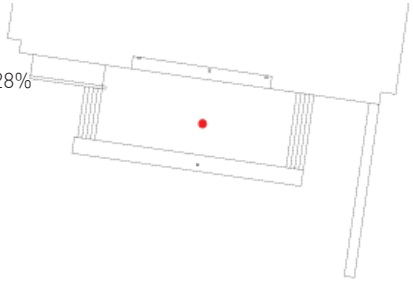
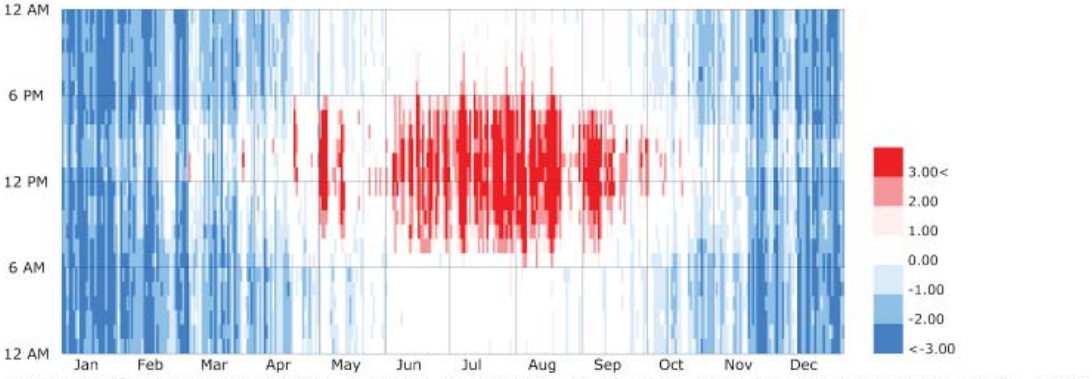
Sirui Chen

Location1

Comfortable: 38.48%
Short period comf: 19.28%
Heat stress: 10.15%
Cold stress: 32.09%

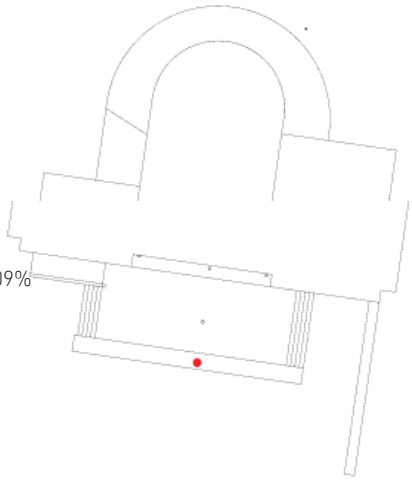


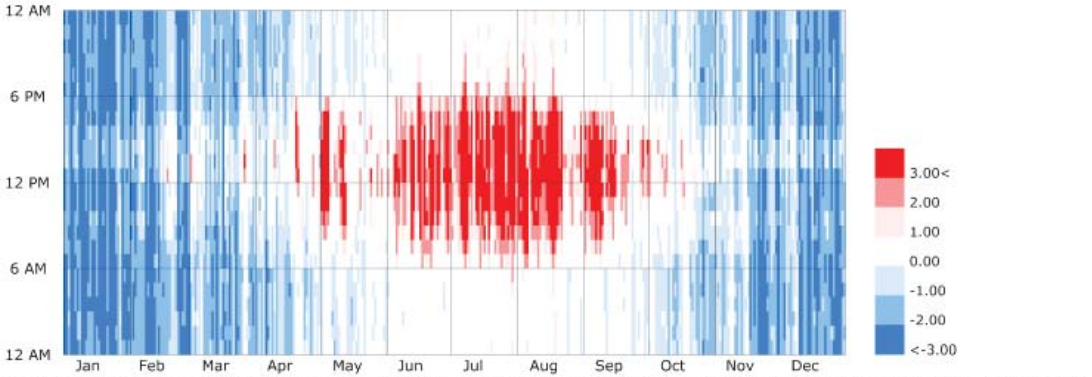


Outdoor Comfort (-3 = Extreme Cold | -2 = Cold | -1 = Cool | 0 = Comfort | 1 = Warm | 2 = Hot | 3 = Extreme Heat) - Hourly
Philadelphia International Ap_PA_USA
1 JAN 1:00 - 31 DEC 24:00

Location2

Comfortable: 37.76%
Short period comf: 19.09%
Heat stress: 10.71%
Cold stress: 32.44%

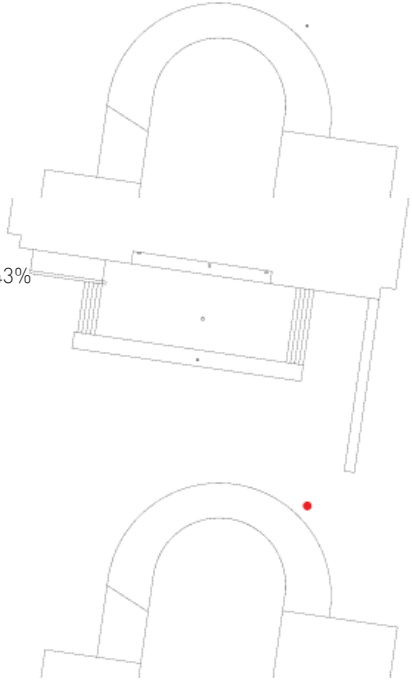


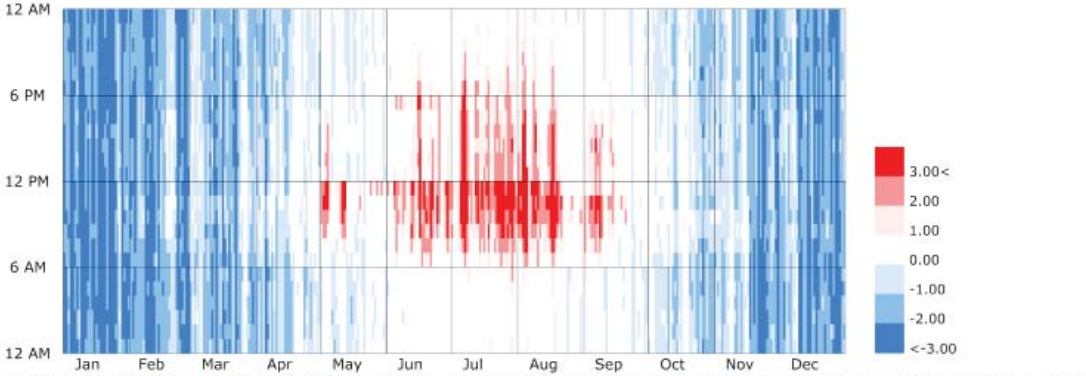


Outdoor Comfort (-3 = Extreme Cold | -2 = Cold | -1 = Cool | 0 = Comfort | 1 = Warm | 2 = Hot | 3 = Extreme Heat) - Hourly
Philadelphia International Ap_PA_USA
1 JAN 1:00 - 31 DEC 24:00

Location3

Comfortable: 39.35%
Short period comf: 20.43%
Heat stress: 5.87%
Cold stress: 34.35%



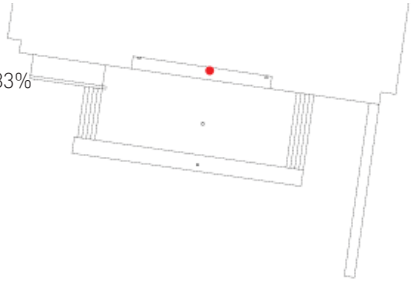


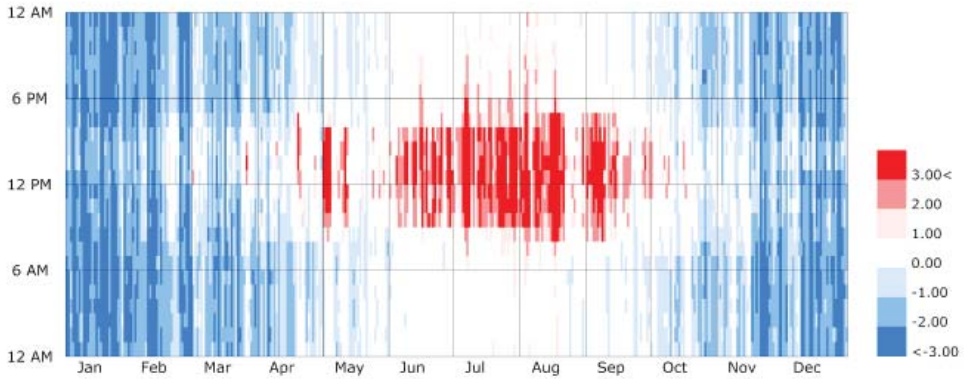
Outdoor Comfort (-3 = Extreme Cold | -2 = Cold | -1 = Cool | 0 = Comfort | 1 = Warm | 2 = Hot | 3 = Extreme Heat) - Hourly
Philadelphia International Ap_PA_USA
1 JAN 1:00 - 31 DEC 24:00

Sirui Chen

Location4

Comfortable: 39.85%
Short period comf: 19.83%
Heat stress: 8.32%
Cold stress: 32.0%

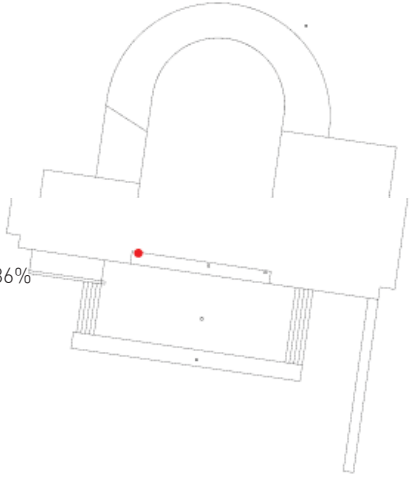


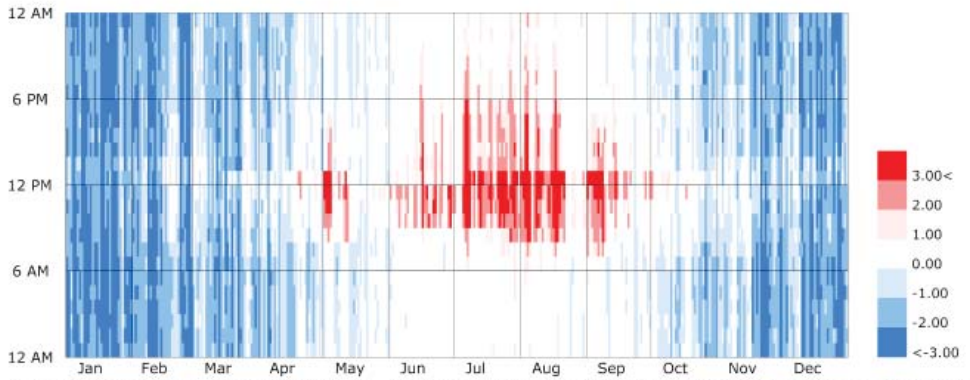


Outdoor Comfort (-3 = Extreme Cold | -2 = Cold | -1 = Cool | 0 = Comfort | 1 = Warm | 2 = Hot | 3 = Extreme Heat) - Hourly
Philadelphia International Ap_PA_USA
1 JAN 1:00 - 31 DEC 24:00

Location5

Comfortable: 40.84%
Short period comf: 20.86%
Heat stress: 5.51%
Cold stress: 32.79%

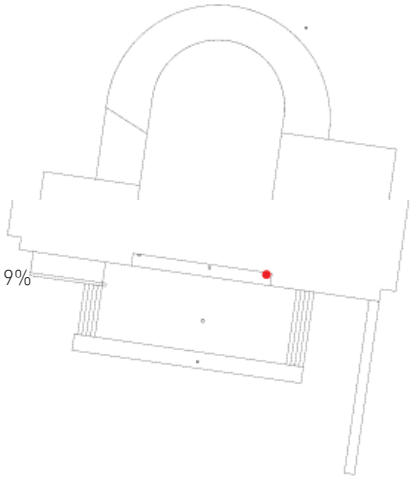


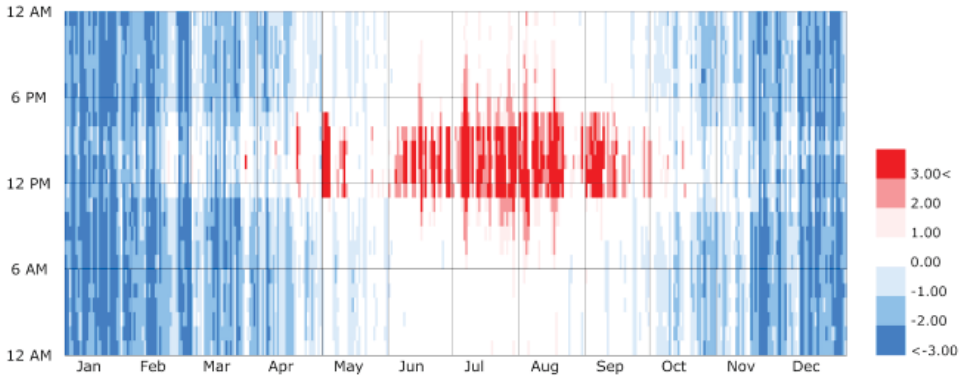


Outdoor Comfort (-3 = Extreme Cold | -2 = Cold | -1 = Cool | 0 = Comfort | 1 = Warm | 2 = Hot | 3 = Extreme Heat) - Hourly
Philadelphia International Ap_PA_USA
1 JAN 1:00 - 31 DEC 24:00

Location6

Comfortable: 40.4%
Short period comf: 20.19%
Heat stress: 6.44%
Cold stress: 32.97%





Outdoor Comfort (-3 = Extreme Cold | -2 = Cold | -1 = Cool | 0 = Comfort | 1 = Warm | 2 = Hot | 3 = Extreme Heat) - Hourly
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Sirui Chen

What is the thinking process to find the best locations?

The outdoor comfort is highly related to the shading condition of the spot, and buildings around provide shadows. Two main buildings are found around the area that I'm focusing on -- Fine Arts Library and Meyerson Hall. Therefore I divided the area into several sections according to the relative distance to both buildings and calculated the UTCI to find the best spot.

What is the difference between the best and the worst locations?

The best location is best shaded spot in the area whereas the worst location has the least amount of shade.

What are the effective parameters that makes the best location perform better than other spots?

Shading. Shade improved the mean radiant conditions thus made the best location performed better.

What are the main limitations of the current simulation method for your study?

The percentage of comfortable time only shows the annual average, regardless of seasons. Yet for outdoor seating, the design needs to produce comfortable condition for both summer and winter. Simulation used so far doesn't provide thus considerations.