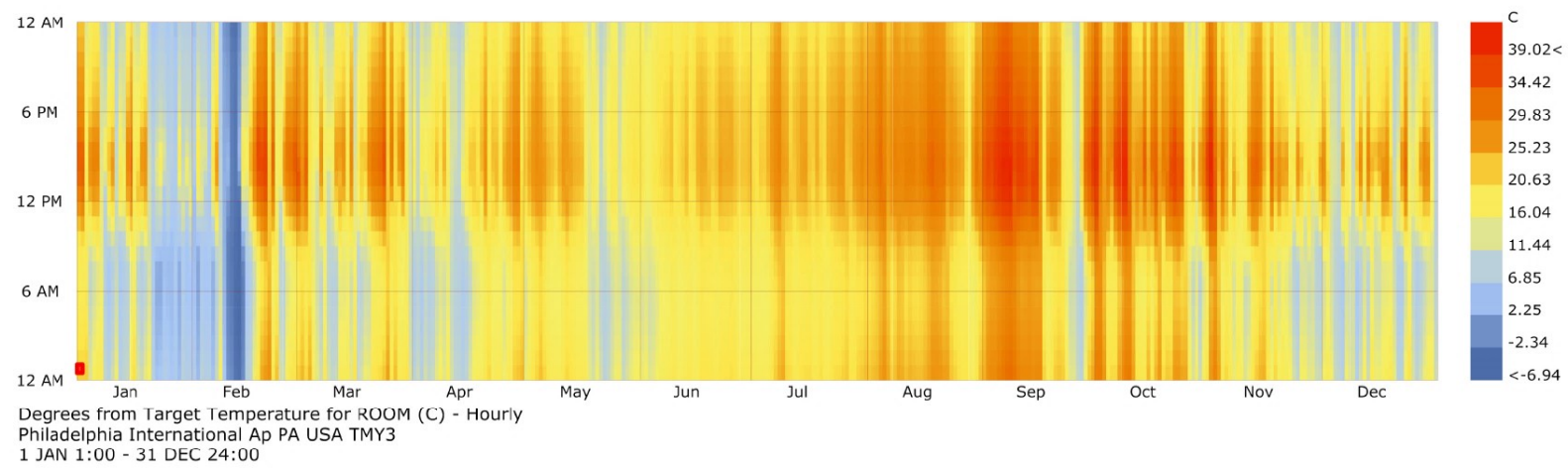


**IMPROVING ENERGY MODEL**

ARCH753-001-17C

BUILDING PERFORMANCE SIMULATION

SUBMITTED BY\_SILMI FARAH



STEP 1:

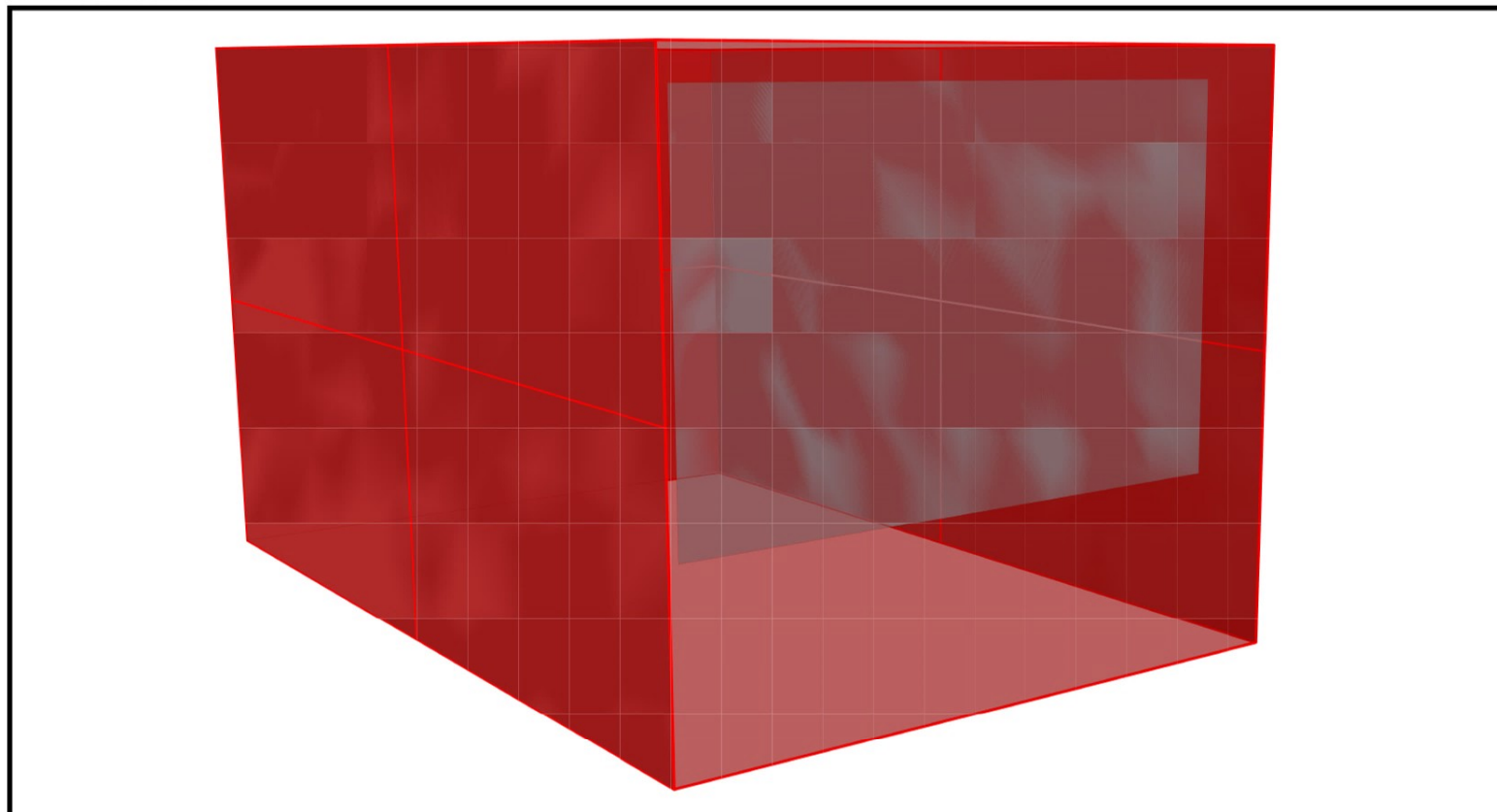
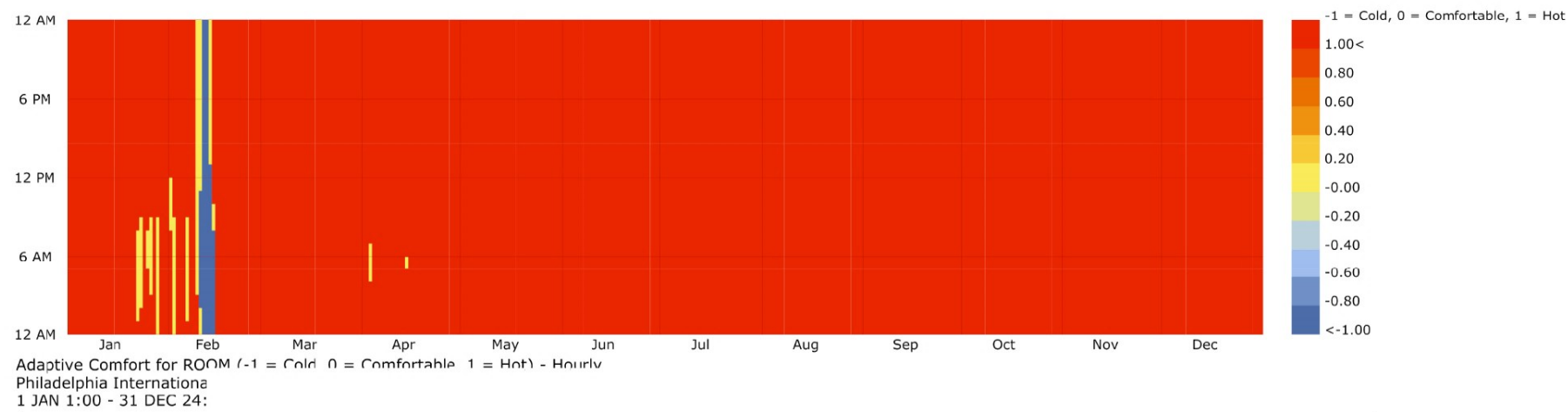
ENERGY MODEL'S BASELINE CONDITION:

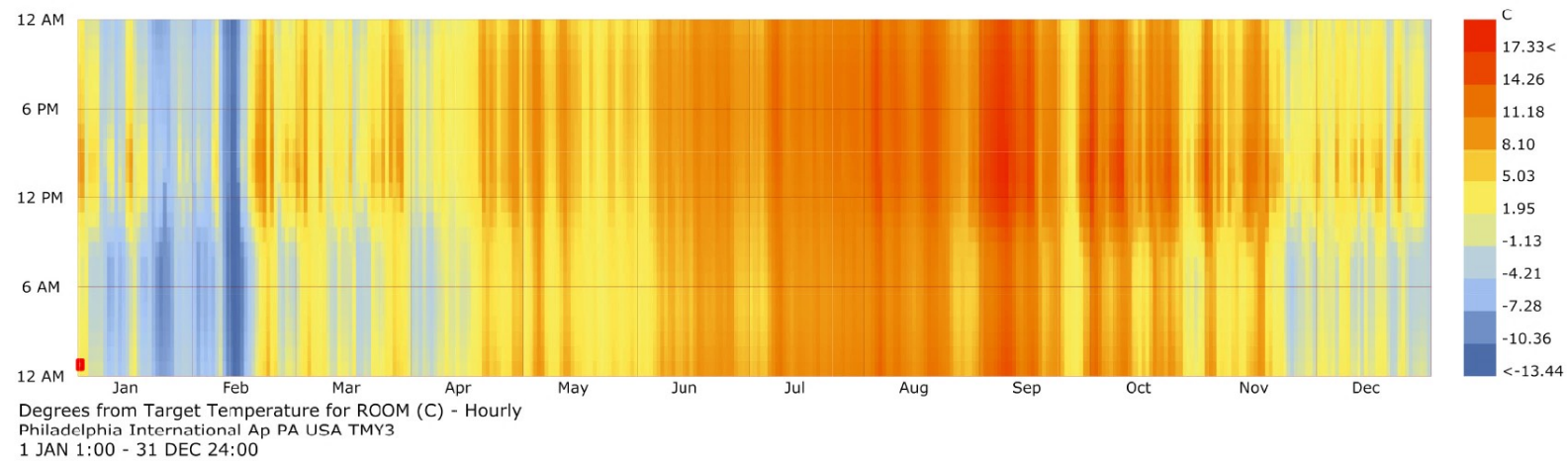
COMMENT: SINCE THE SOUTH FACADES WINDOW THE HEAT GAIN IS REALLY HIGH THROUGHOUT THE YEAR.

PERCENT OF TIME COMFORTABLE: 1.21 %

PERCENT OF TIME HOT: 97.89 %

PERCENT OF TIME COLD: 0.89 %





## STEP 2:

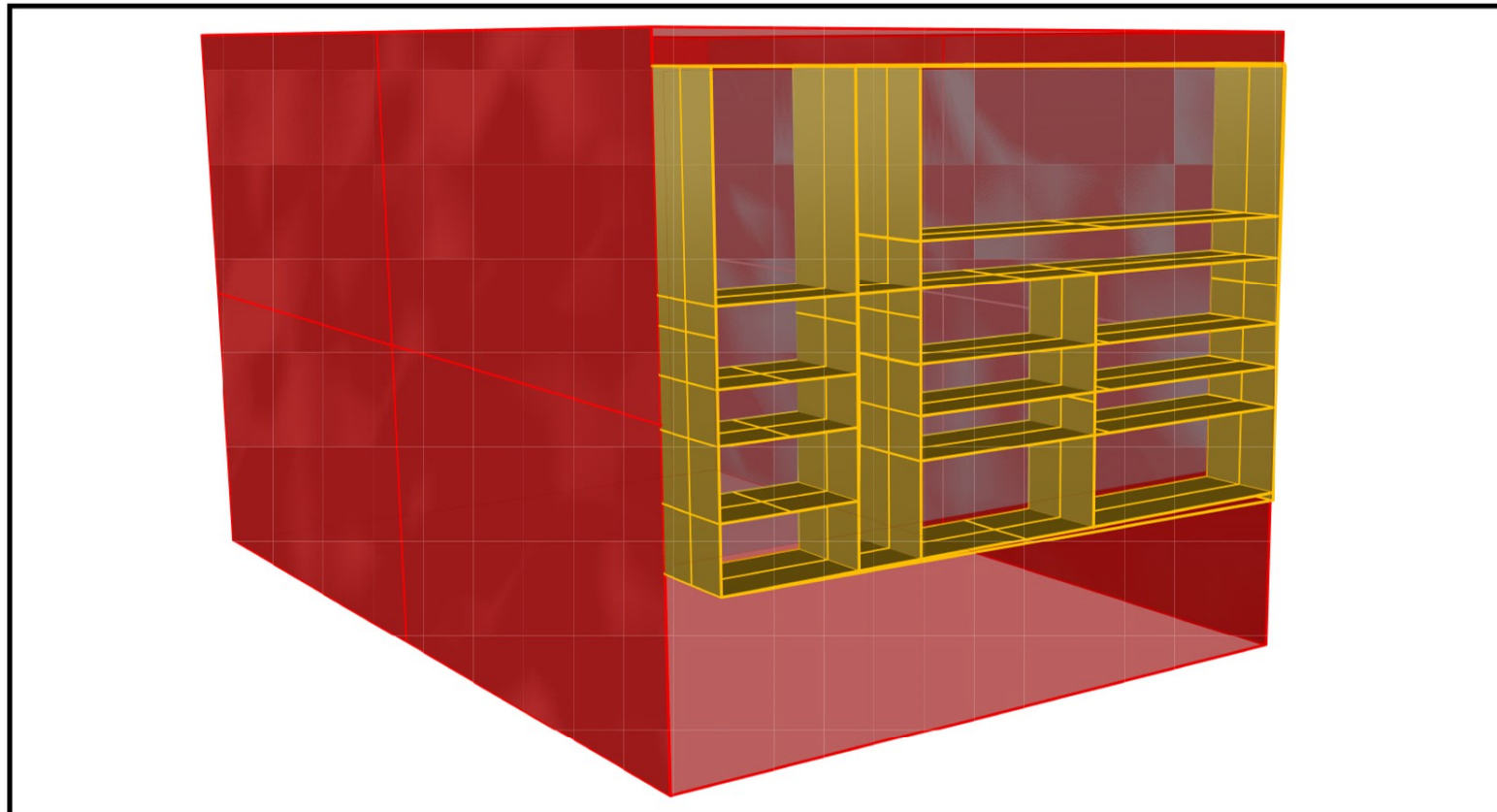
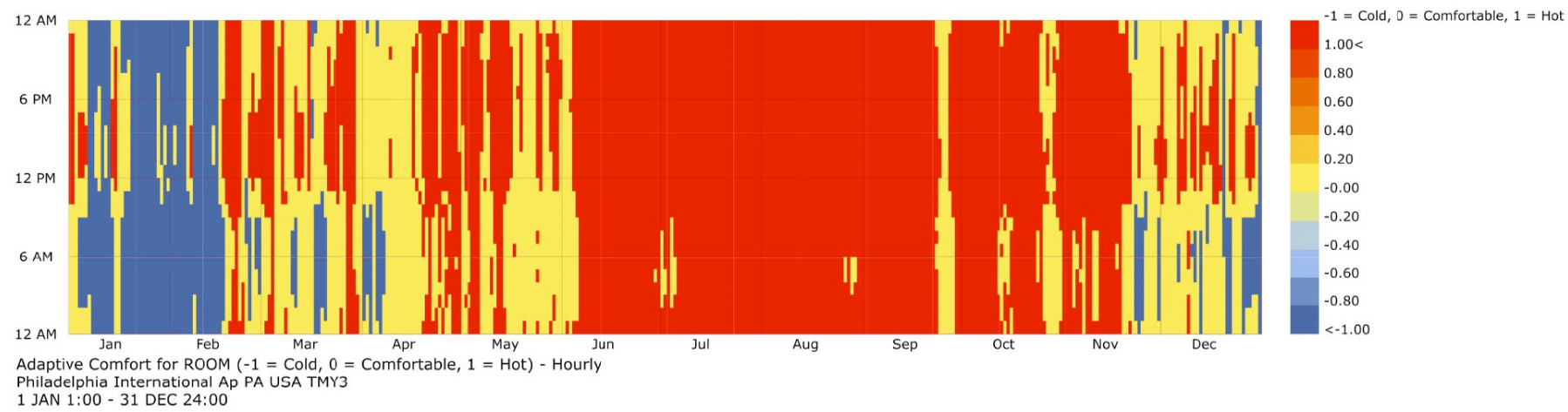
CHANGING EXTERIOR CONSTRUCTION AND SHADING ADDED:

COMMENT: THOUGH HEAT GAIN REDUCED, BUT IN WINTER SHADING PREVENTED SOME USEFUL RADIATION SO DISCOMFORT DUE TO COLD INCREASED

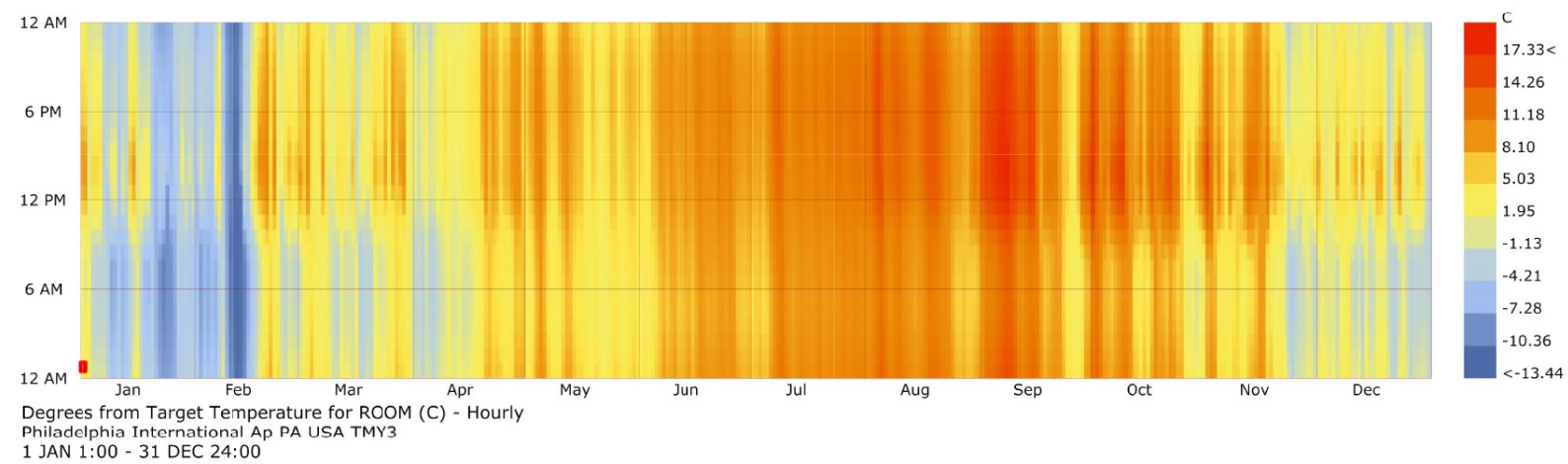
PERCENT OF TIME COMFORTABLE: 30.71 %

PERCENT OF TIME HOT: 56.36 %

PERCENT OF TIME COLD: 12.91 %







STEP 2:

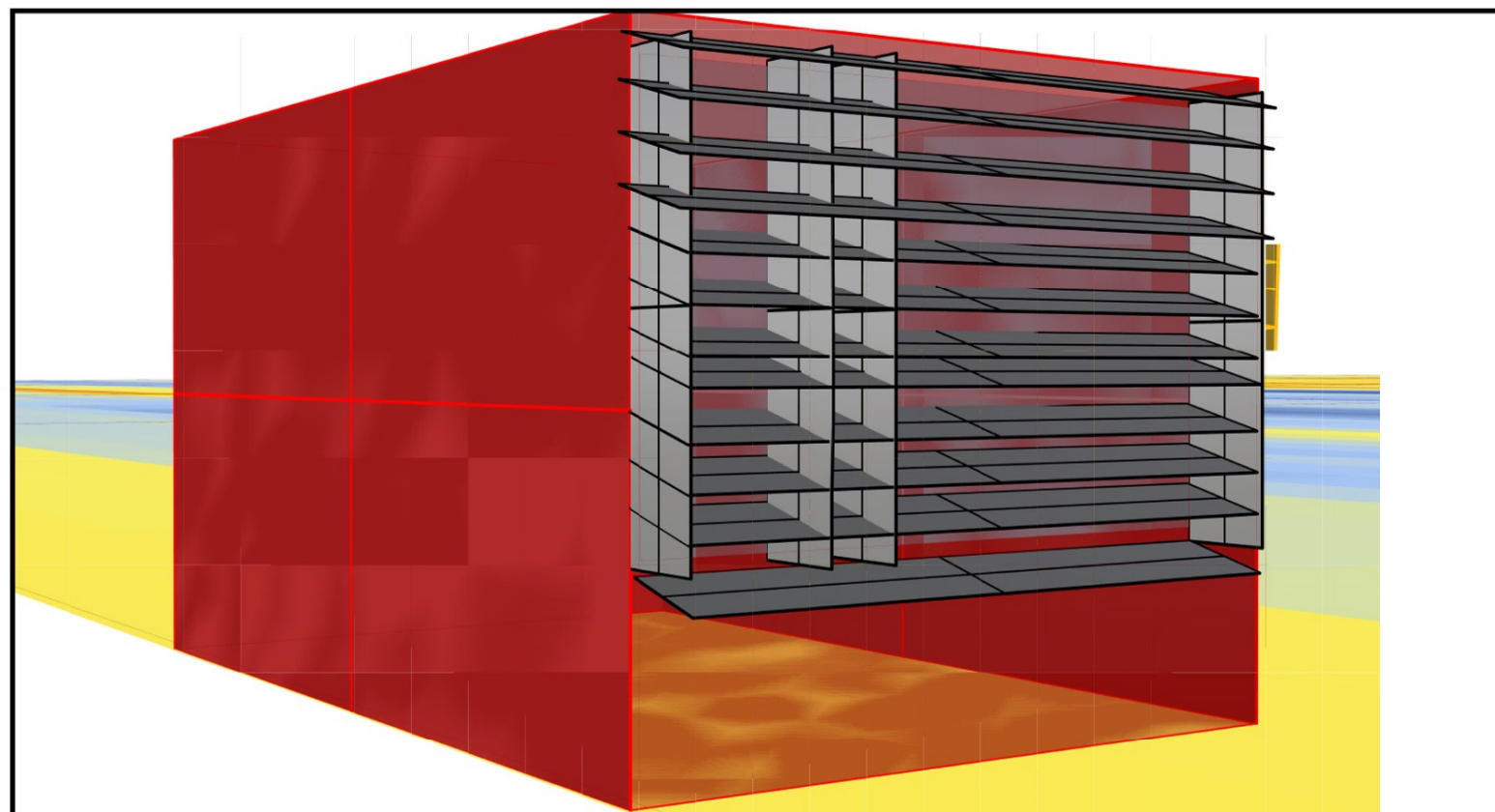
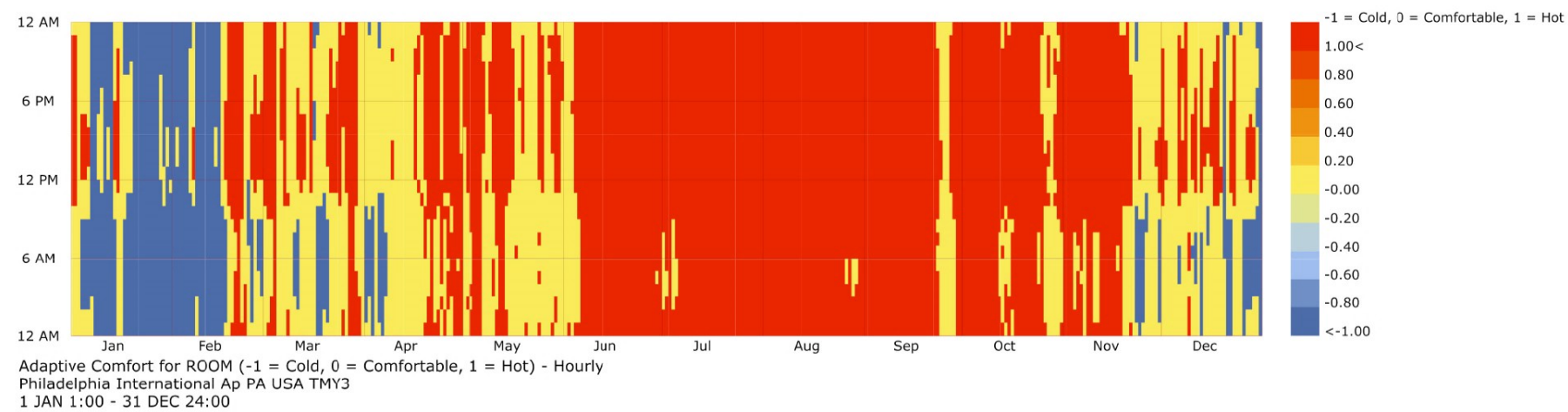
CHANGE SHADING GEOMETRY/ANGLE:

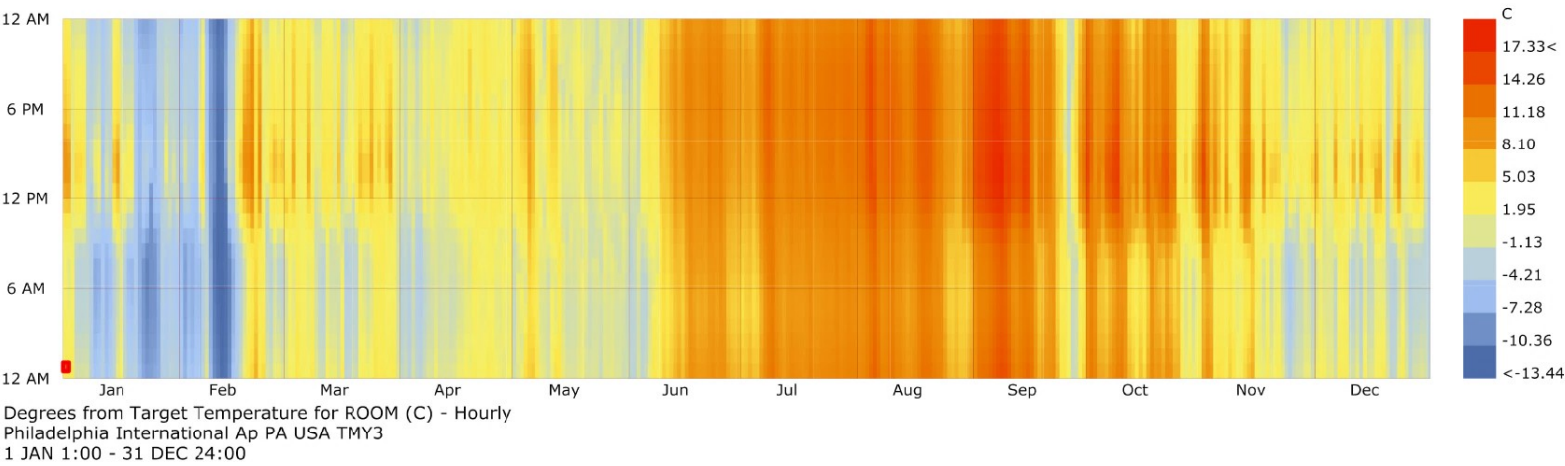
COMMENT: IS NOT VERY EFFECTIVE

PERCENT OF TIME COMFORTABLE: 37%

PERCENT OF TIME HOT: 45.49 %

PERCENT OF TIME COLD: 14.28 %





STEP 3:

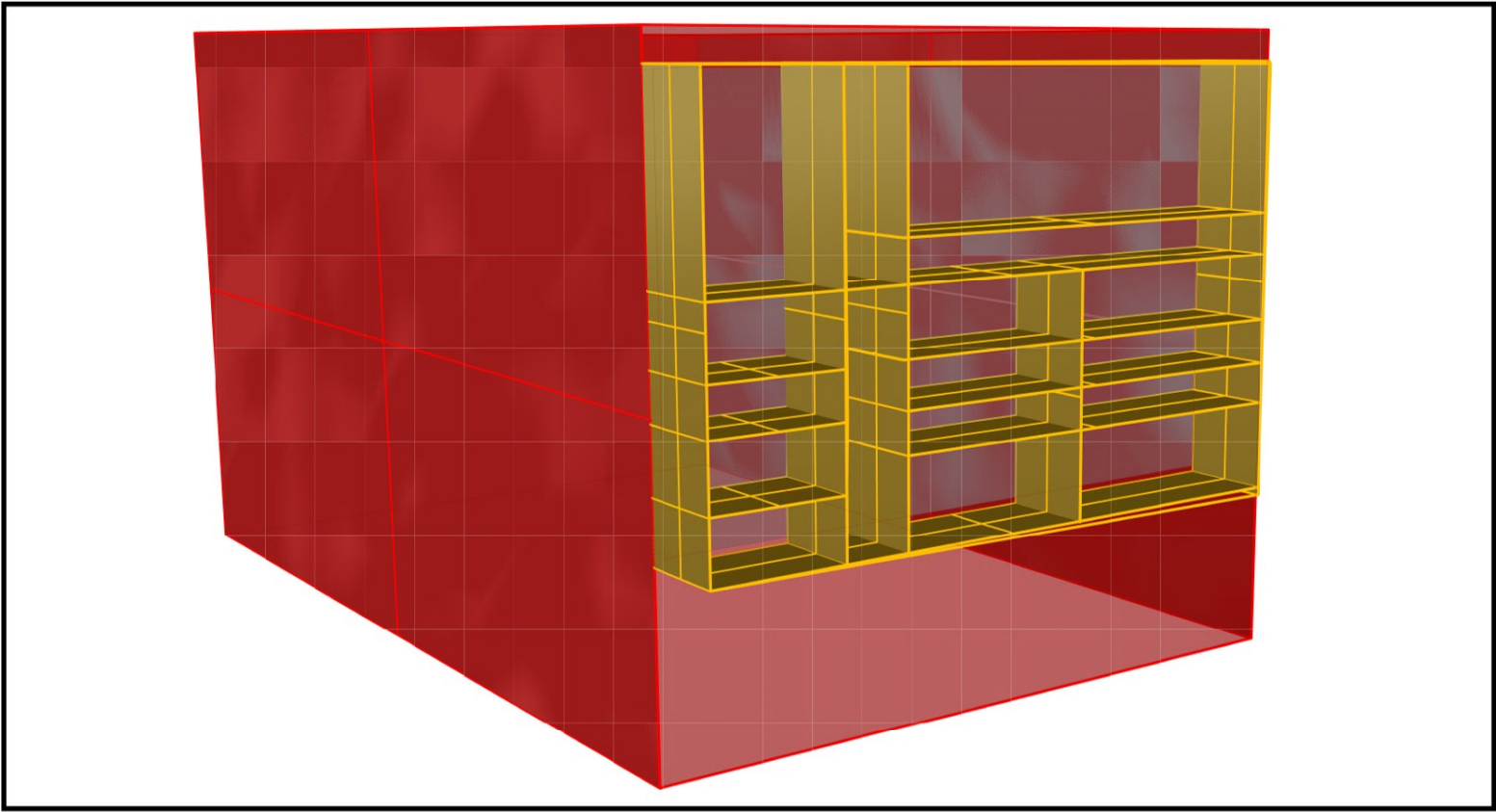
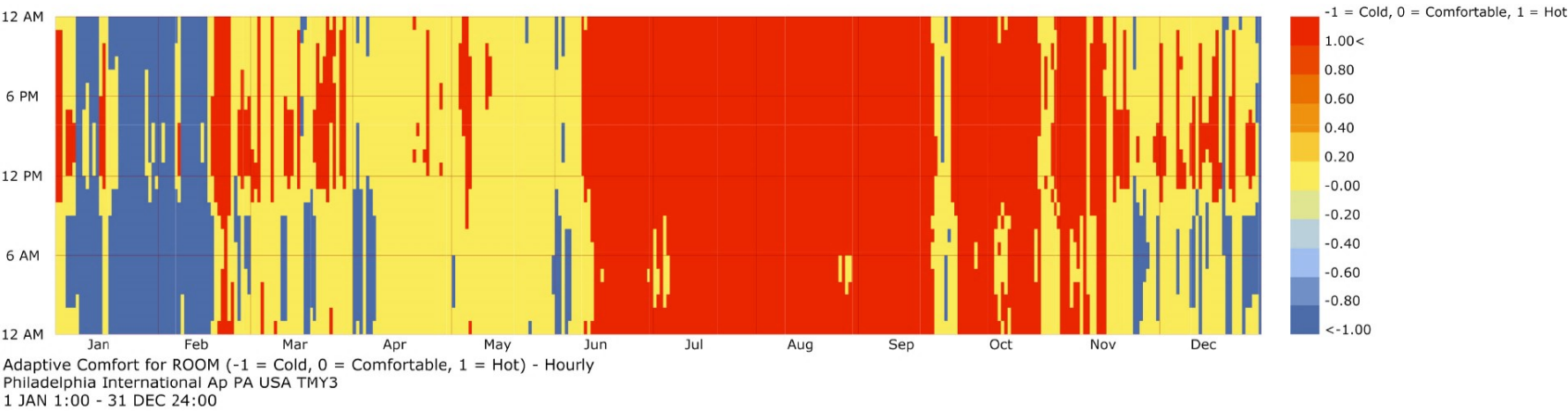
ADDING VENTILATION:

COMMENT: OPENING THE WINDOW INCREASED THE PERFORMANCE WITH PASSIVE COOLING IN USEFUL TEMPERATURE

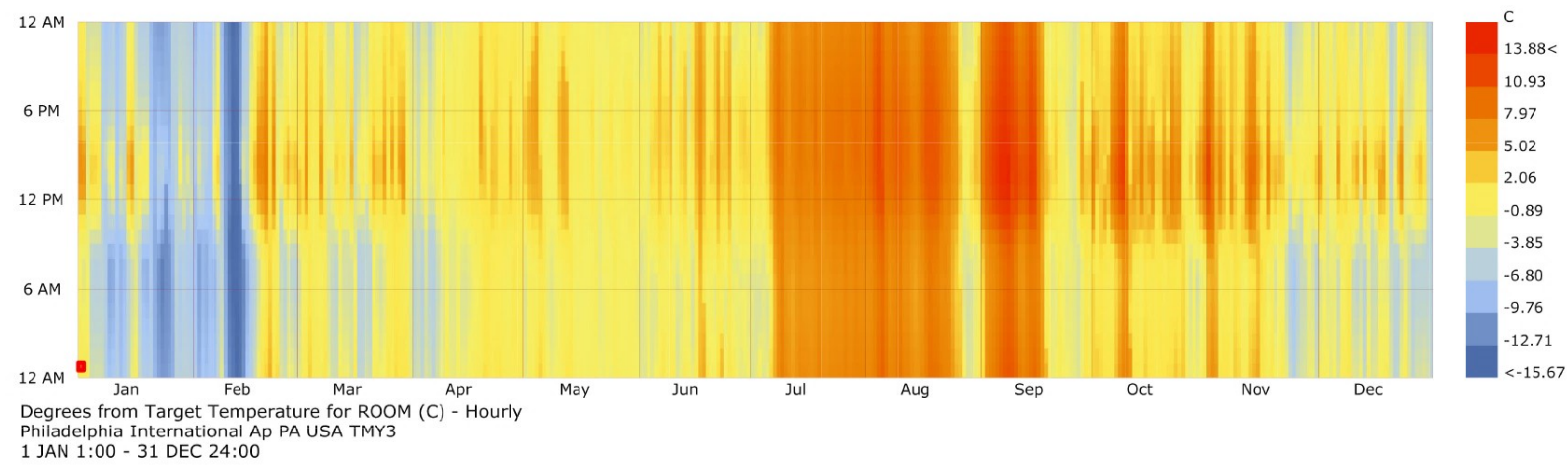
PERCENT OF TIME COMFORTABLE: 40.22 %

PERCENT OF TIME HOT: 45.49 %

PERCENT OF TIME COLD: 14.28 %







## STEP 4:

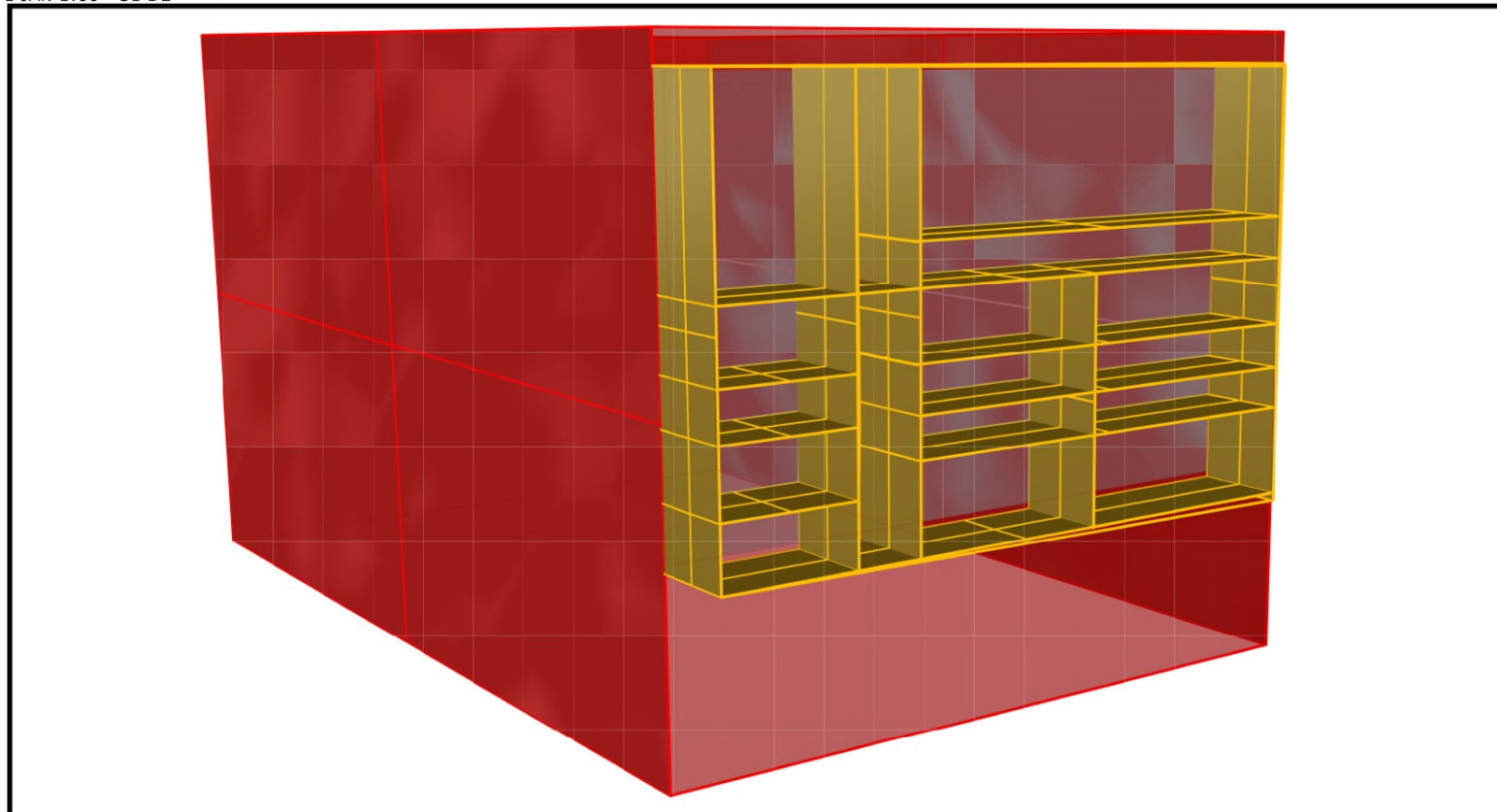
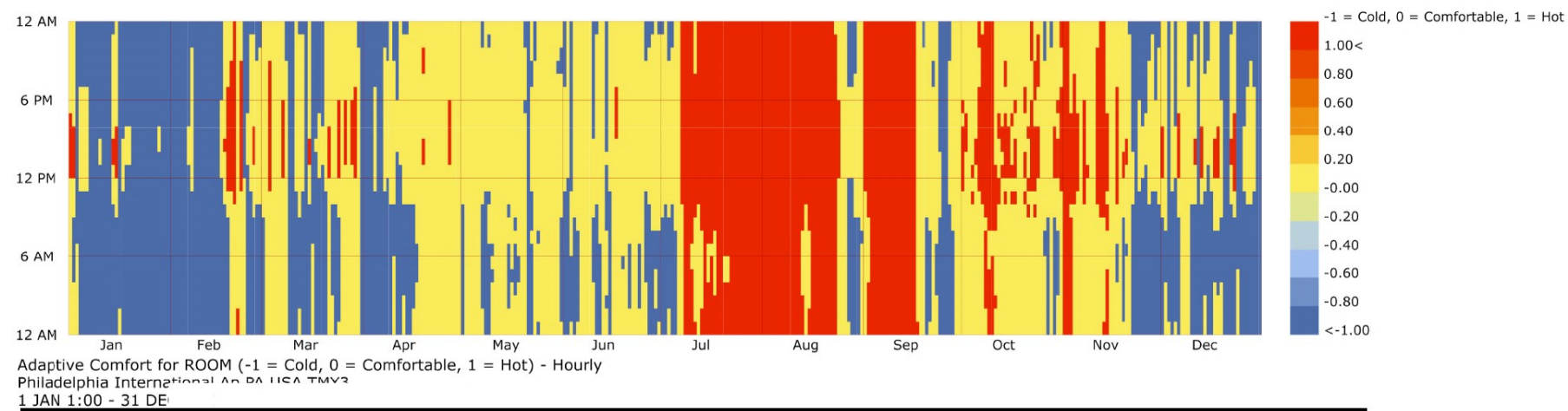
CHANGING INFILTRATION VALUE:

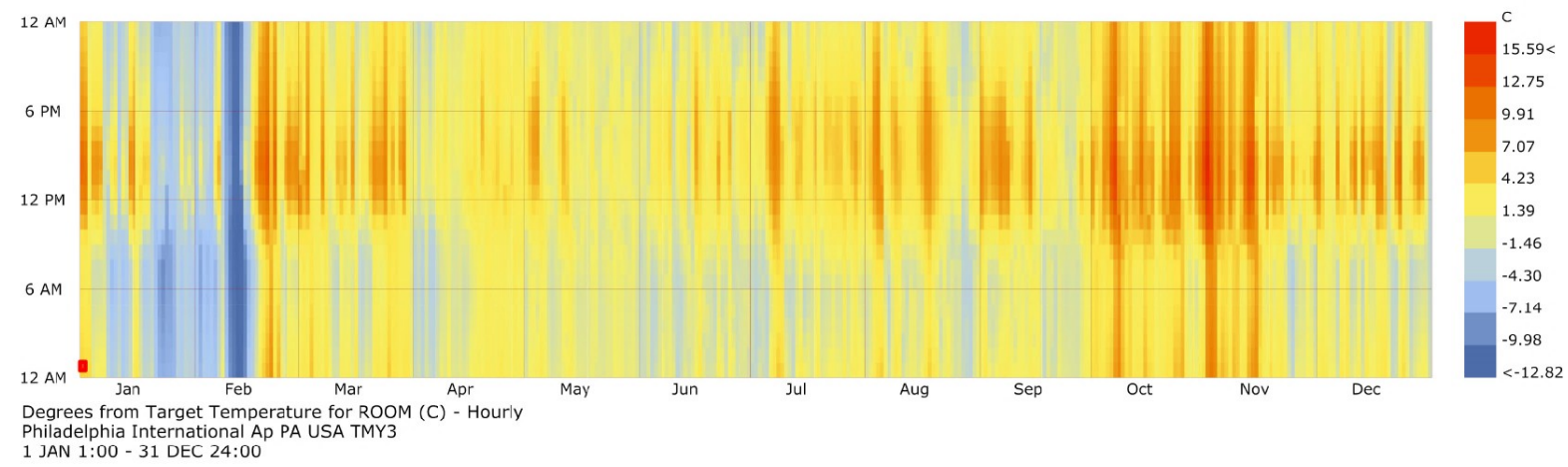
COMMENT: CHANGING INFILTRATION VALUE INTO 1 PERSON'S RESIDENT AND AVERAGE CLOSED SURFACE SIGNIFICANTLY CHANGED THE PERFORMANCE.

PERCENT OF TIME COMFORTABLE: 46.59 %

PERCENT OF TIME HOT: 22.22 %

PERCENT OF TIME COLD: 31.18 %





## STEP 5:

### CHANGING VENTILATION PARAMETERS

COMMENT: CHANGING VENTILATION PARAMETERS OF  
CONDITION RANGE OF ALLOWING NATURAL VENTILATION  
INTO SPACE.

PERCENT OF TIME COMFORTABLE: 67.56%

PERCENT OF TIME HOT: 19.61 %

PERCENT OF TIME COLD: 12.81 %

