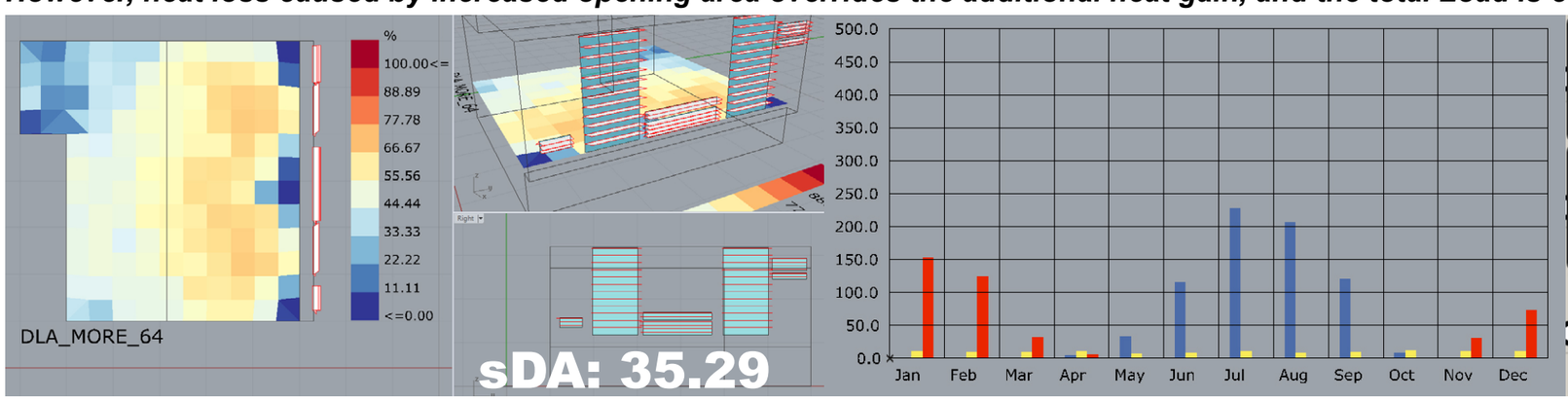
Total Cooling
747.180808

Total Heating
418.01961

Total Load	{0}
0	1286.464619

1286

Variation 2: 12 blinds, adding 5 Openings with shading and 2 Smaller Openings without shading in order to improve solar gain in Winter and achieve higher Daylighting level for whole year.
However, heat loss caused by increased opening area overrides the additional heat gain, and the total Load is even higher.



Total Elec. Lighting
123.965697

Total Cooling
719.302631

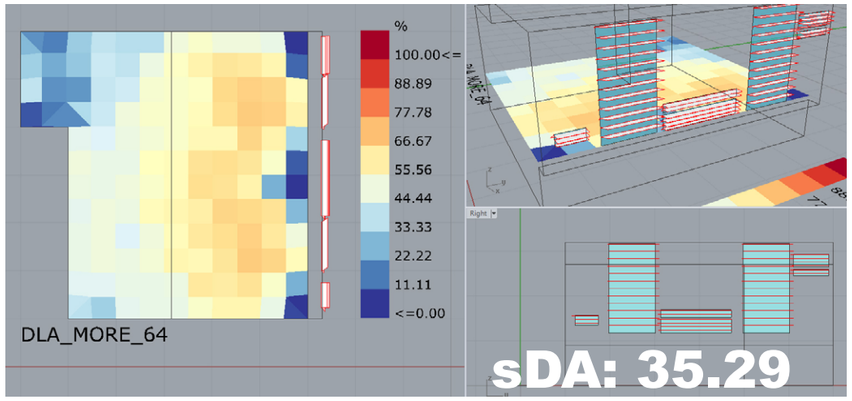
Total Heating
422.070112

Total Load	{0}
0	1265.33844

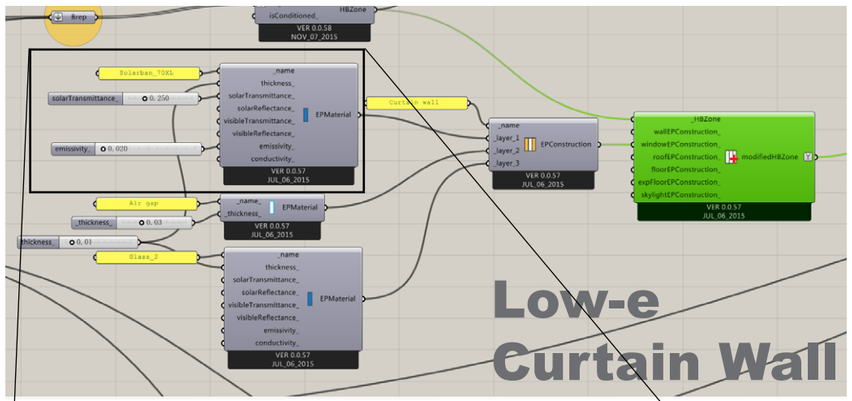
1265

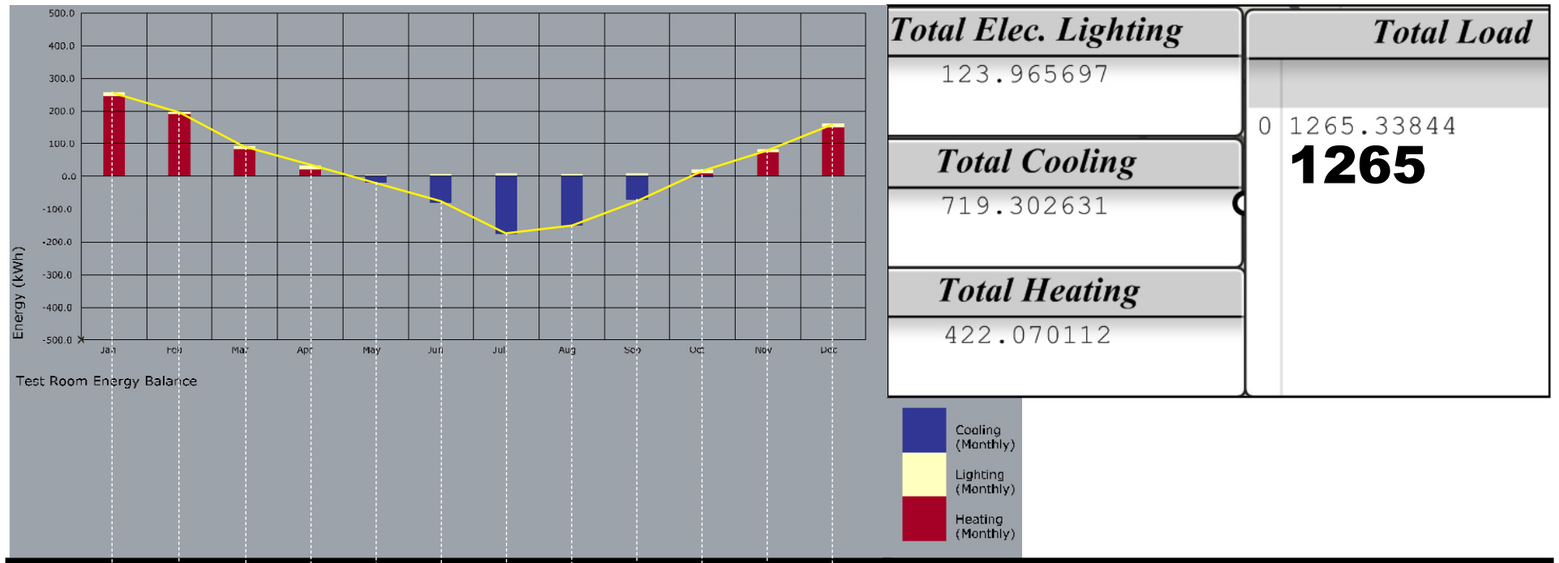
Variation 3: 12blinds, taking out 2 Smaller openings without shading. Daylighting Level Decreased slightly, and Total Load Decreased Slightly.
From Variation2 &3, the higher Window/Wall Ratio is, the Better Daylighting Level is, the more Net Heat Loss(Heat Loss During Winter -Heat Gain During Winter) is, It's important to find a balance between Those 2 Factors to achieve a optimal Design.

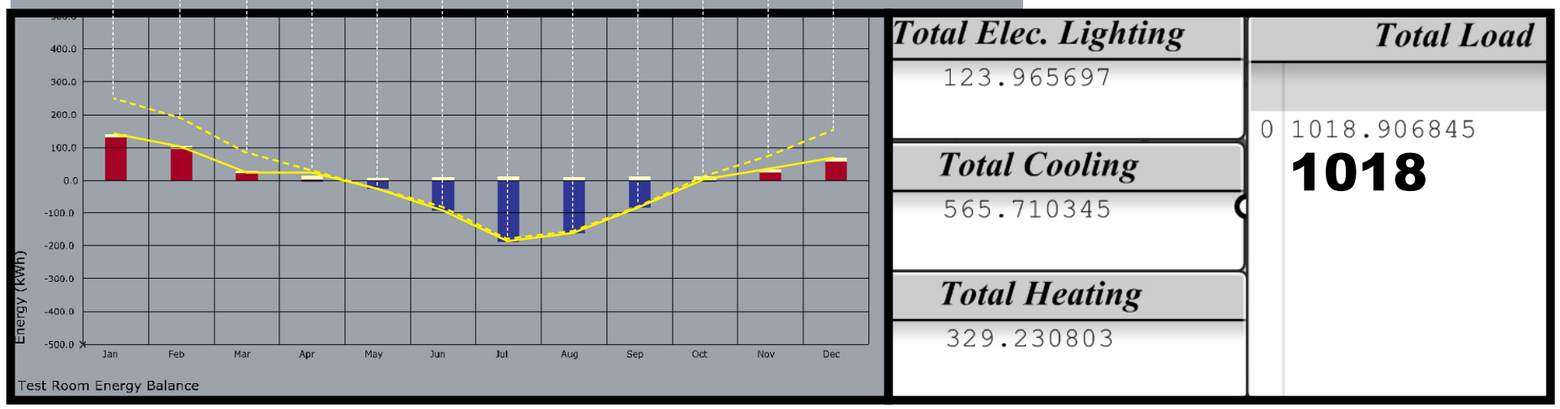
Final Result:



+







Variation 4: 12blinds, Assign All Windows as Double Pane Curtain Wall with Low-e Coating on Surface2. Total Load Decreased Dramatically.

From Variation4, Material has big impact on Total Load.