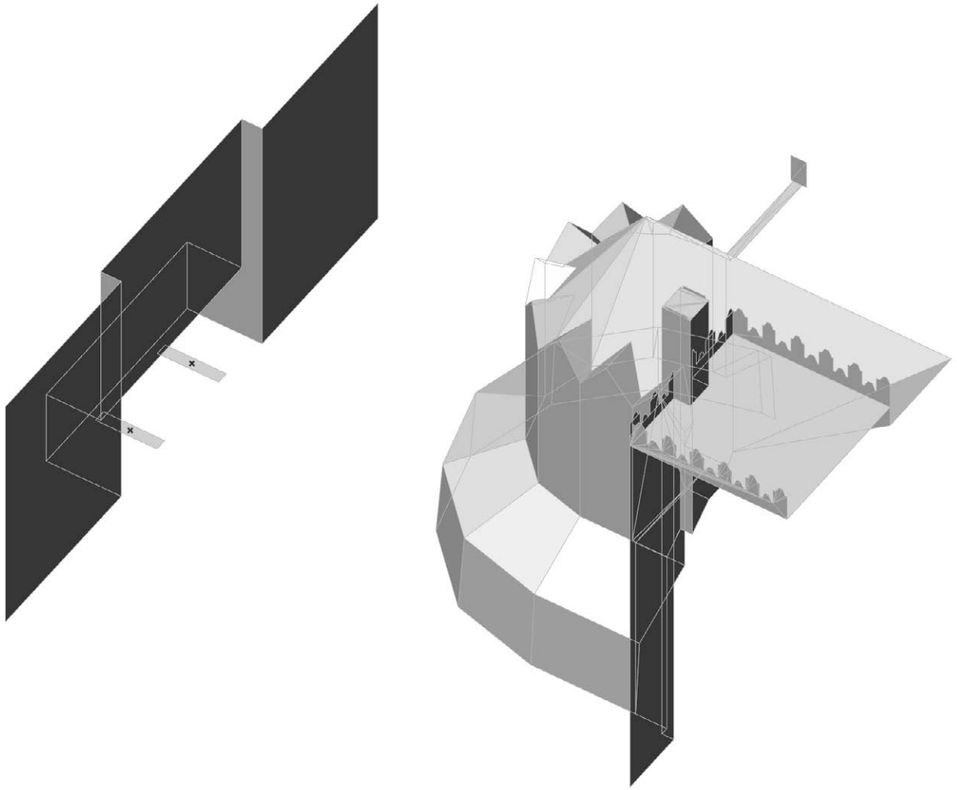
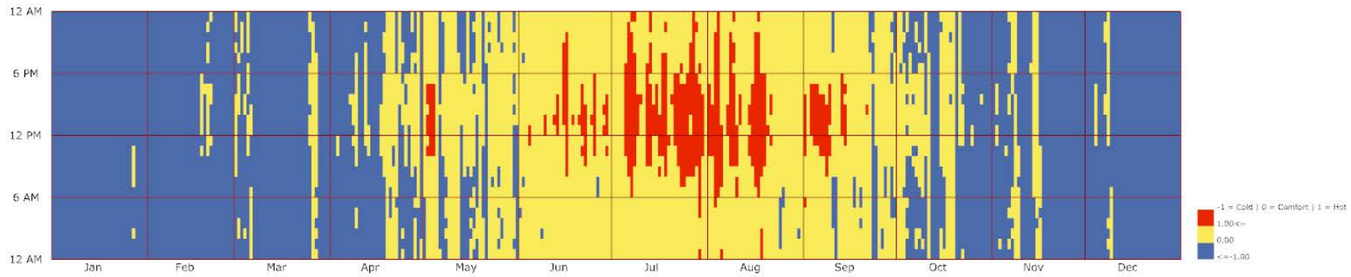
UTCI Before adding the shelter

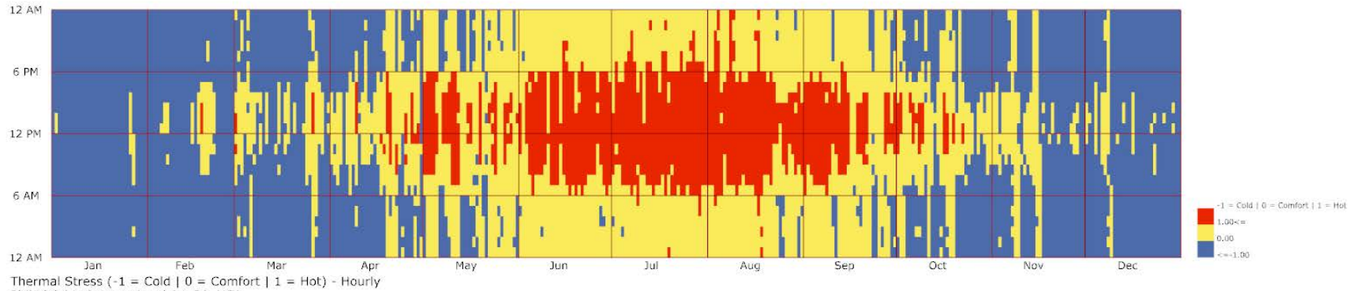


The site is located at south side of the Meyerson hall. The area I choose to study is the two seats at the entrance there. Before I design the shelter I studied the UTCI comfort stress for that area. The center points of the two seats are selected as the position of the simulation.

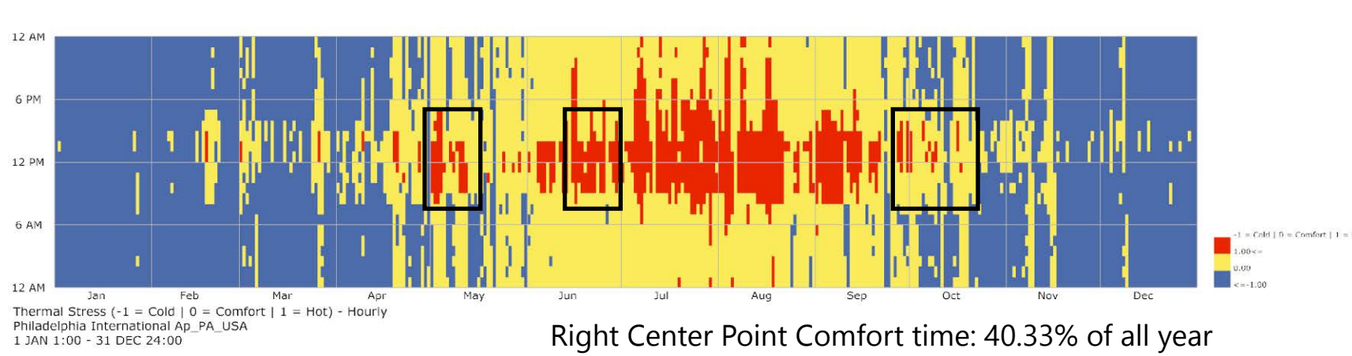
From the result, compared the perfect shading situation and the current situation, most of the uncomfort condition appears in May, June and Octber and is selected by the black square.



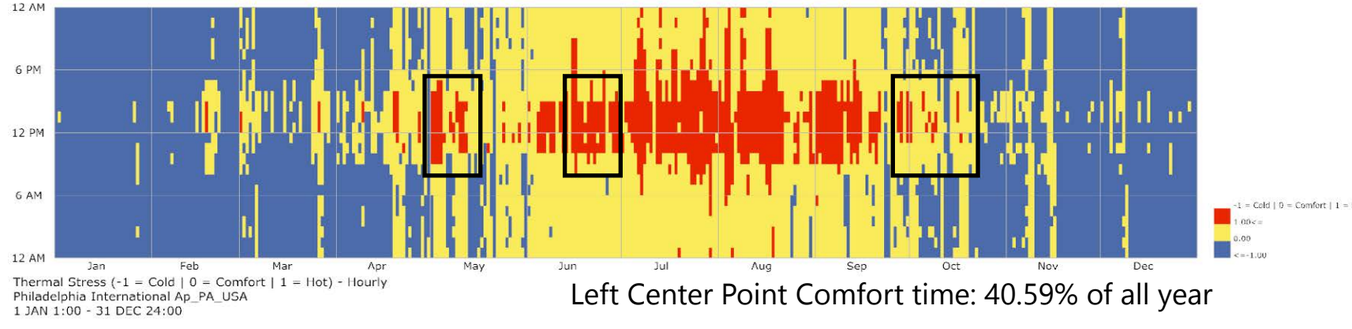
All Shaded Comfort time: 41.27% of all year



No Shading Comfort time: 37.34% of all year

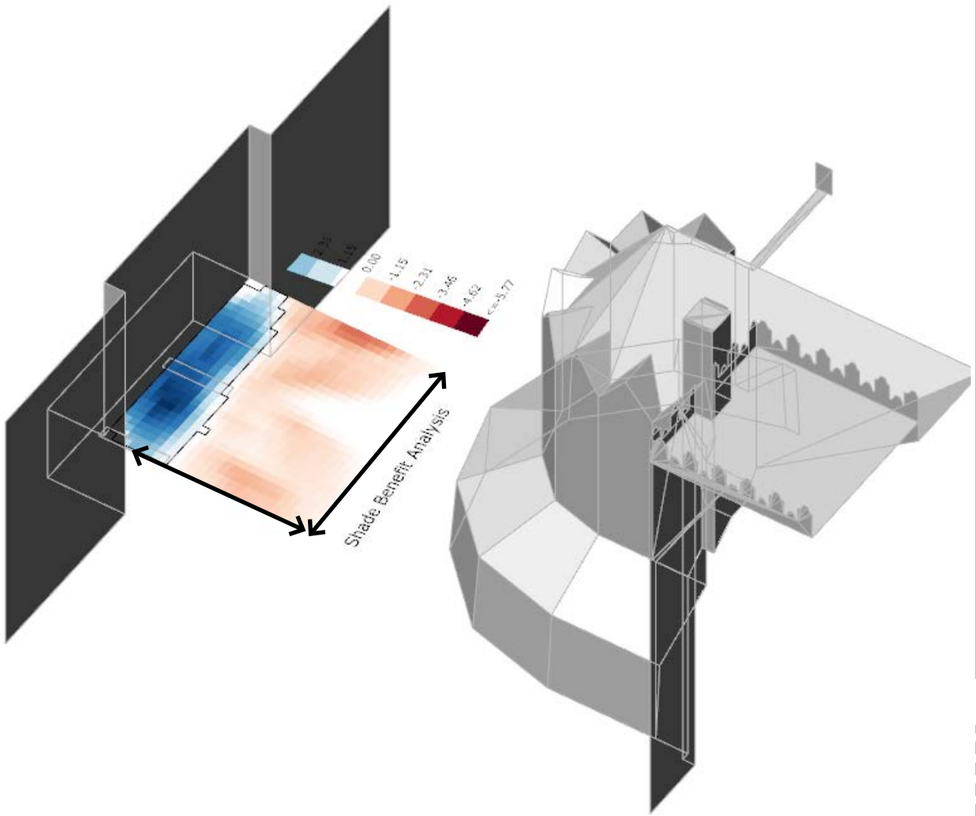


Right Center Point Comfort time: 40.33% of all year



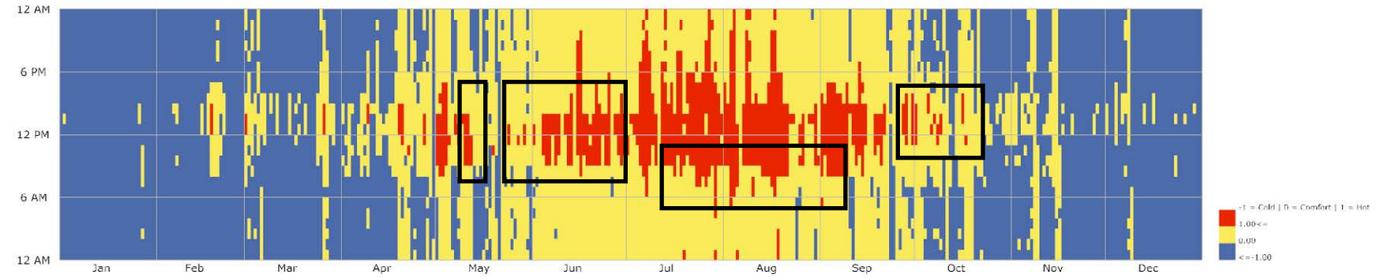
Left Center Point Comfort time: 40.59% of all year

Shelter Option1:

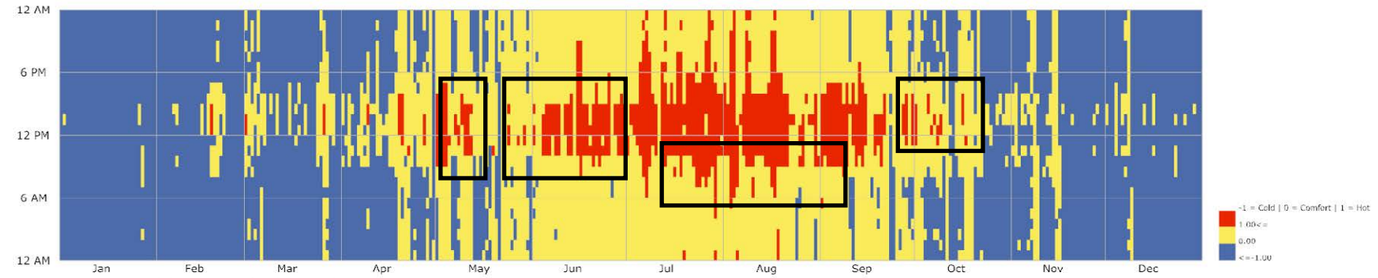


I start with the horizontal shelting piece and employ the shade benefit component to optimize the shelter. The Black polyline showed above is the geometry result of all benefit area in the former borizontal piece. The two diagrams on the right bottom are the UTCI result of the optimized horizontal shelting piece, from which we can know that they help to change the thermal conditions to comfort in May, June and October noon time and July, August afternoon time.

Before

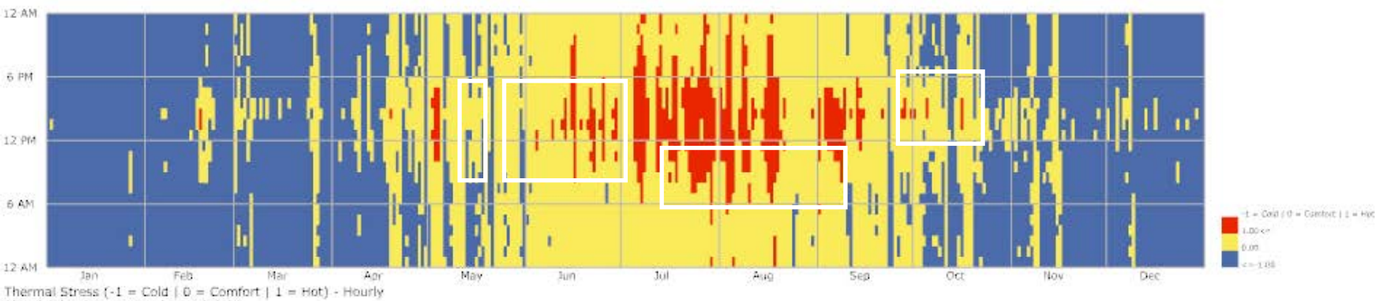


Right Center Point Comfort time: 40.33% of all year

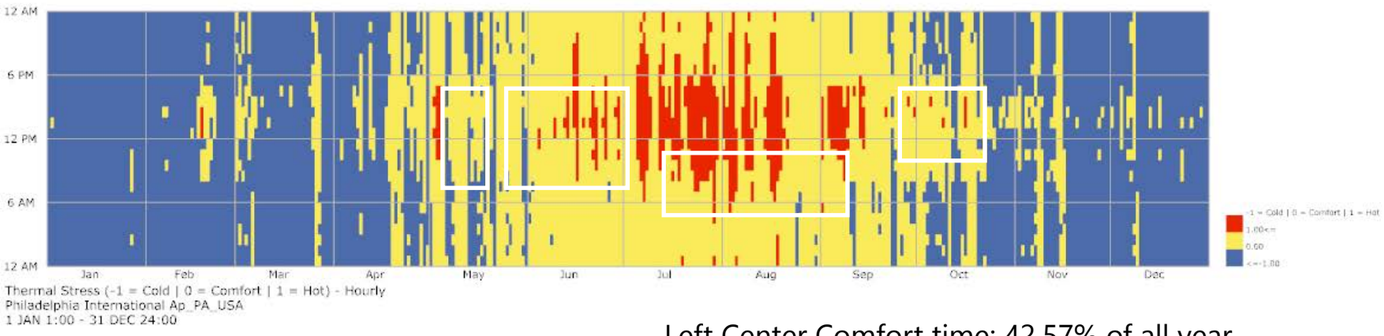


Left Center Point Comfort time: 42.57% of all year

After

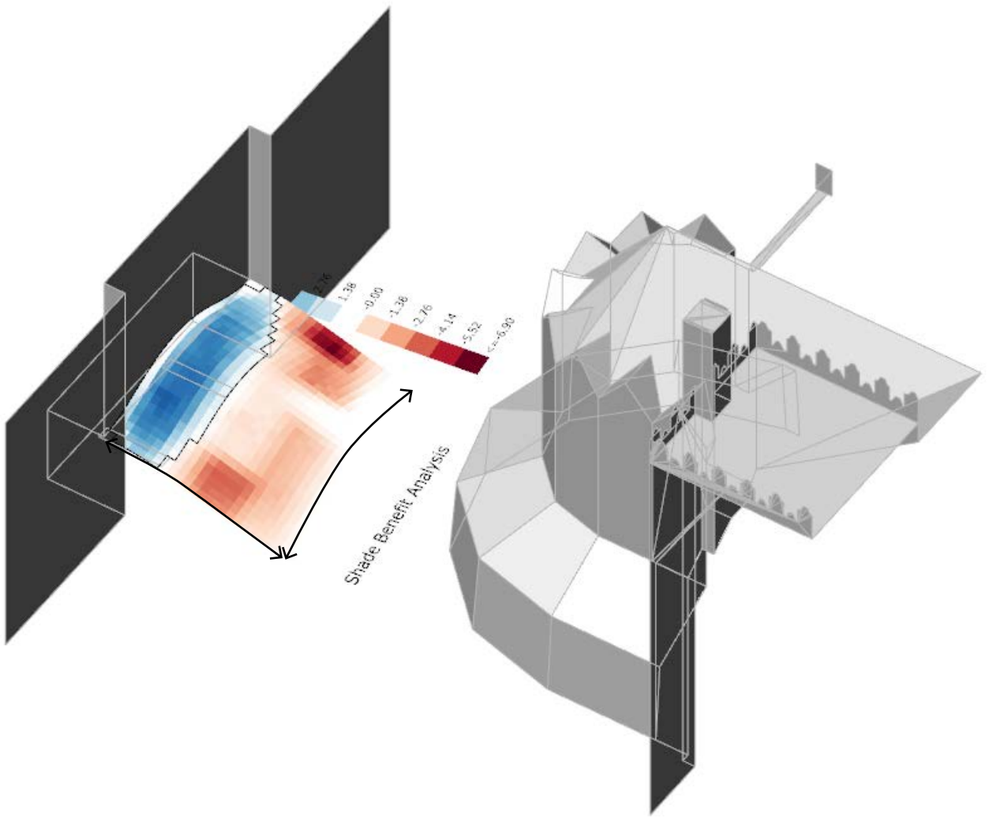


Right Center Comfort time: 42.57% of all year



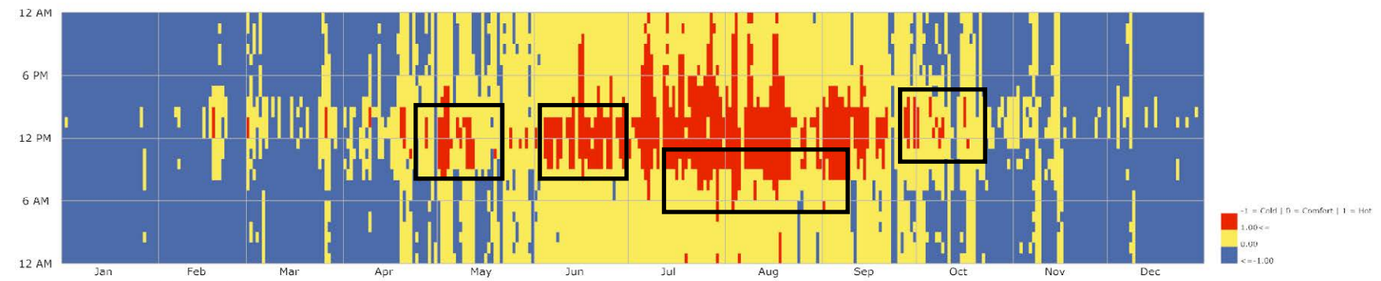
Left Center Comfort time: 42.57% of all year

Shelter Option2:

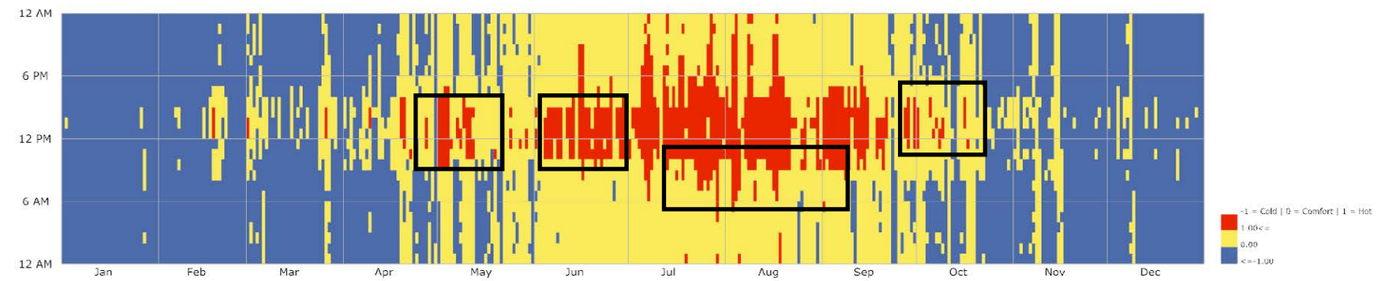


The I test another shelter piece which is more 3d with a bending section and going down by 4 feet from the school building to the end. The Black polyline showed above is the geometry result of all benefit area in this piece. The two diagrams on the right bottom are the UTCI result of the optimized shelting piece, from which we can know that they help to change the thermal conditions to comfort in May, June and October noon time and July, August afternoon time. And there is no much differences comparing the two positions I am studying here.

Before

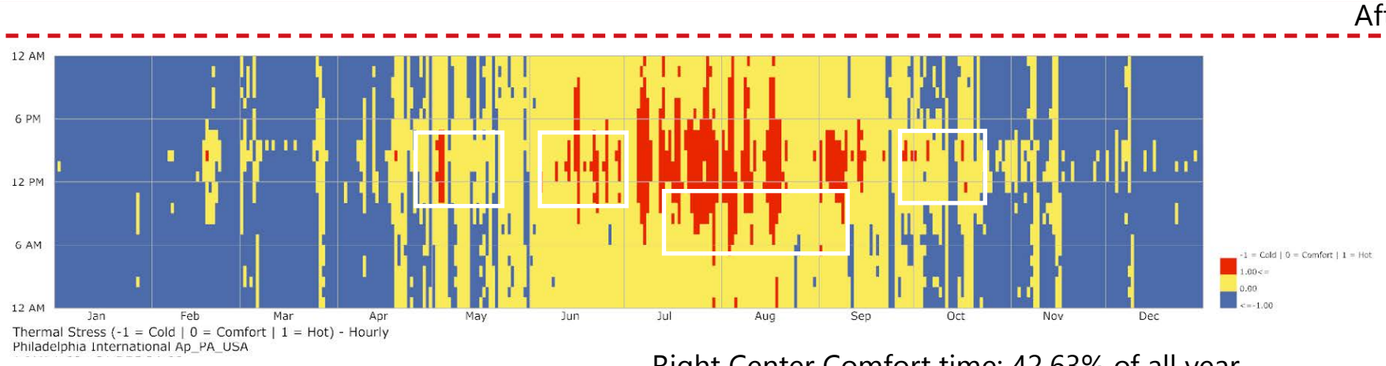


Right Center Point Comfort time: 40.33% of all year

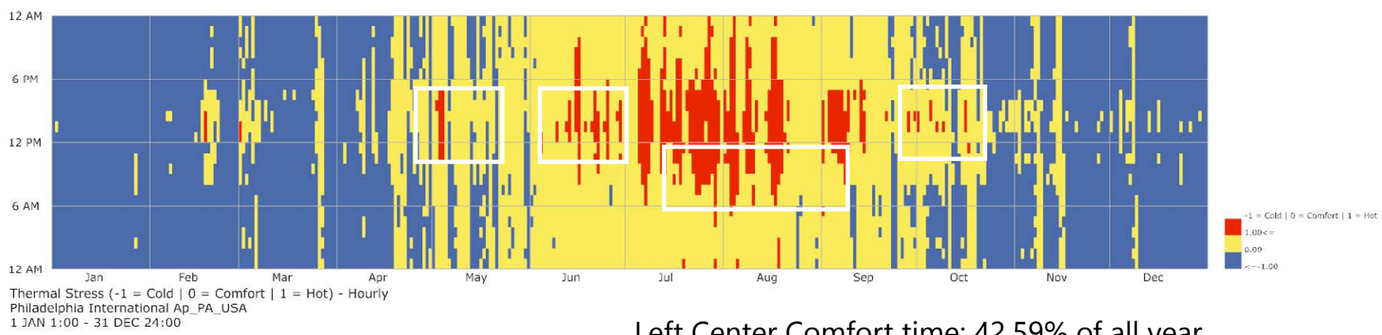


Left Center Comfort time: 40.59% of all year

After

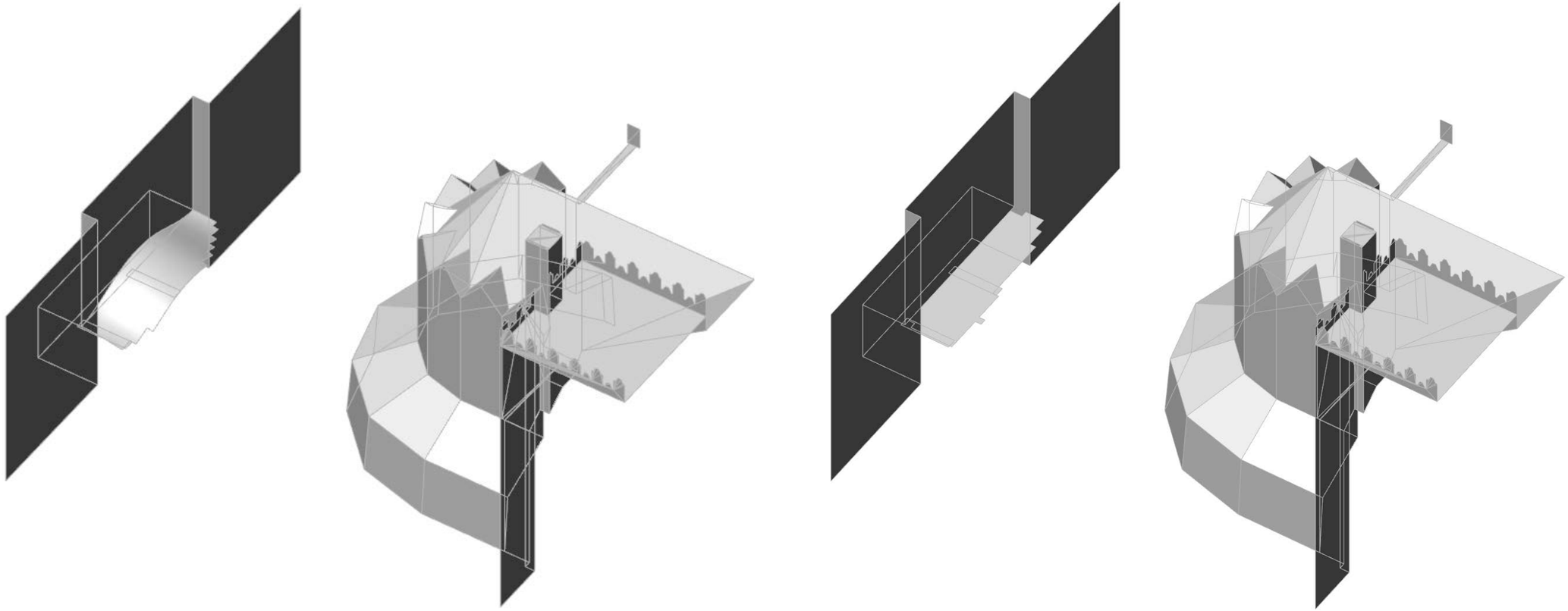


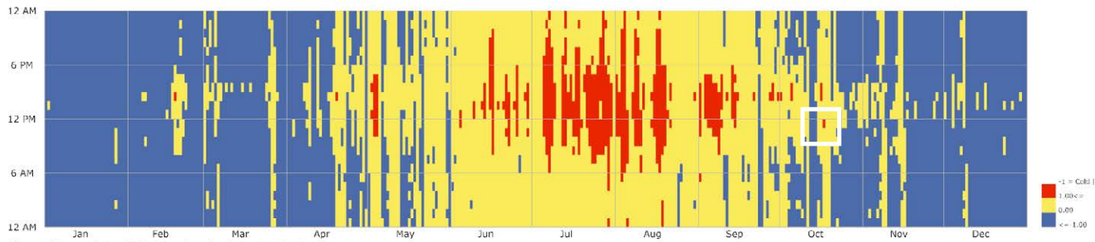
Right Center Comfort time: 42.63% of all year



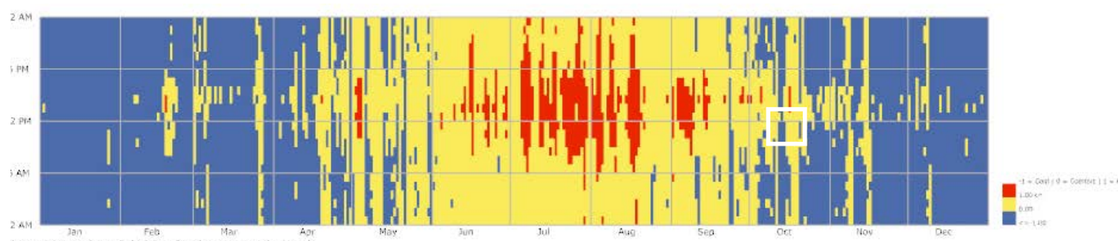
Left Center Comfort time: 42.59% of all year

Result:

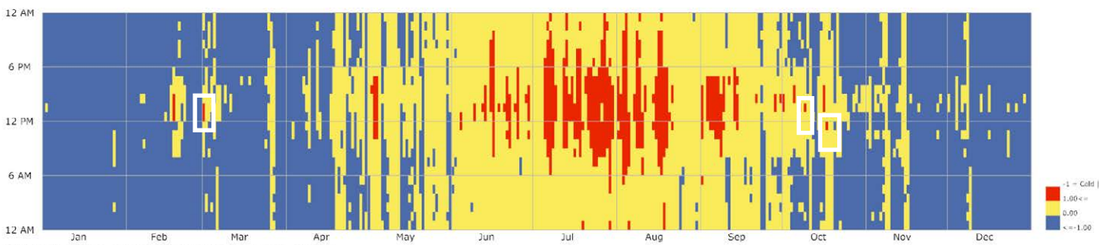




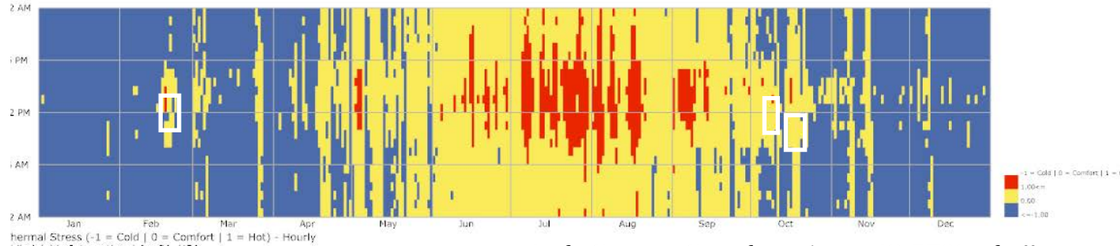
Right Center Comfort time: 42.63% of all year



Right Center Comfort time: 42.57% of all year



Left Center Comfort time: 42.59% of all year



Left Center Comfort time: 42.57% of all year