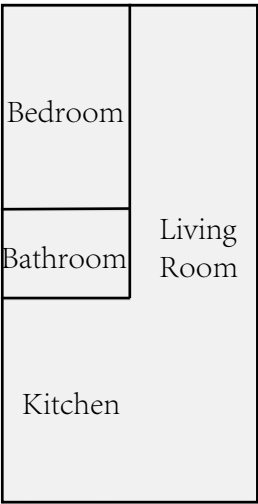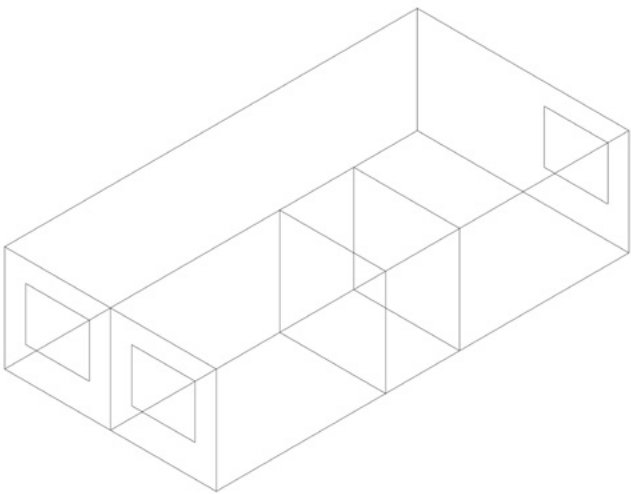# Energy Model

Building Performance Simulation Assignment 6
Yuchi Wang


.epw file information :
Location : Philadelphia International Airport
Data Type : TWY 3

Base Case Analysis

Firstly, the room is divided into 3 zones according to the plan. Then the energy calculation is set and the diagram on the right shows the overall comfort index of the space. We can see that most of time during the middle of the year is too hot in the space. The shader is needed to improve the situation.

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

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

Bedroom

Bathroom | Living Room

Kitchen

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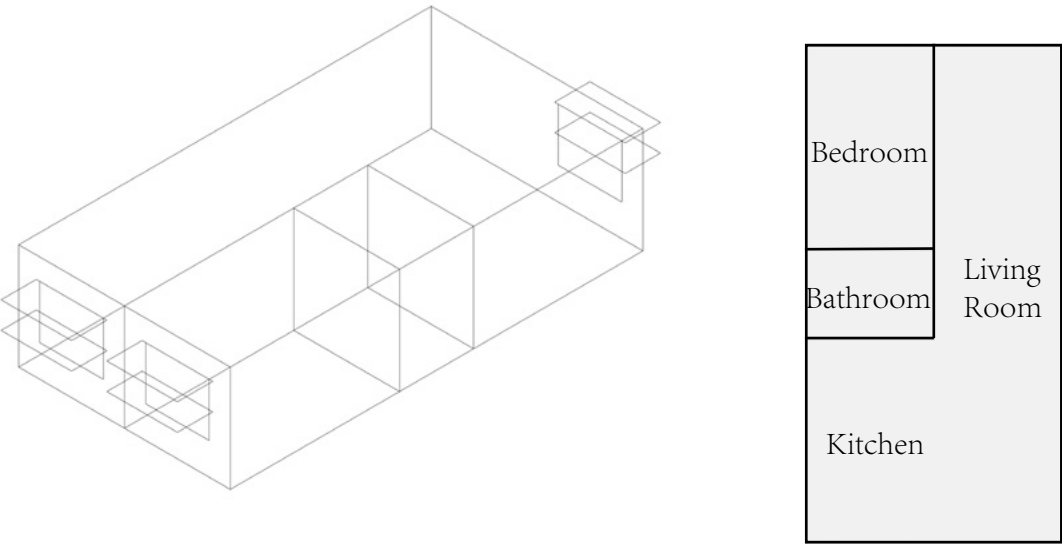1 JAN 1:00 - 31 DEC 24:00

.epw file information :
Location : Philadelphia International Airport
Data Type : TWY 3
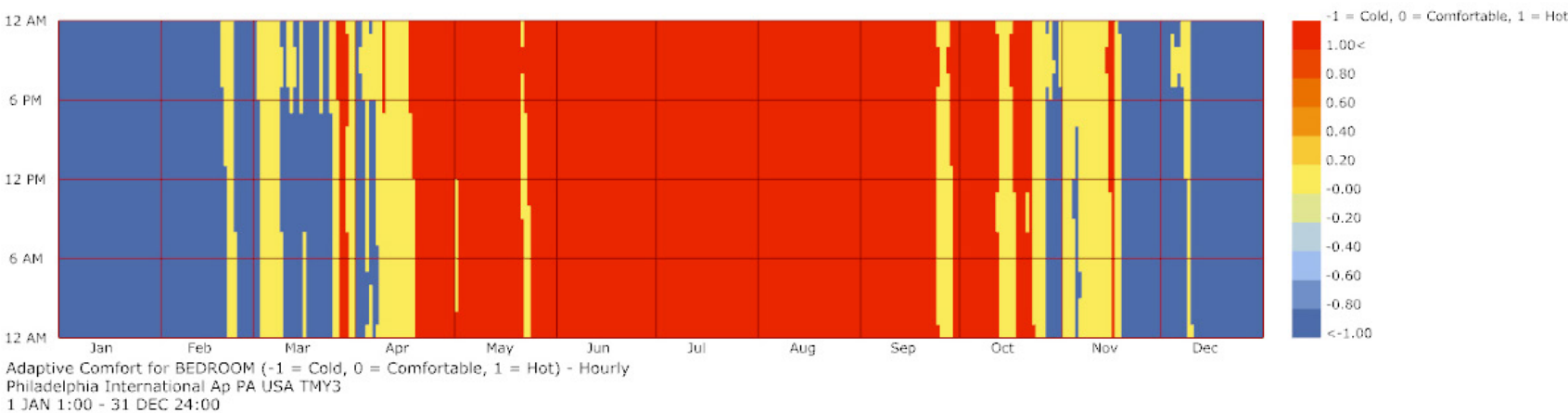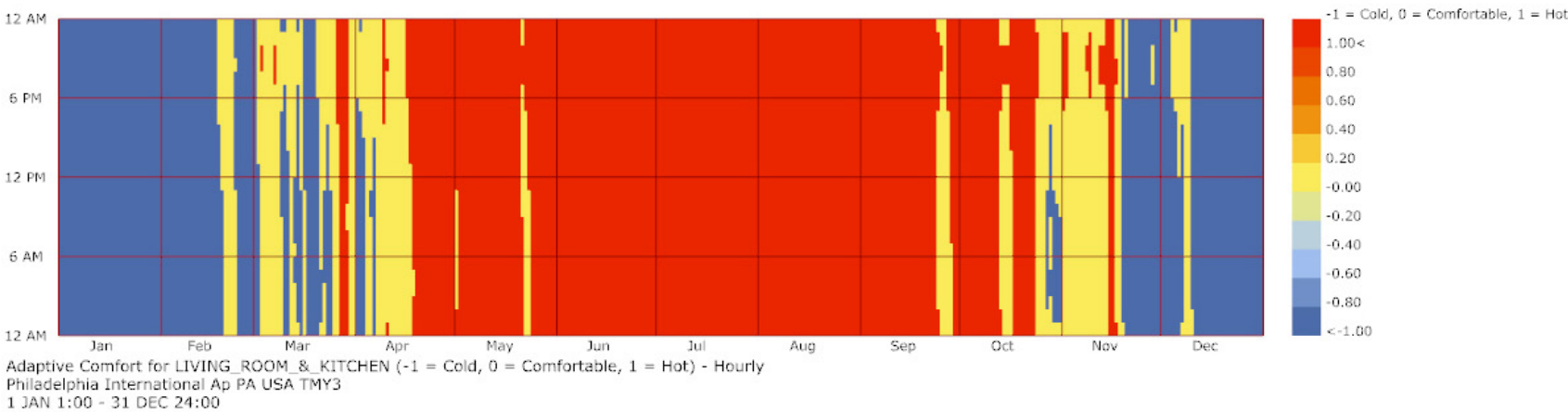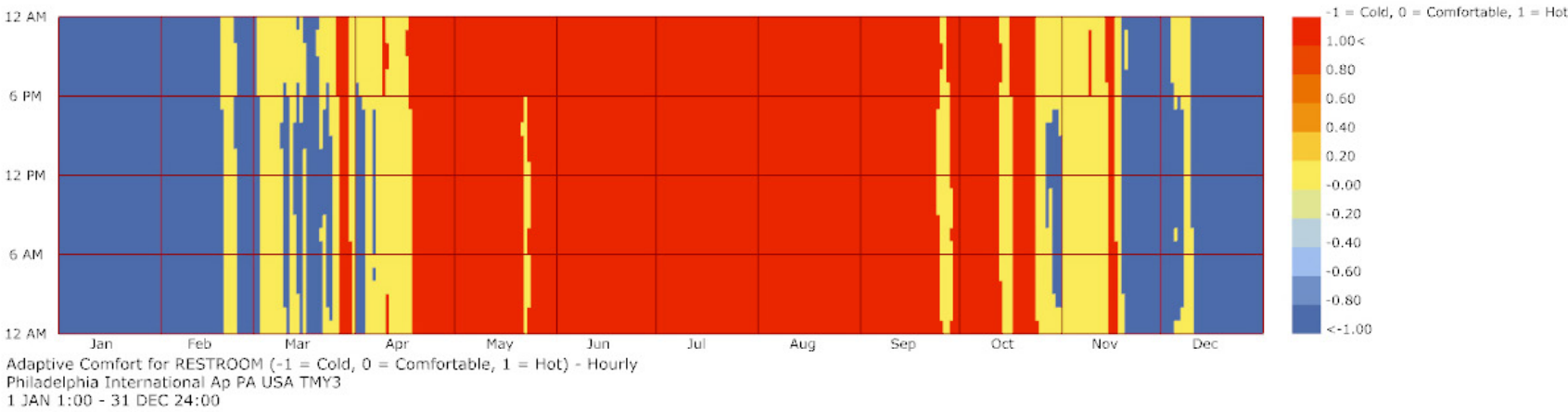
Base Case Analysis

After adding the shading, the calculation shows that the comfor percentage of bedroom rise from16.8% to 17.4%. However, the living room and kitchen goes down from 18.4% to 18.2%. This shows that the shading cannot resolve the overheat situation of living room. The next step to improve the indoor comfort should be to add natural ventilation and change construction materials.

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

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

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

Bedroom	
Bathroom	Living Room
Kitchen	

.epw file information :
Location : Philadelphia International Airport
Data Type : TWY 3