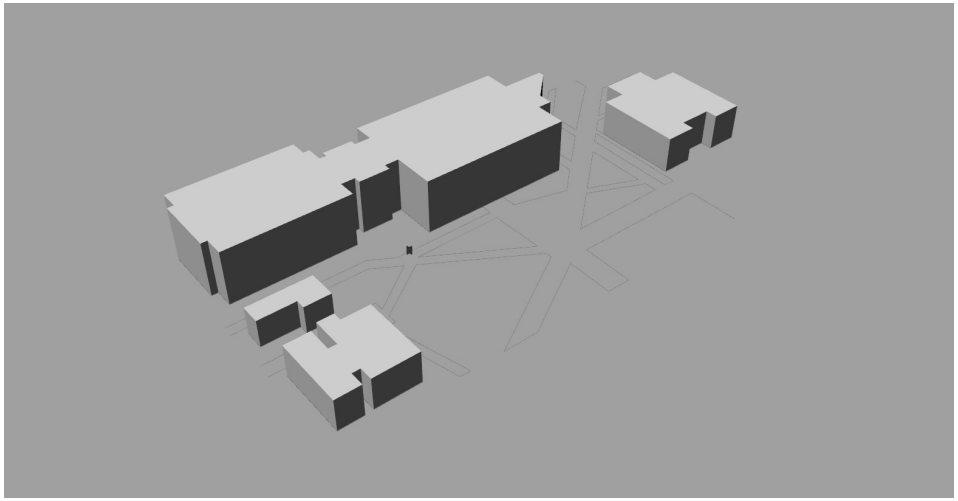
Environmental Systems

Project 4

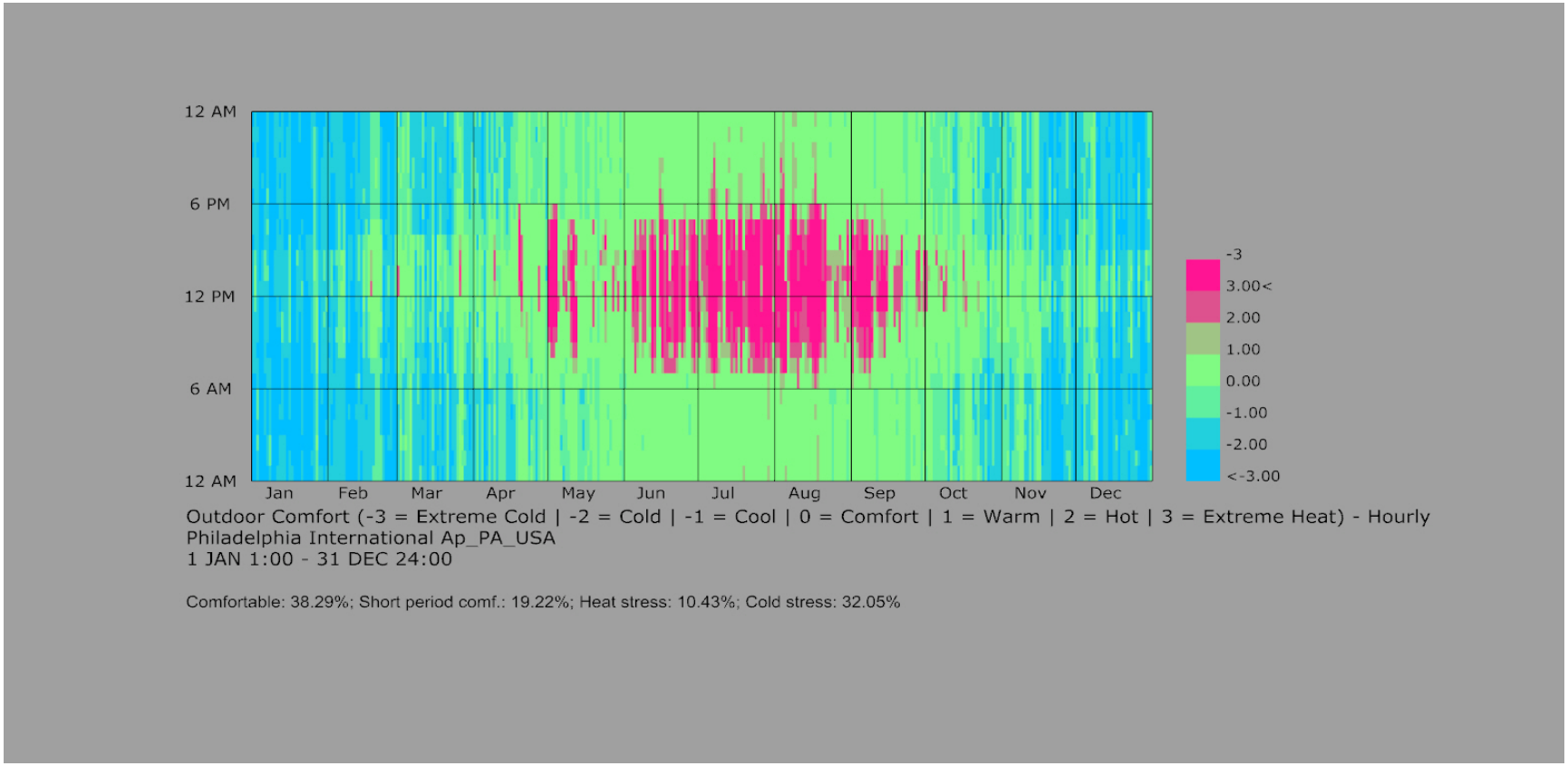
Fall 2017
ARCH 633

Mohamed Ali

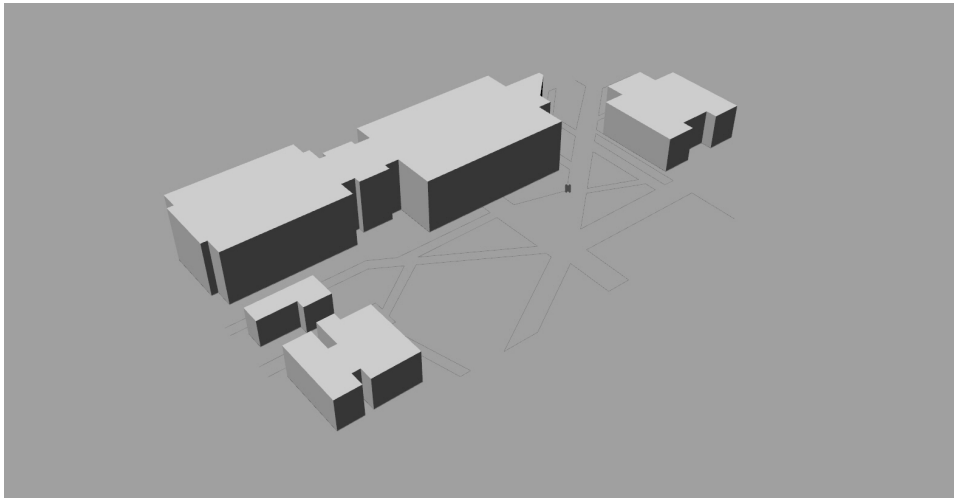
Site with Context



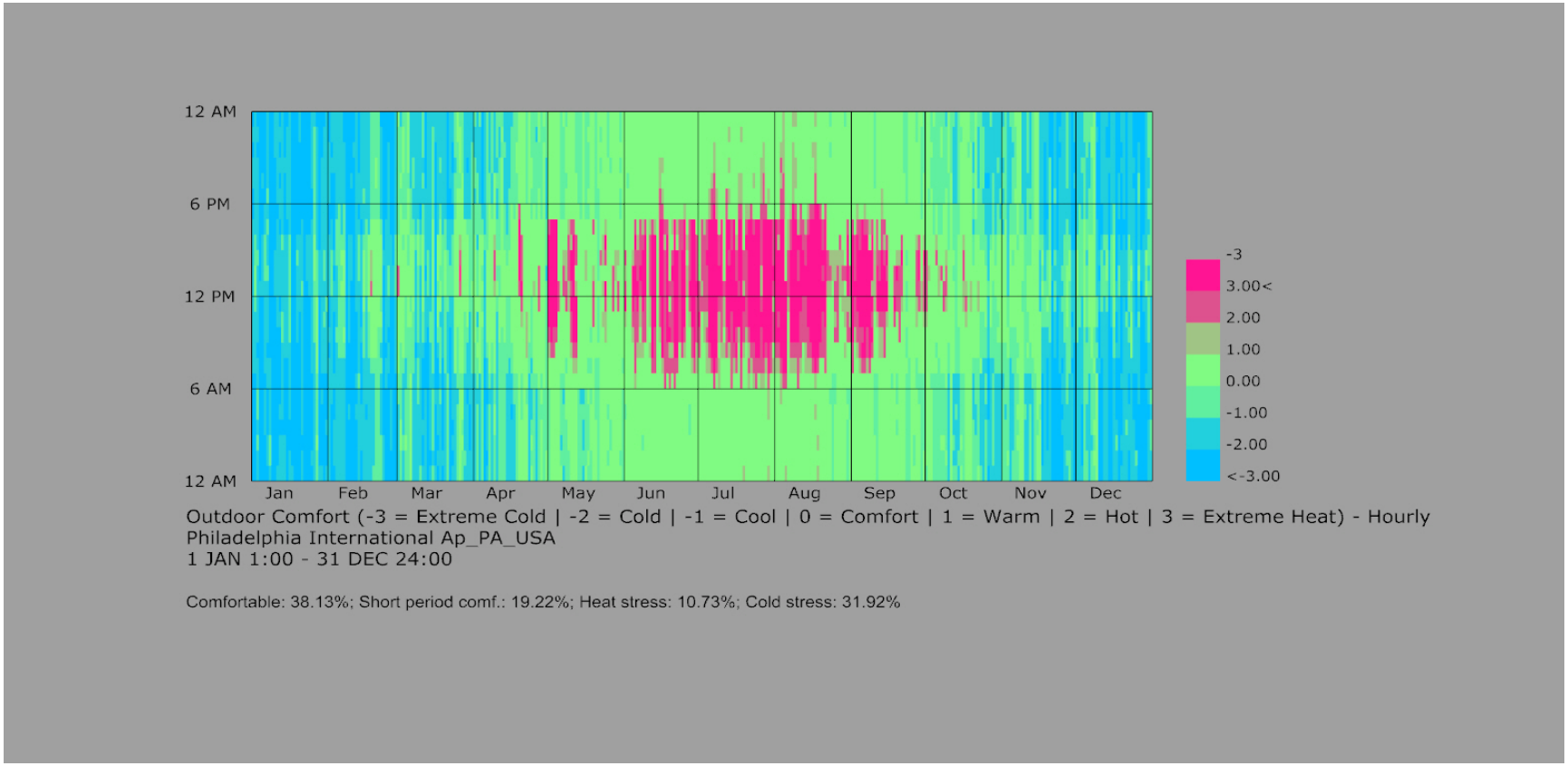
Location 1



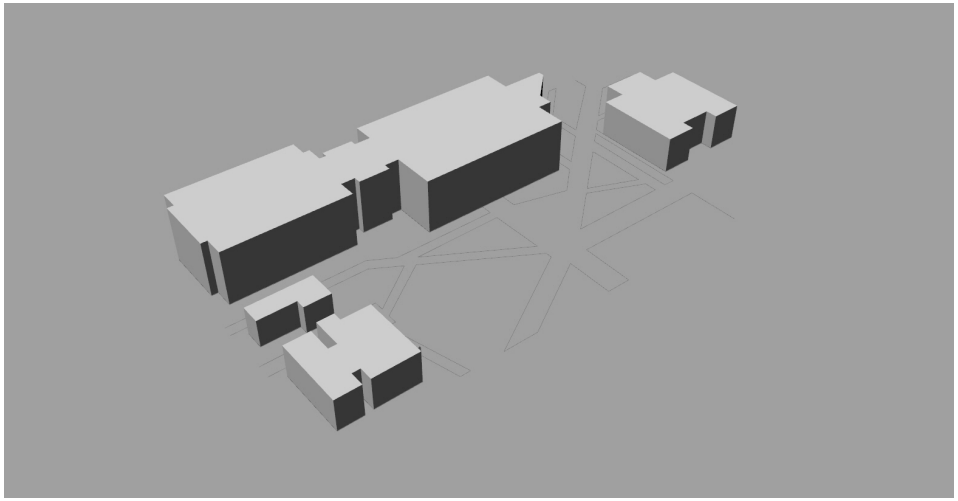
Site with Context



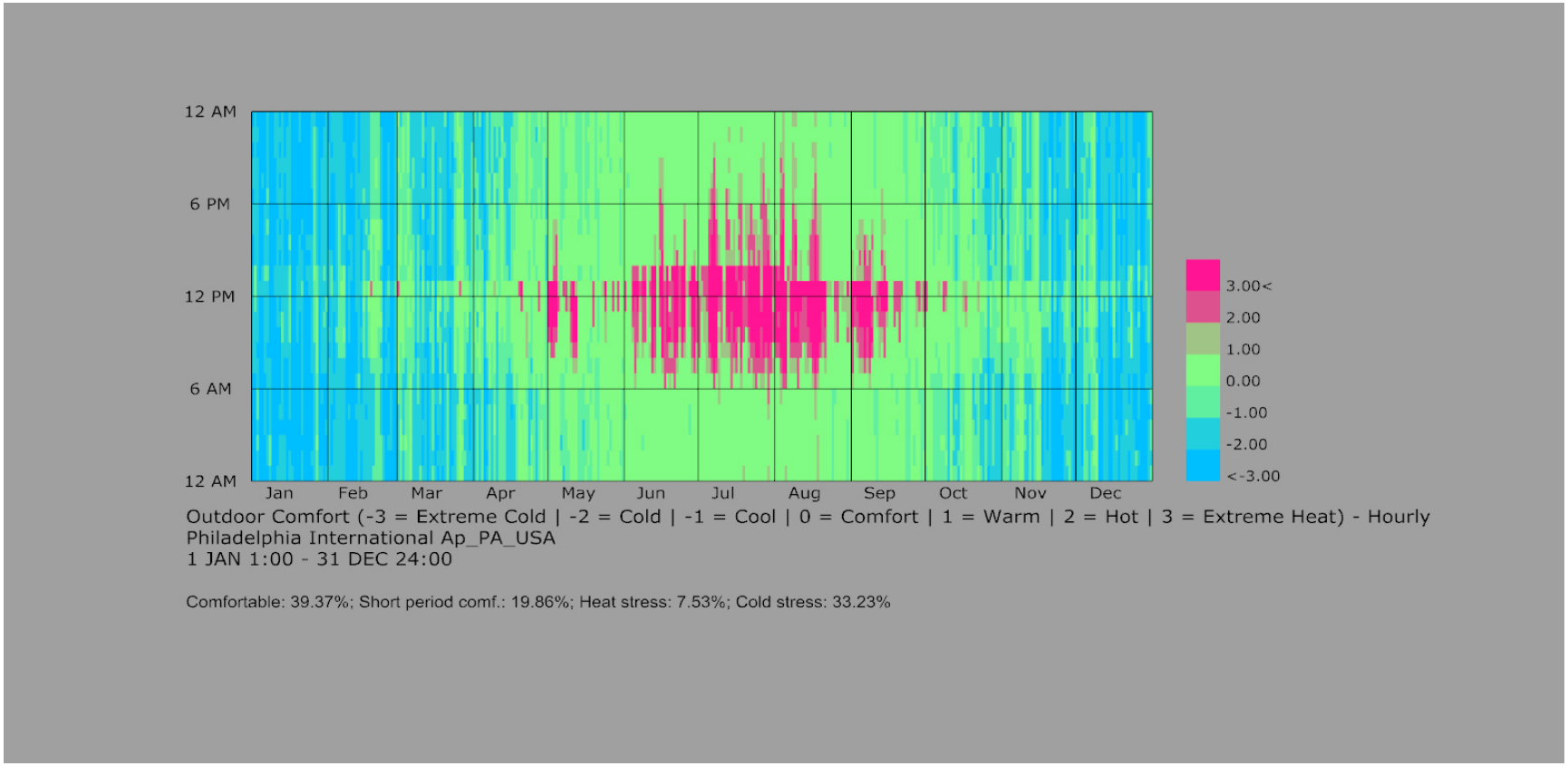
Location 2



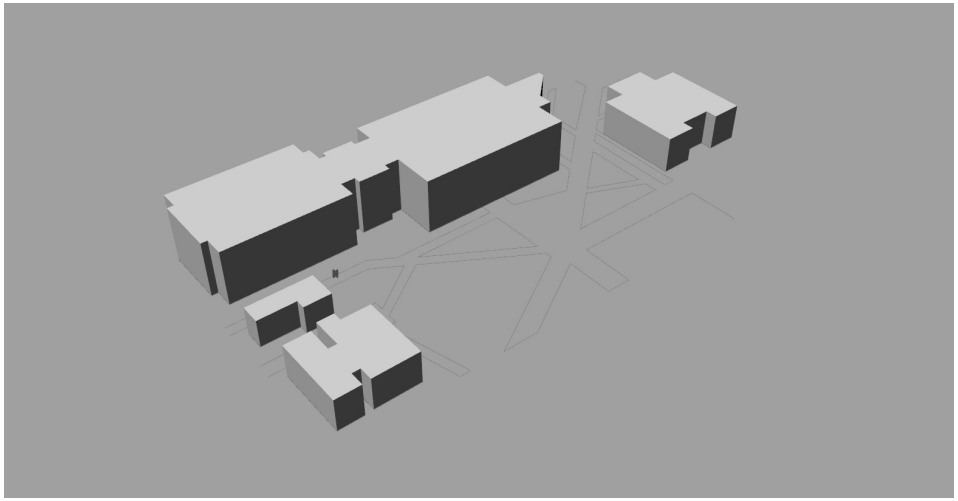
Site with Context



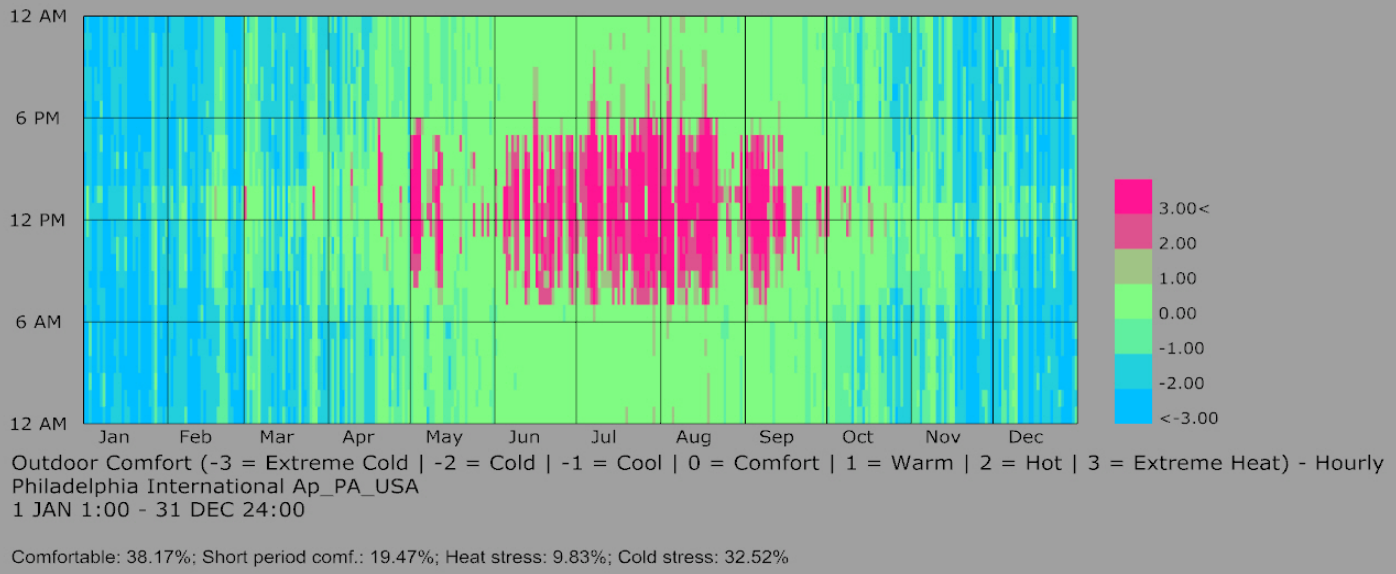
Location 3



Site with Context



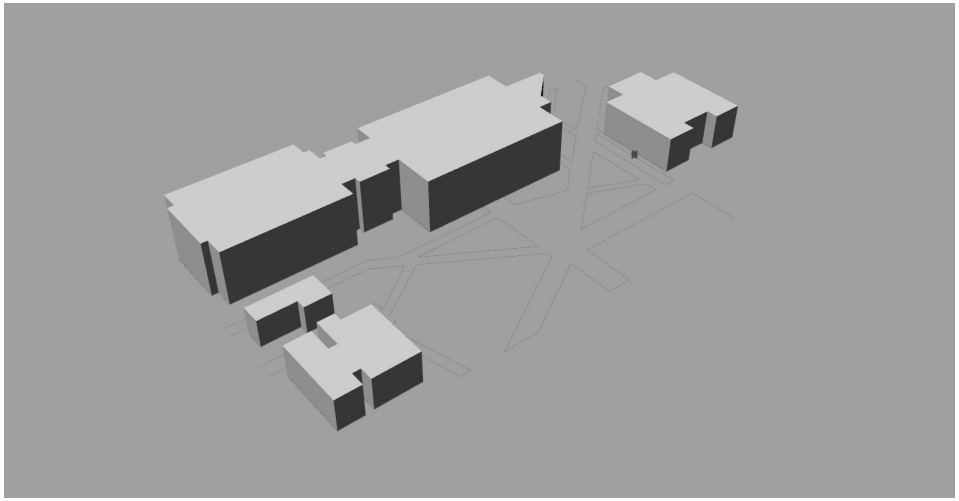
Location 4



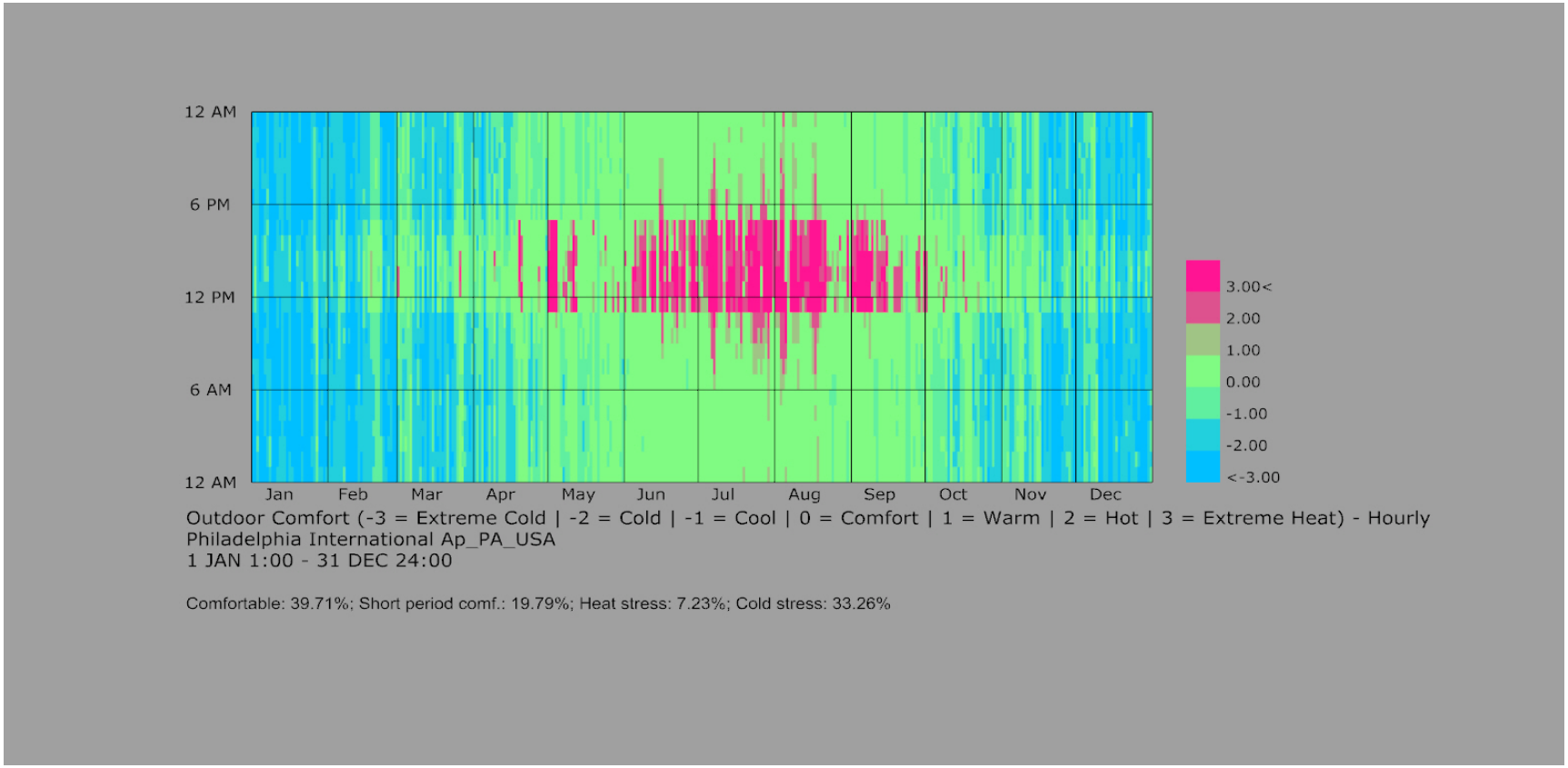
Outdoor Comfort (-3 = Extreme Cold | -2 = Cold | -1 = Cool | 0 = Comfort | 1 = Warm | 2 = Hot | 3 = Extreme Heat) - Hourly
Philadelphia International Ap_PA_USA
1 JAN 1:00 - 31 DEC 24:00

Comfortable: 38.17%; Short period comf.: 19.47%; Heat stress: 9.83%; Cold stress: 32.52%

Site with Context



Location 5



The best location was to find a place in which the heat stress could reduce because of the shade from the surrounding buildings, and also the wind from passing through a tunnel.

The best location was number 5 with the side towards the building blocking out some of the direct readiation caused from the sun.

While location 2 and 4 being the lowest, location 2 had a lower comfort rate as well as a lower short period comfort. However, something that was really interesting to find out was that even though it has the lowest comfort rate it was better than the best location in regards to the cold stress. Therefore it would be a good location to have for seating if applicable shading were to be created.

In regards to Philadelphia, most of the uncomfortable times come from the cold stress that is mopre than the heat stress. Therefore if we can achieve a place that can limit the wind during the winter and to have shade during the hot summer hours, it could do much better.

Currently, thelocation is open with buildings covering it from all the sides. There has to be a much more controlled environment in which people can find better spots to sit during the summer and other spots during the winter.

Final Result:

The most comfortable I was able to make it reach was 39.71% and 19.79% for a short period of time. With a total of approximately 59.5% throughout the year.