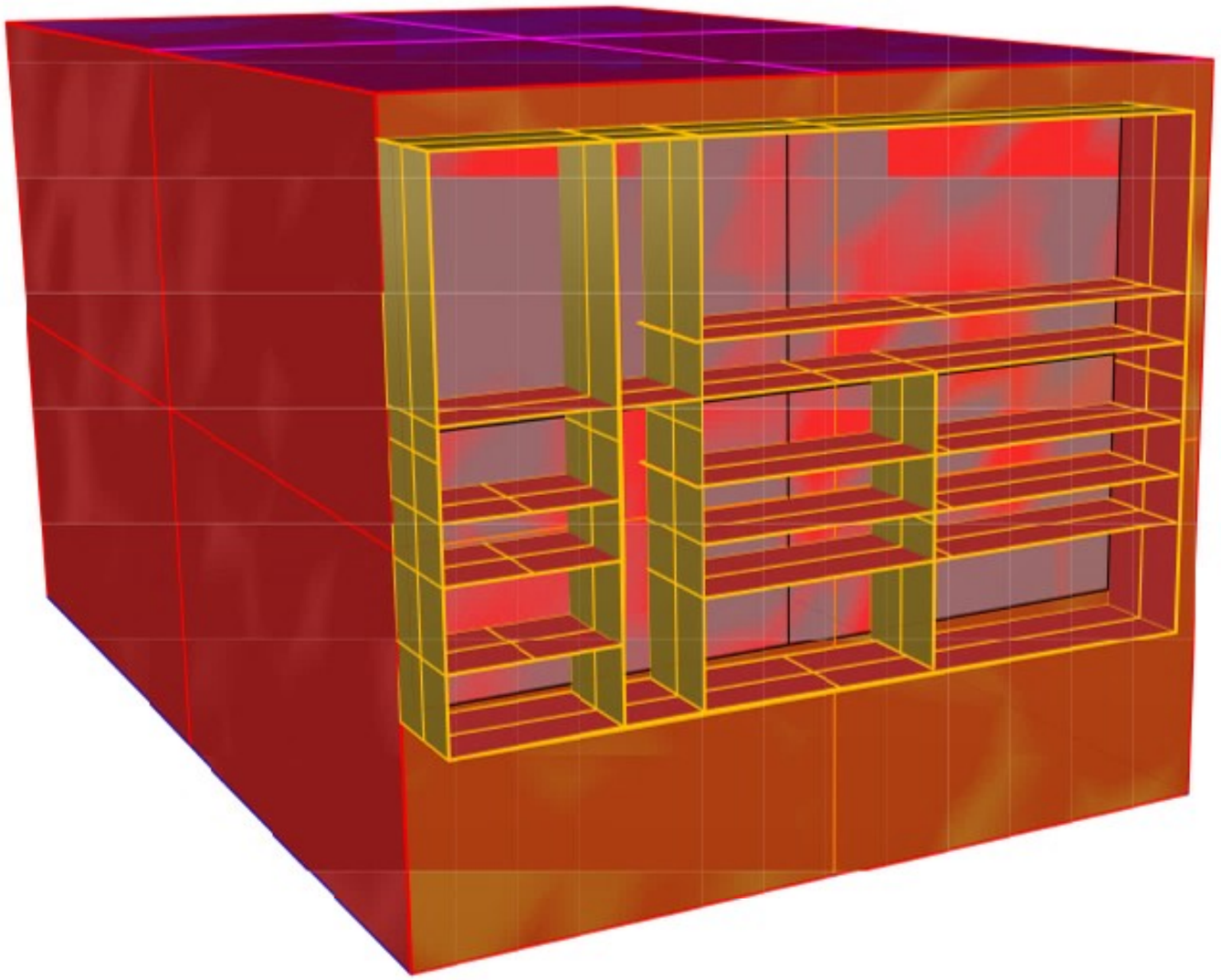
ENERGY MODEL CREATION

ARCH753-001-17C

BUILDING PERFORMANCE SIMULATION

SUBMITTED BY_SILMI FARAH

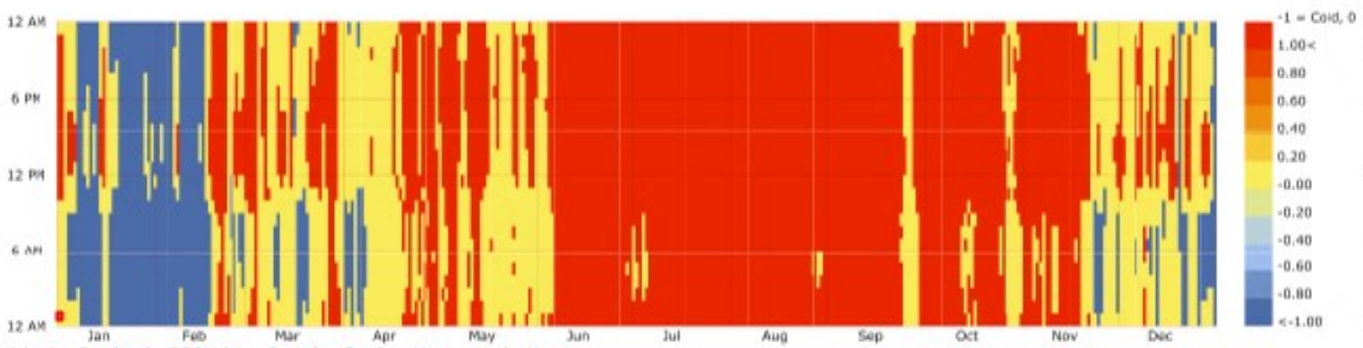


ENERGY MODEL CREATION

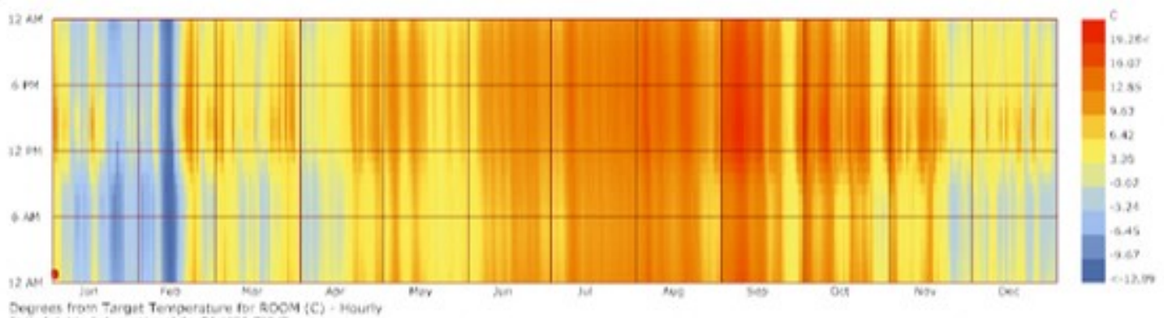
FOR THE PREVIOUS MODEL ENERGY MODEL IS CREATED WITH THE PROGRAM SCHEDULE OF MID-RISE APARTMENT IN A NON-CONDITIONED SITUATION. FOR THE EXTERIOR FACADE, THE CBECS 1980-2004 EXTWINDOW CLIMATEZONE 4A IS APPLIED.

ALTHOUGH, THE SHADING PROVED EFFECTIVE IN DAYLIGHT EFFICIENCY IT DOES NOT ENSURE MUCH EFFICIENCY IN COMFORT LEVEL. FROM JUNE -NOVEMBER IT GETS HOT

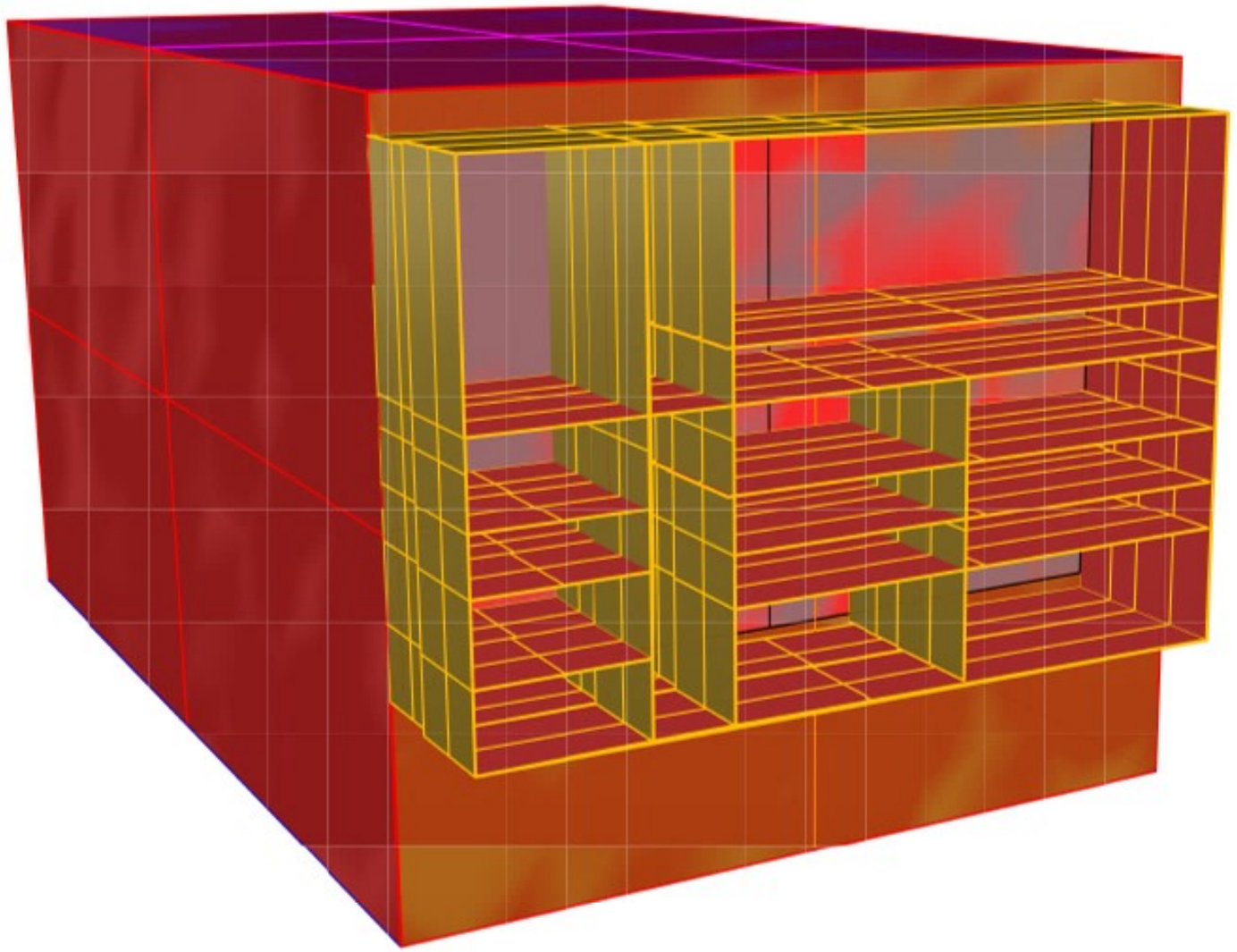
FROM THE DEGREES FROM TARGET DIAGRAM WE CAN SEE IT VARIES ON AN AVERAGE APPROXIMATE 9 DEGREE CELCIUS IN MOST OF THE CASES



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



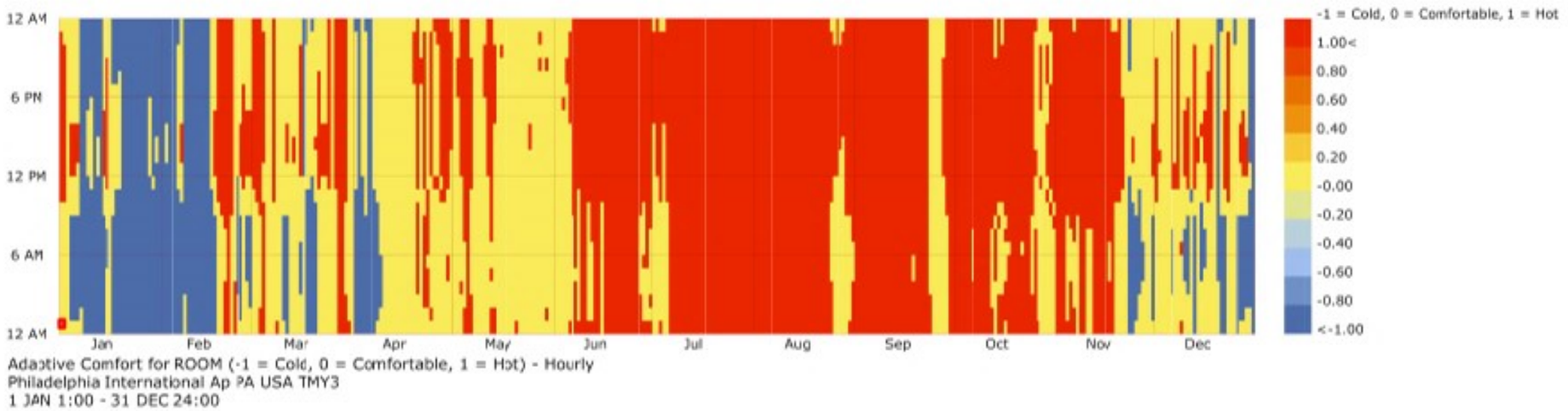
Degrees from Target Temperature for ROOM (C) - Hourly
Philadelphia International Ap PA USA TMY3
1 JAN 1:00 - 31 DEC 24:00



TRIAL 2:

EVEN AFTER INCREASING THE SHADING DEPTH TO DOUBLE THE HEAT GAIN IMPROVES VERY LITTLE COMPARATIVELY. IT MIGHT BE RESOLVED IMPROVING SOME OTHER FEATURES.

ONE OF THEM MIGHT BE VENTILATION. SINCE THE WINDOWS ARE CLOSED ALL THE TIME IT IS POSSIBLY ONE OF THE MAJOR REASON TO HEAT GAIN CONSTANTLY



Adaptive Comfort for ROOM (-1 = Cold, 0 = Comfortable, 1 = Hot) - Hourly
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