

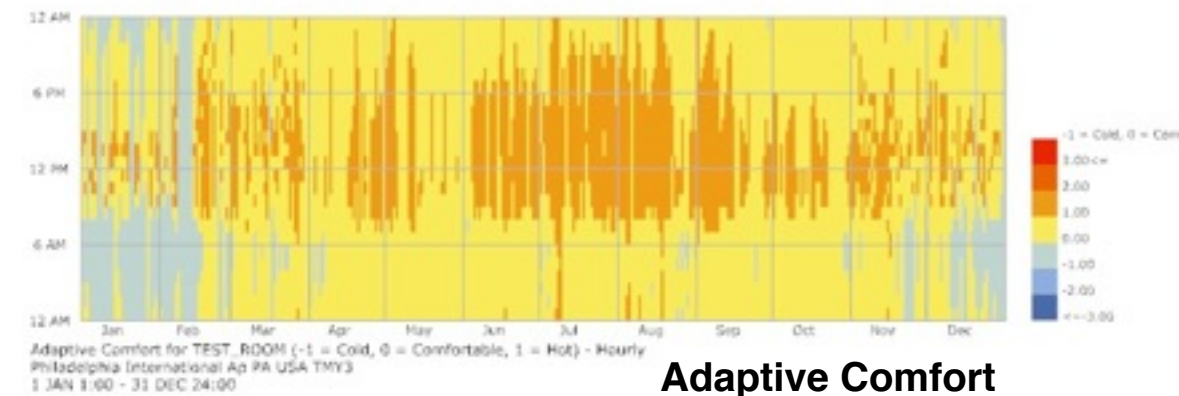
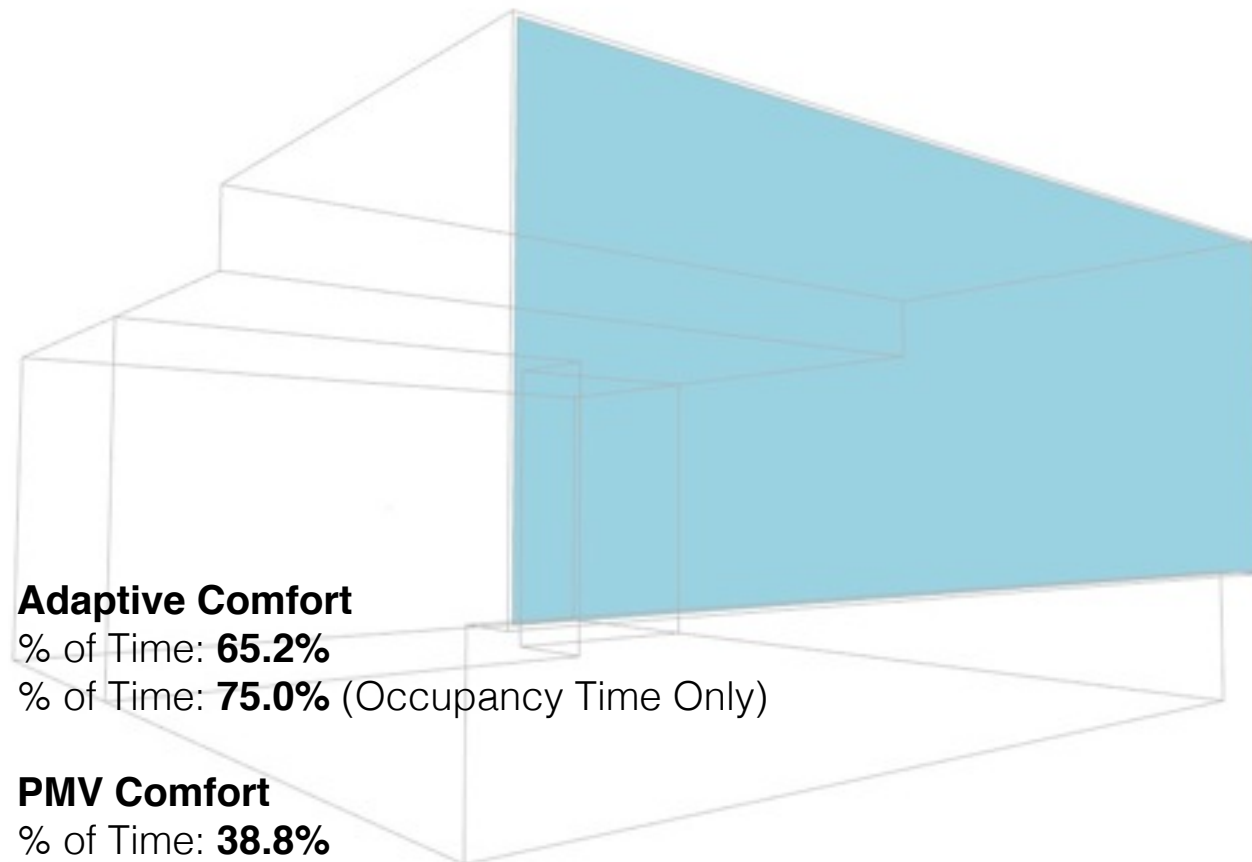
Shading Grid

Natural Ventilation and Indoor Comfort #2

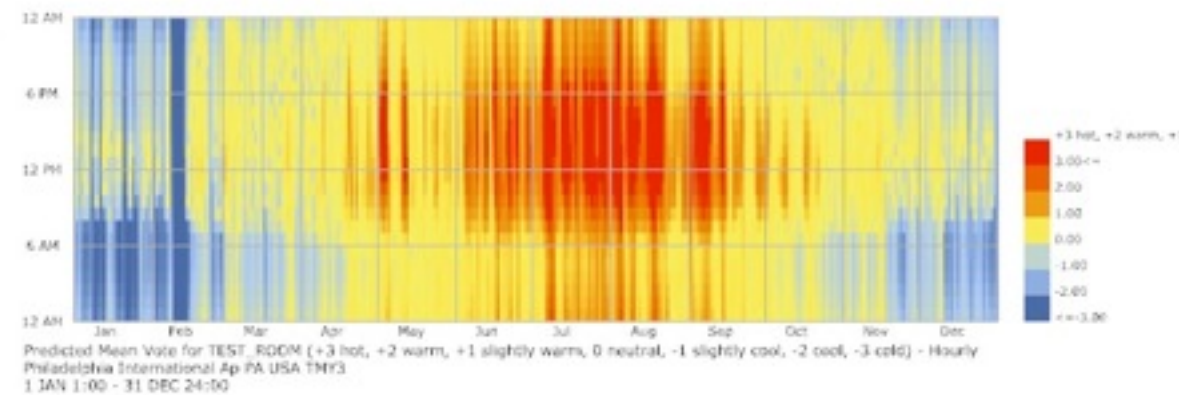
JeeEun Lee

11/23/15

0. Without Shading

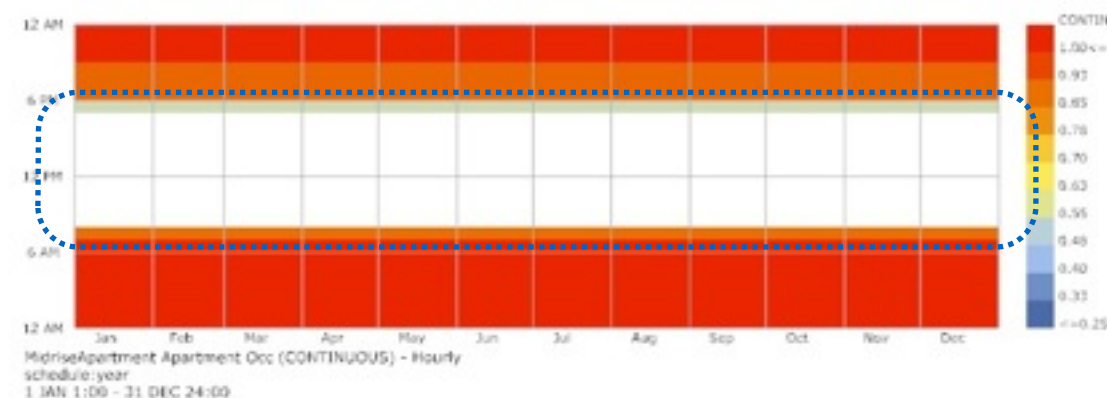


Adaptive Comfort



PMV Comfort

1. Strategy_Occupancy Schedule



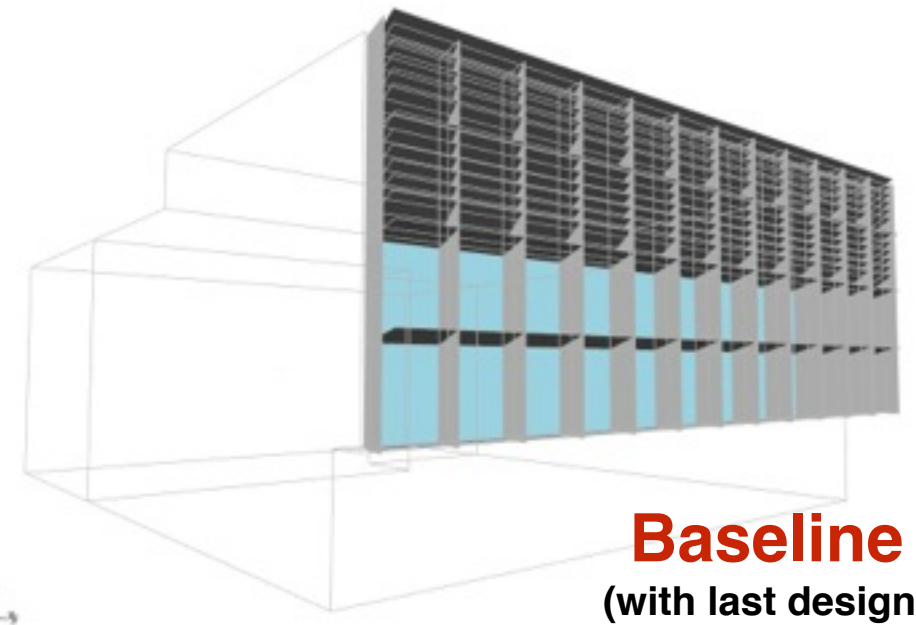
(without Shading)

By considering the times when occupancy is below 50% as unoccupied hours, the occupancy schedule was regenerated.

1. Strategy_Optimization

Optimizing

By changing shading devices' properties, multiple comfort value has been generated. It is easy to compare with other cases and figure out which case is the best.



Baseline
(with last design)

Step1

Optimizing
Number of Shading

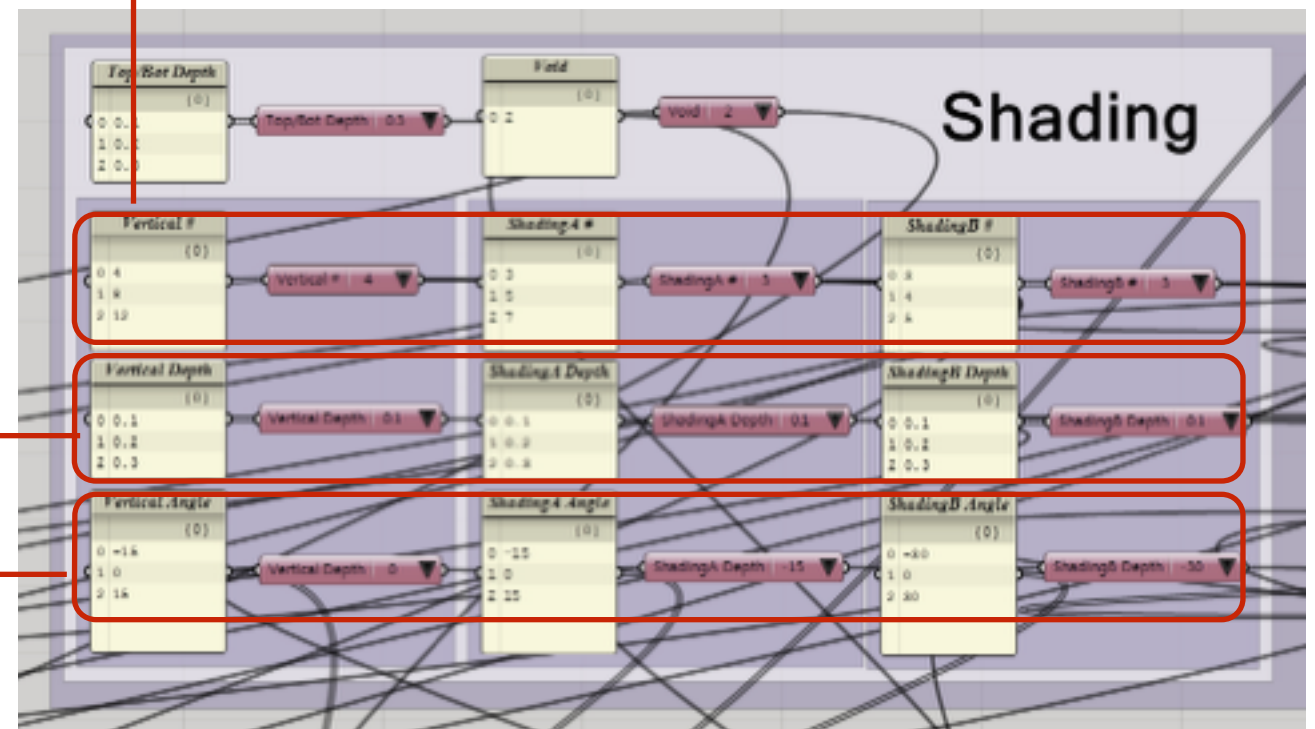
File Name	Adaptive Comfort %	Adaptive Comfort % (Occ)	PMV Comfort %	PMV Comfort % (Occ)
0_1_000000000	0.00	0.00	0.00	0.00
1_1_000000000	0.00	0.00	0.00	0.00
2_1_000000000	0.00	0.00	0.00	0.00
3_1_000000000	0.00	0.00	0.00	0.00
4_1_000000000	0.00	0.00	0.00	0.00
5_1_000000000	0.00	0.00	0.00	0.00
6_1_000000000	0.00	0.00	0.00	0.00
7_1_000000000	0.00	0.00	0.00	0.00
8_1_000000000	0.00	0.00	0.00	0.00
9_1_000000000	0.00	0.00	0.00	0.00
10_1_000000000	0.00	0.00	0.00	0.00
11_1_000000000	0.00	0.00	0.00	0.00
12_1_000000000	0.00	0.00	0.00	0.00
13_1_000000000	0.00	0.00	0.00	0.00
14_1_000000000	0.00	0.00	0.00	0.00
15_1_000000000	0.00	0.00	0.00	0.00
16_1_000000000	0.00	0.00	0.00	0.00
17_1_000000000	0.00	0.00	0.00	0.00
18_1_000000000	0.00	0.00	0.00	0.00
19_1_000000000	0.00	0.00	0.00	0.00
20_1_000000000	0.00	0.00	0.00	0.00
21_1_000000000	0.00	0.00	0.00	0.00
22_1_000000000	0.00	0.00	0.00	0.00
23_1_000000000	0.00	0.00	0.00	0.00
24_1_000000000	0.00	0.00	0.00	0.00
25_1_000000000	0.00	0.00	0.00	0.00
26_1_000000000	0.00	0.00	0.00	0.00
27_1_000000000	0.00	0.00	0.00	0.00
28_1_000000000	0.00	0.00	0.00	0.00
29_1_000000000	0.00	0.00	0.00	0.00
30_1_000000000	0.00	0.00	0.00	0.00

Step2

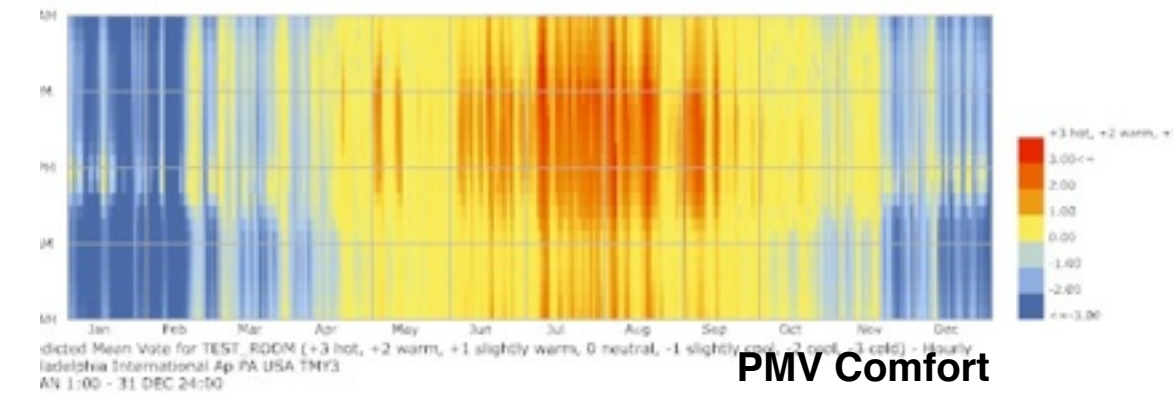
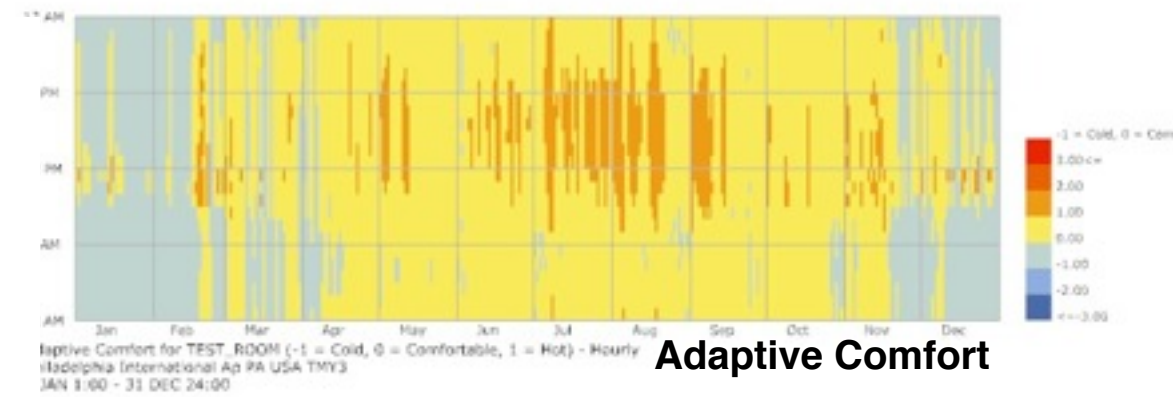
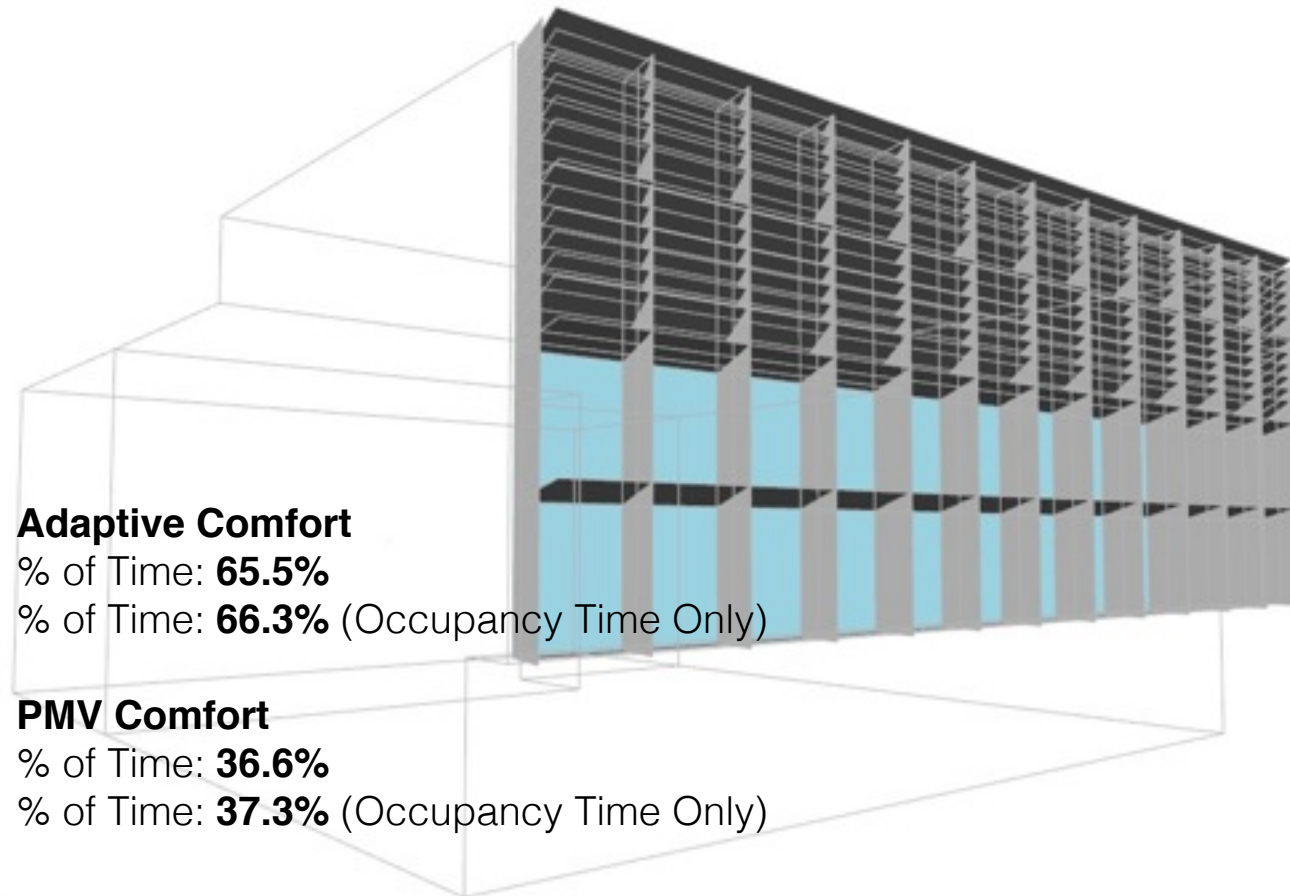
Optimizing
Depth of Shading

Step3

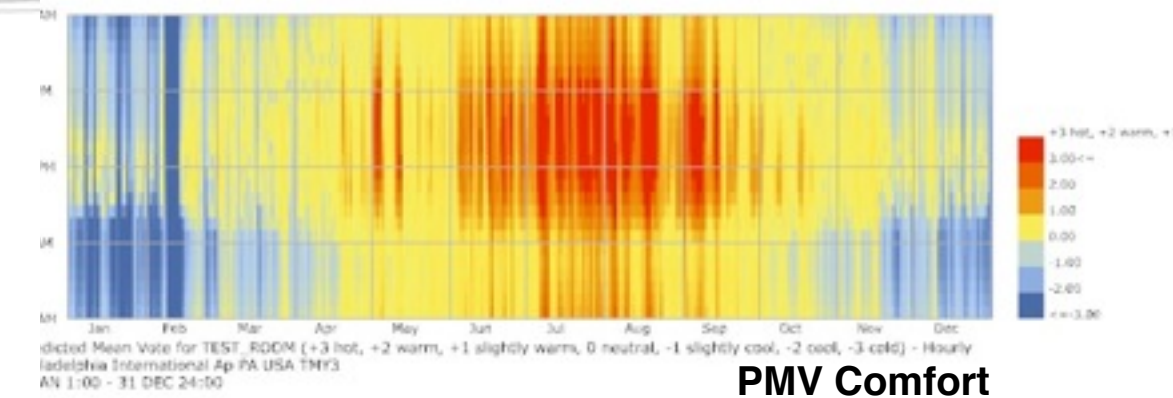
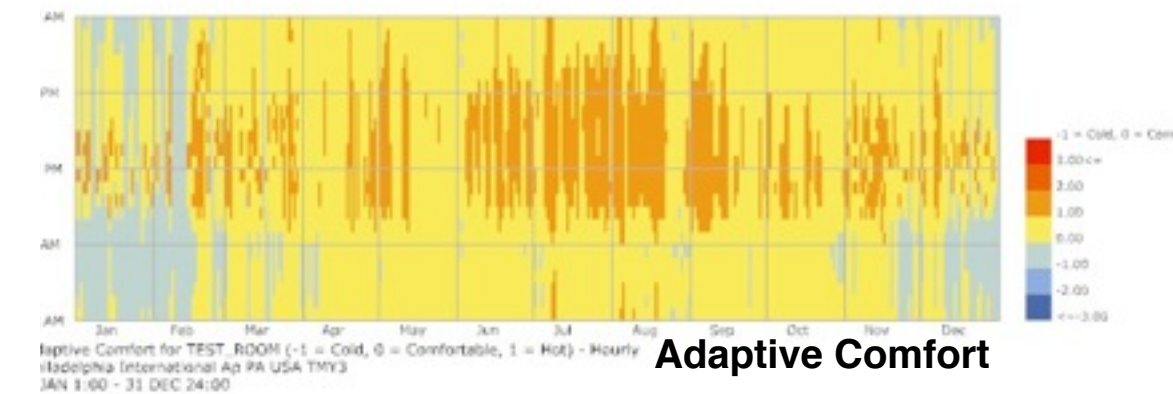
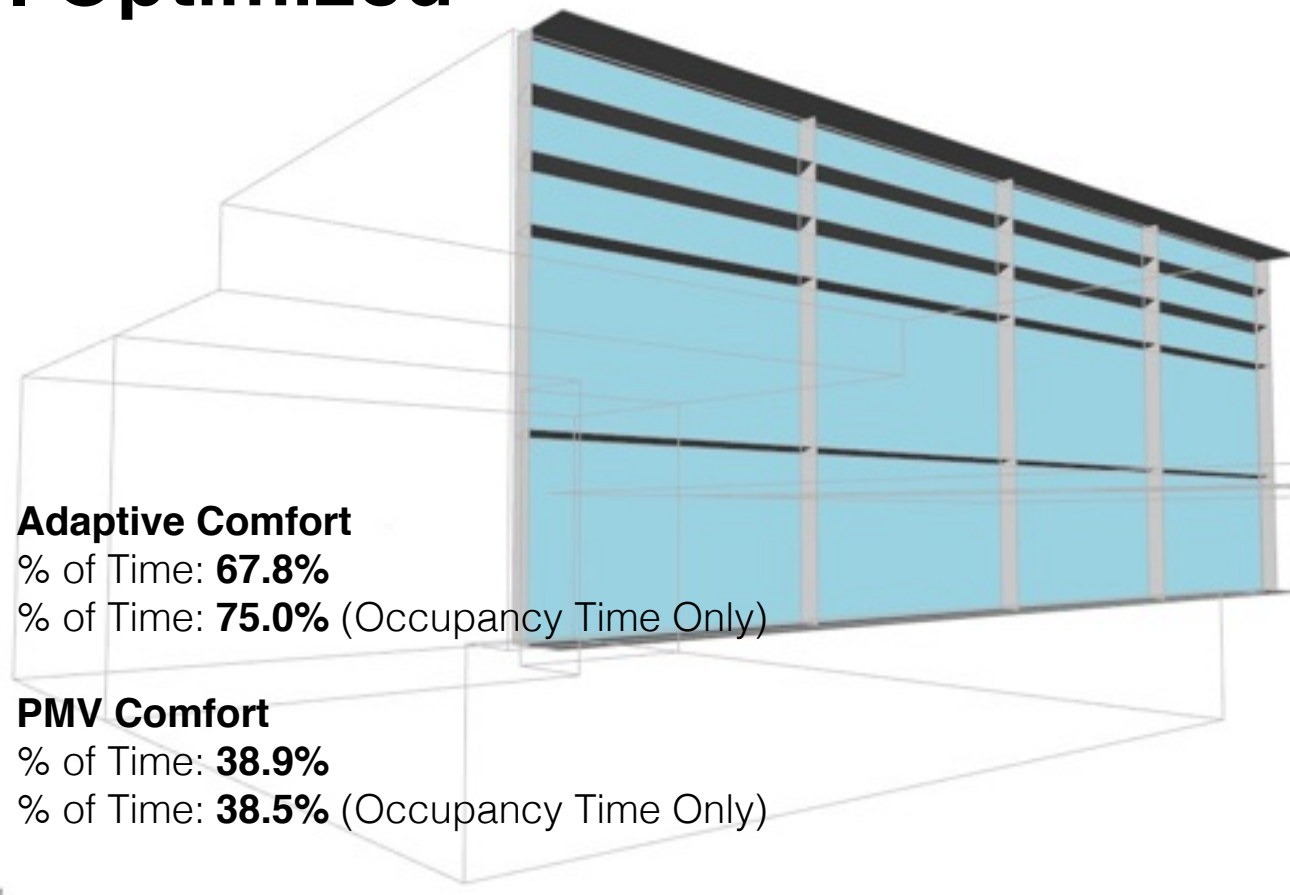
Optimizing
Angle of Shading



2. Baseline

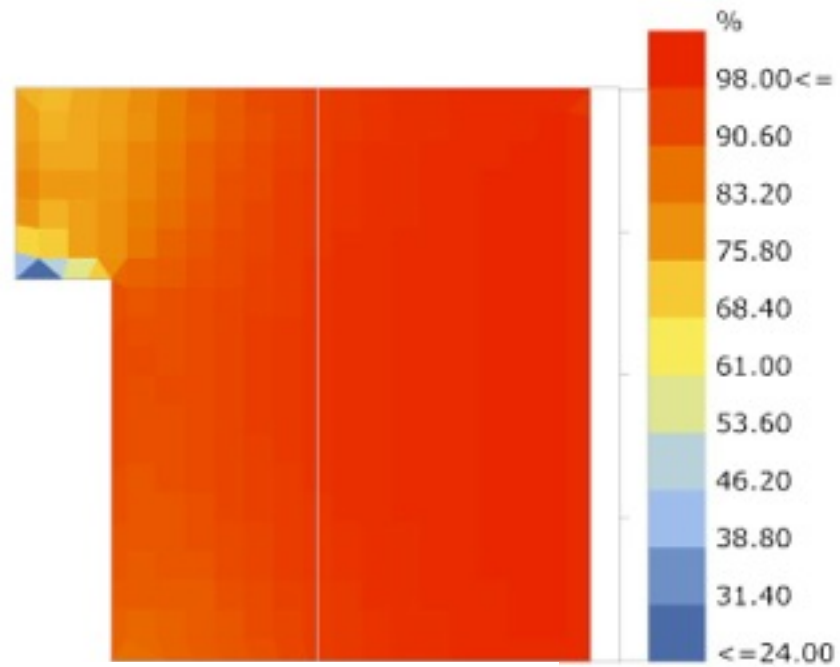


3. Optimized

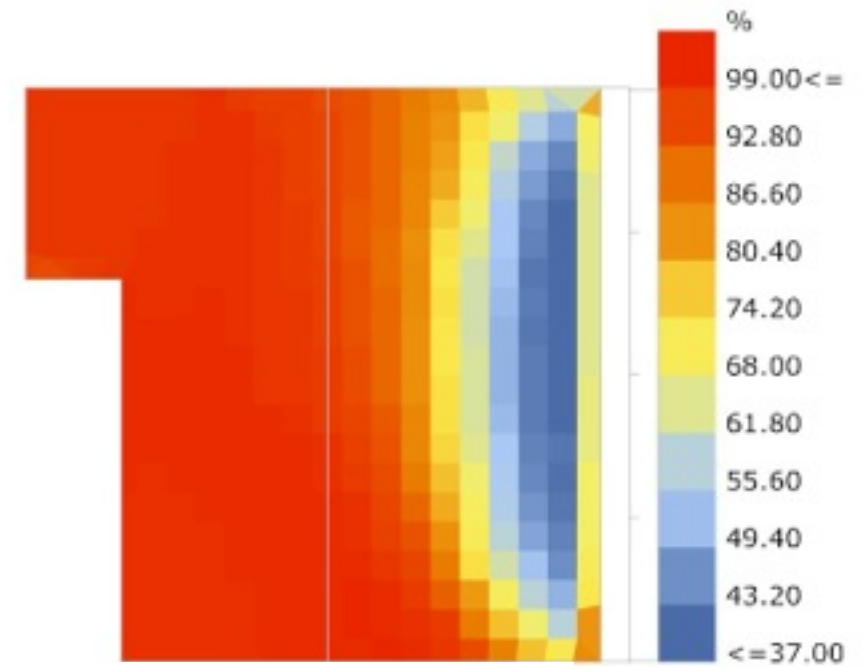


3. Optimized_daylighting

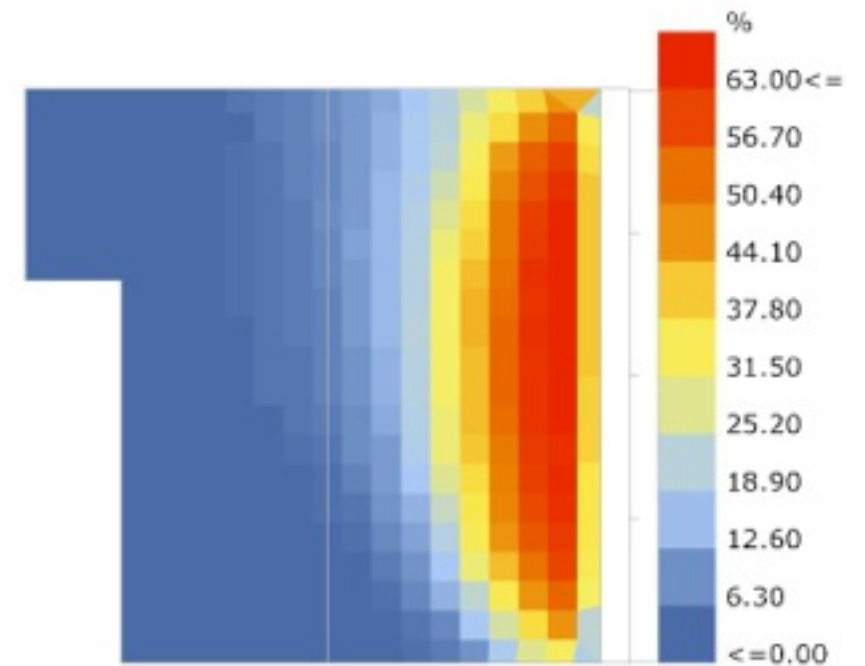
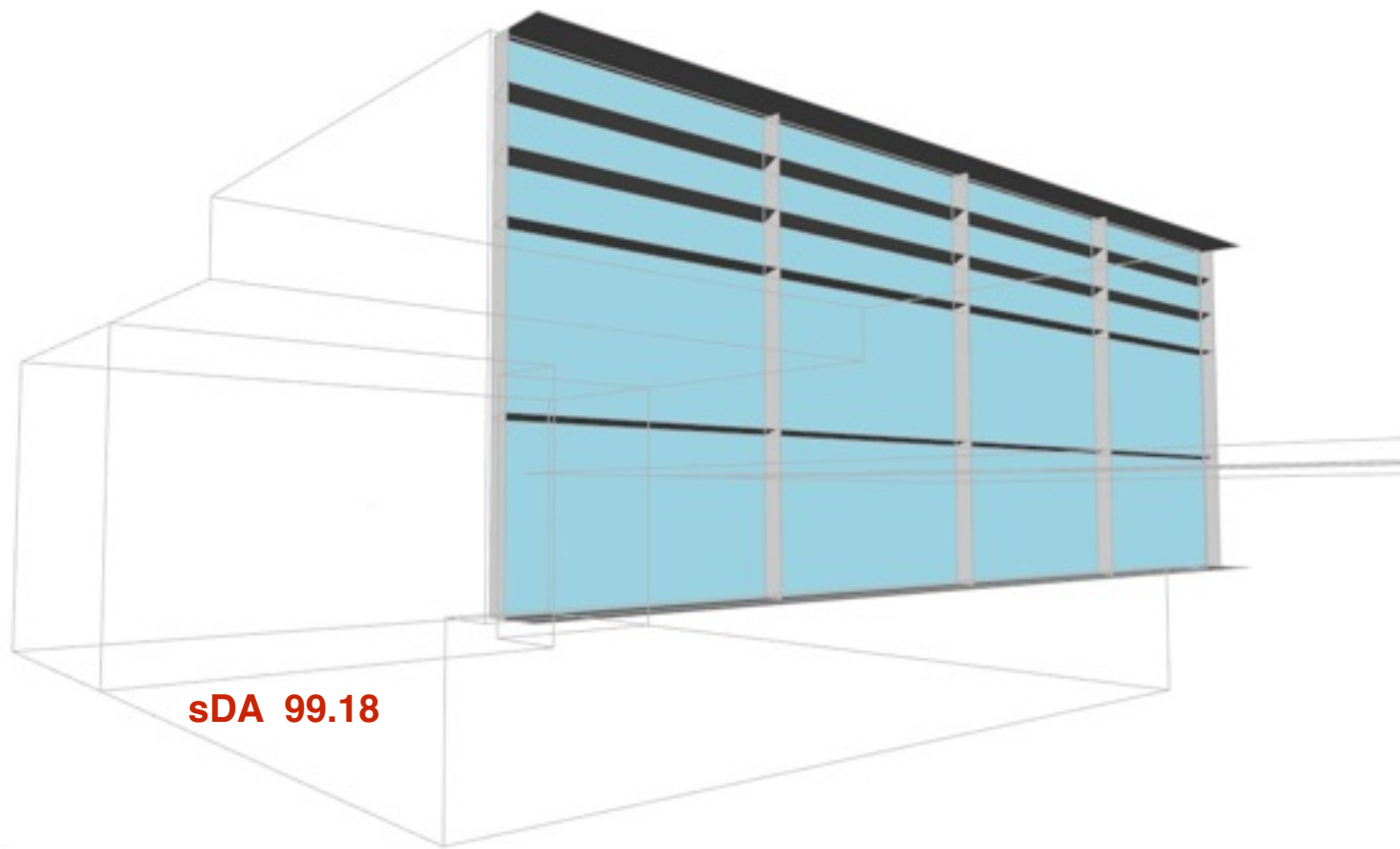
With annual daylighting simulation, the space seems to be well-daylighted space.



Daylighting Autonomy



UCL 100 ~ 2000



UCL > 2000