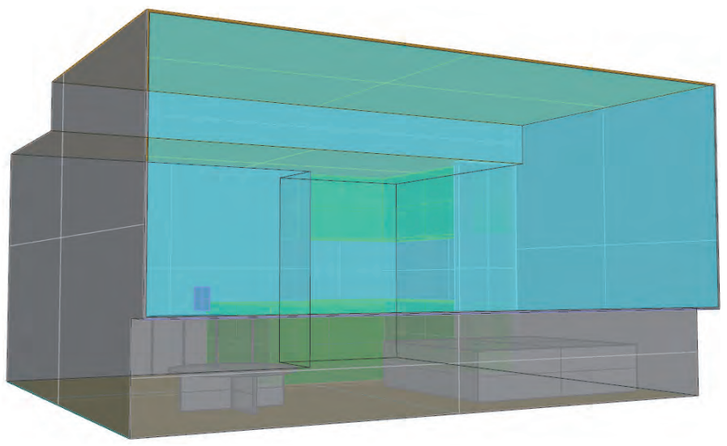
Cylinders Shading
_Integrated_Daylight_and_Energy_simulation

Arch753_energy stimulation2_Shin Yi Kwan

Base case

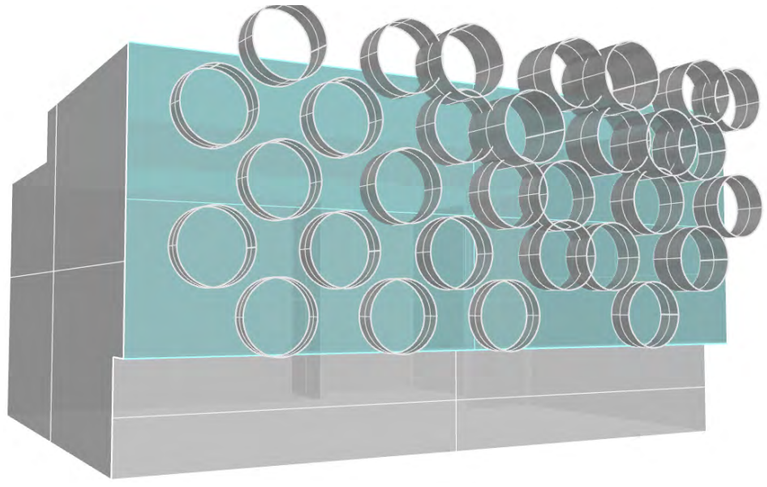


Comfortable based on PMV	35.4%
Comfortable based on Adaptive Comfort	60.5%
Comfortable based on psychroChart	61.0%
Spatial Daylight Autonomy	94.9%

natural ventilation:
minIndoorTempForNatVent 24
maxIndoorTempForNatVent 28

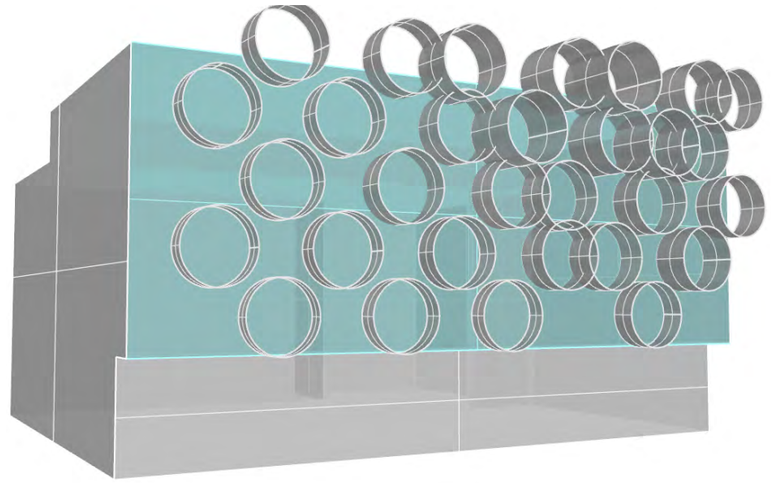
psychrochart :
windspeed 0.25 0.5 and 1
metabolicrate 1 0.9 0.8 and 0.6

Shading design case1



Comfortable based on PMV	37.8%
Comfortable based on Adaptive Comfort	63.1%
Comfortable based on psychroChart	66.2%
Spatial Daylight Autonomy	80.9%

Shading design case with
(winter infiltration schedule)

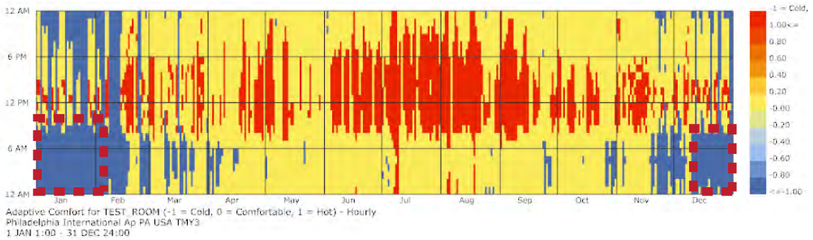


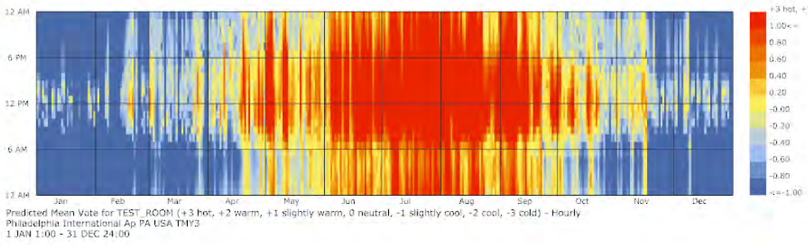
Comfortable based on PMV	38.1%
Comfortable based on Adaptive Comfort	67.7%
Comfortable based on psychroChart	69.0%
Spatial Daylight Autonomy	80.9%

+ infiltration schedule in Jan and Dec
  infiltration rate 0.002 m^3/sm^2

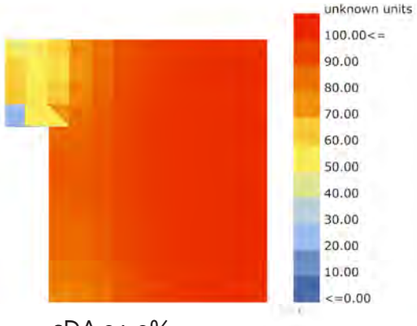
PMV comfort and Adaptive Comfort

Base case



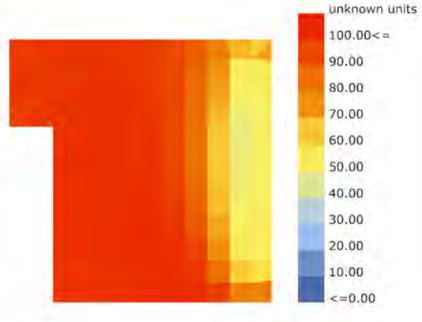


DLA

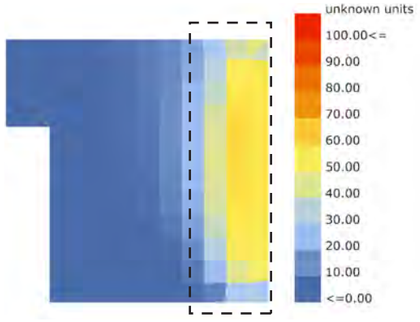


sDA 94.9%

UDLI 100-2000 lux

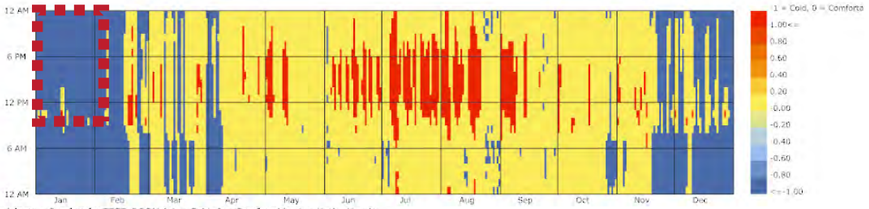


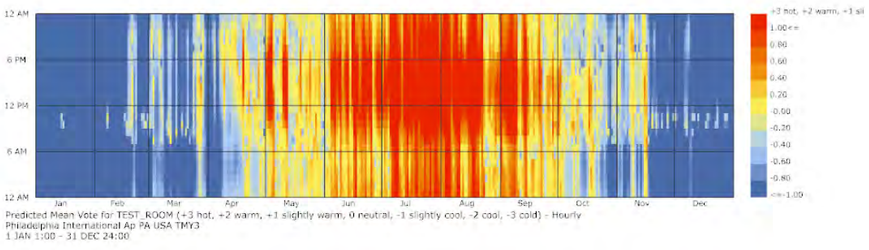
UDLI >2000 lux



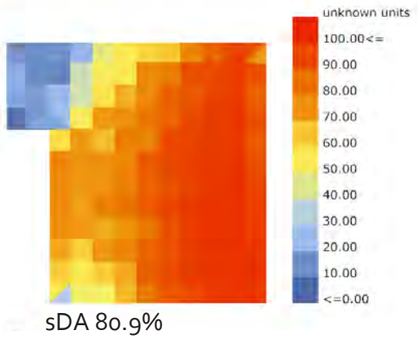
PMV comfort and Adaptive Comfort

Design case1



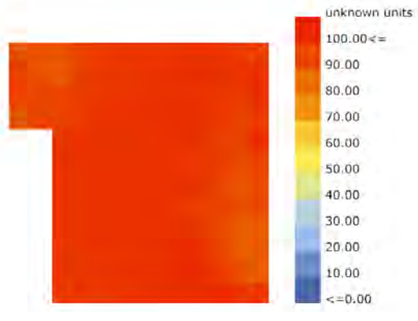


DLA

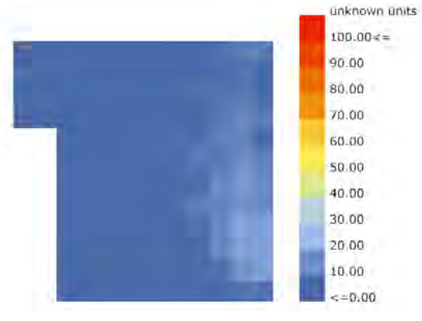


sDA 80.9%

UDLI 100-2000 lux



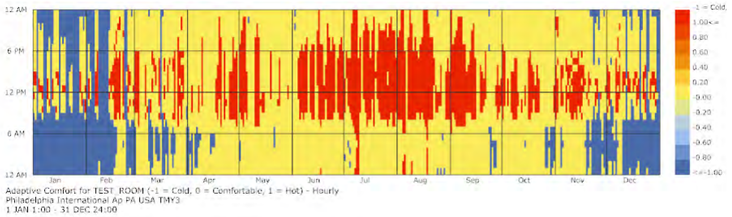
UDLI >2000 lux

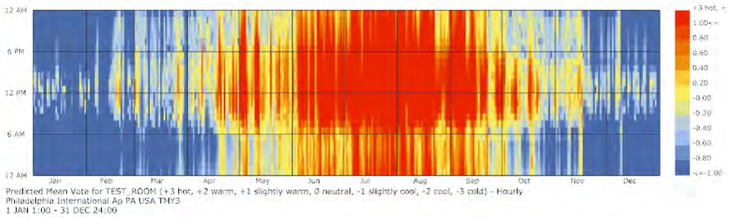


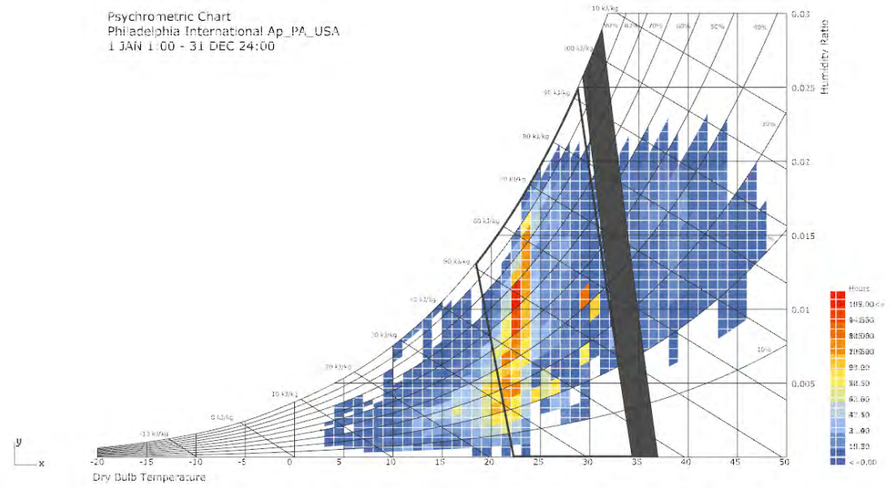
PMV comfort and Adaptive Comfort

Psychrometric Chart

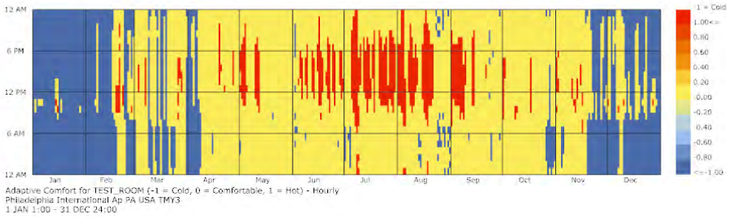
Base case

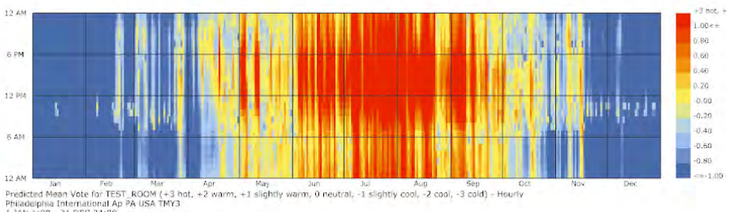


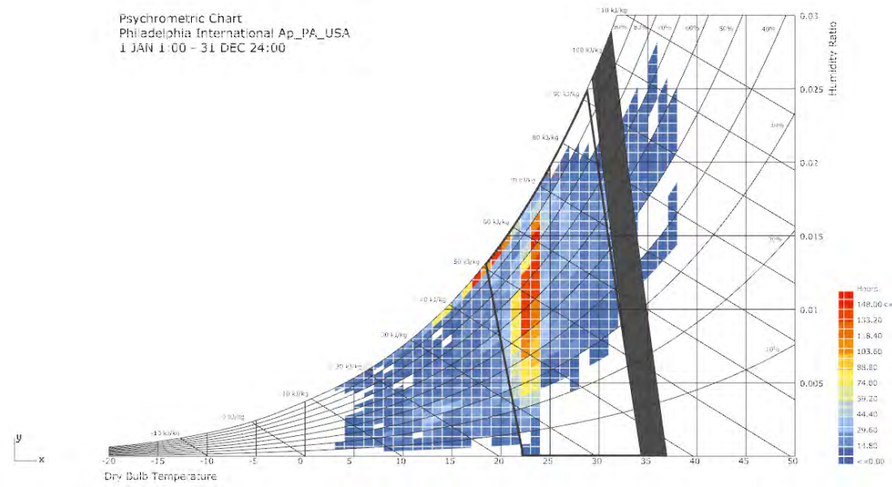




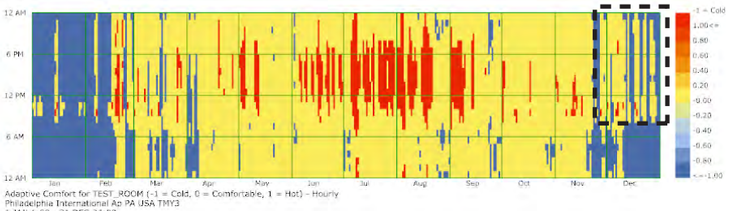
Design case1



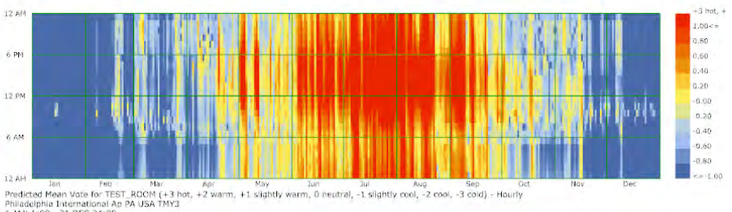


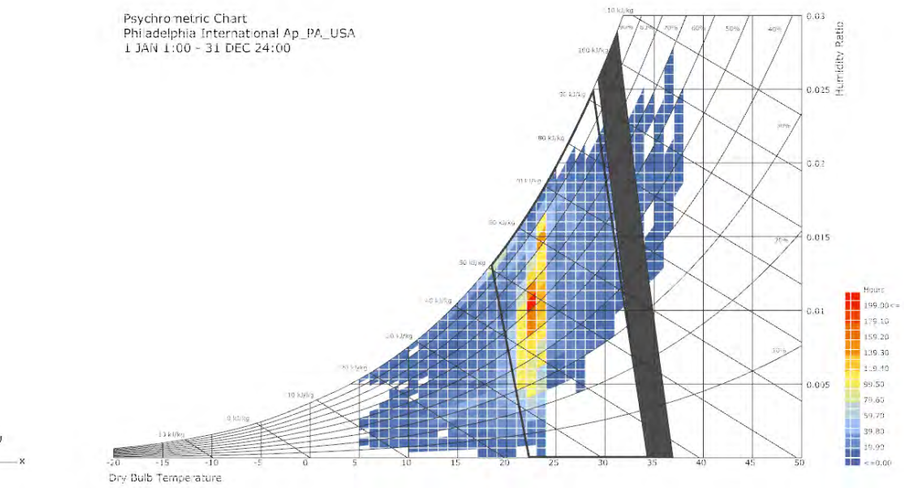


Design case2

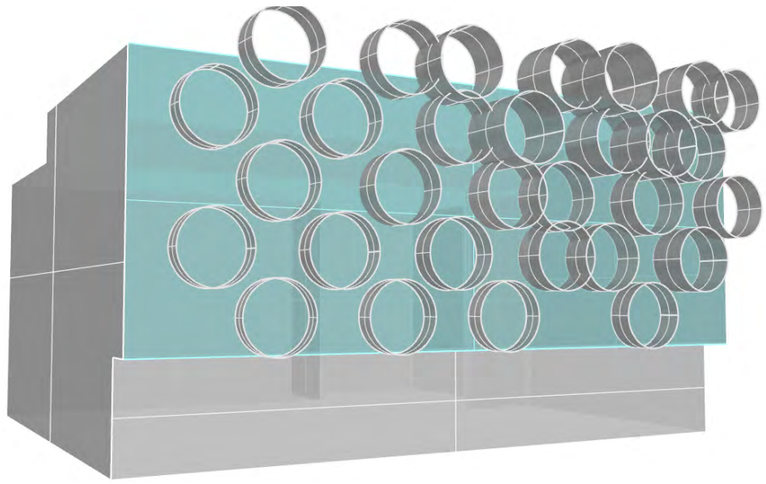


+infiltration schedule





Shading design case with
(winter infiltration schedule)



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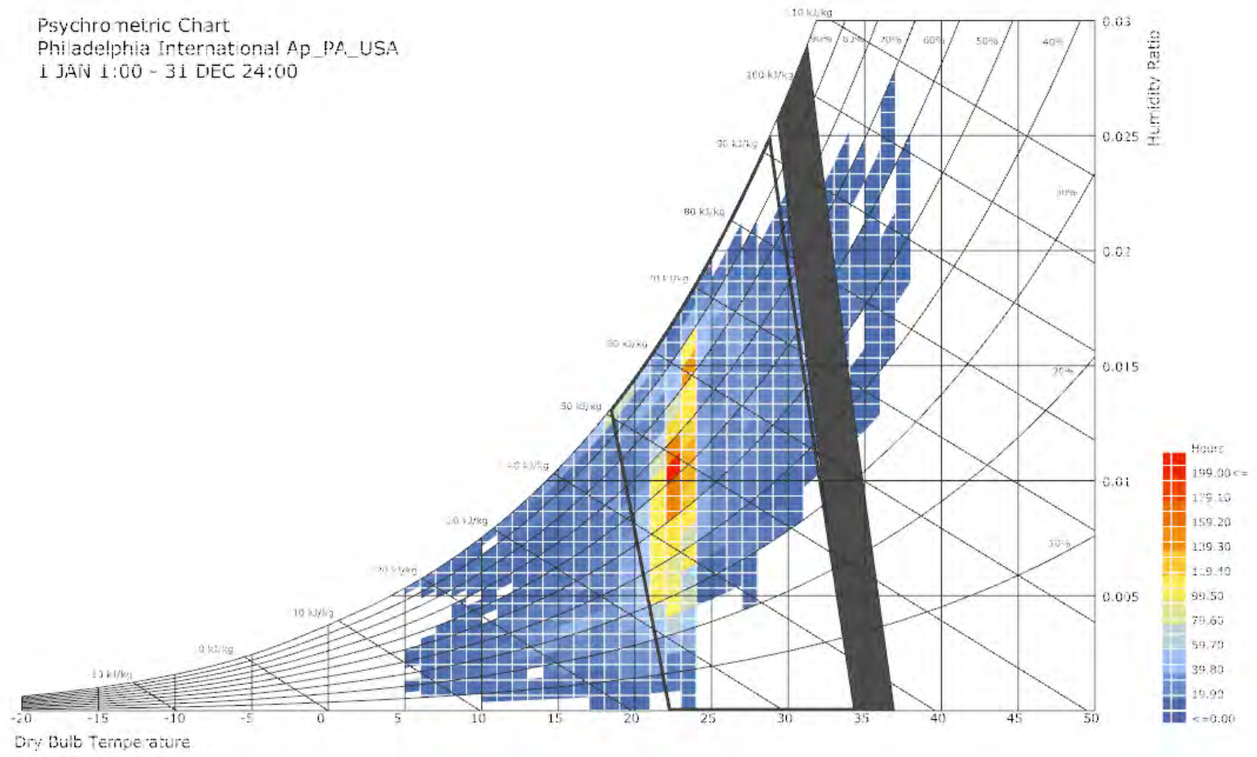
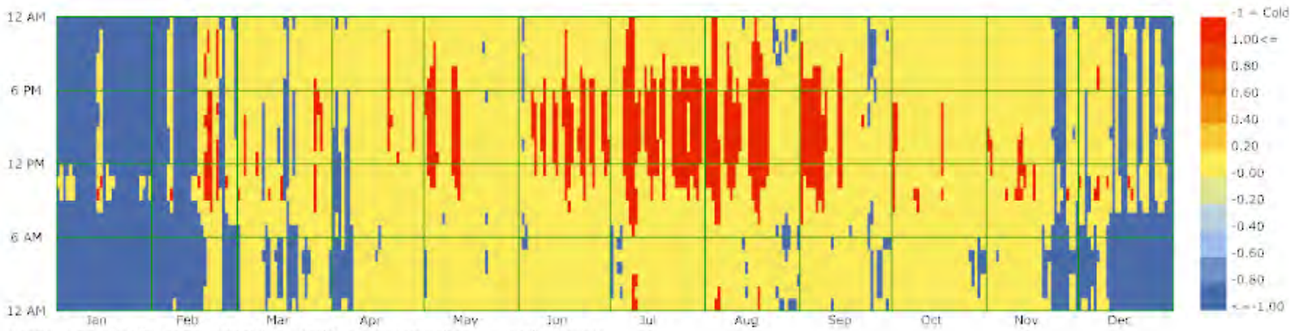
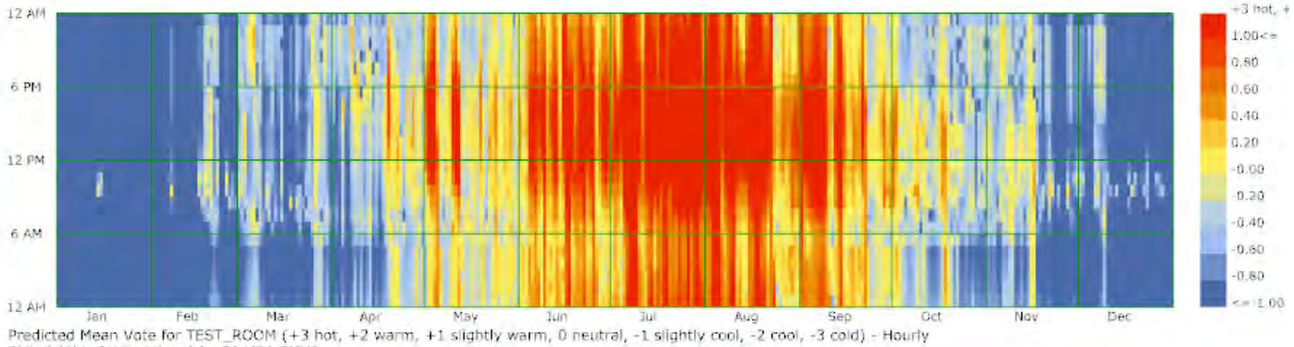
Spatial Daylight Autonomy	80.9%

lighting and infiltration schedule in Jan and Dec
Infiltration rate 0.002 m^3/sm^2





Adaptive Comfort for TEST_ROOM (-1 = Cold, 0 = Comfortable, 1 = Hot) - Hourly
Philadelphia International Ap PA USA TMY3
1 JAN 1:00 - 31 DEC 24:00



Predicted Mean Vote for TEST_ROOM (+3 hot, +2 warm, +1 slightly warm, 0 neutral, -1 slightly cool, -2 cool, -3 cold) - Hourly
Philadelphia International Ap PA USA TMY3
1 JAN 1:00 - 31 DEC 24:00