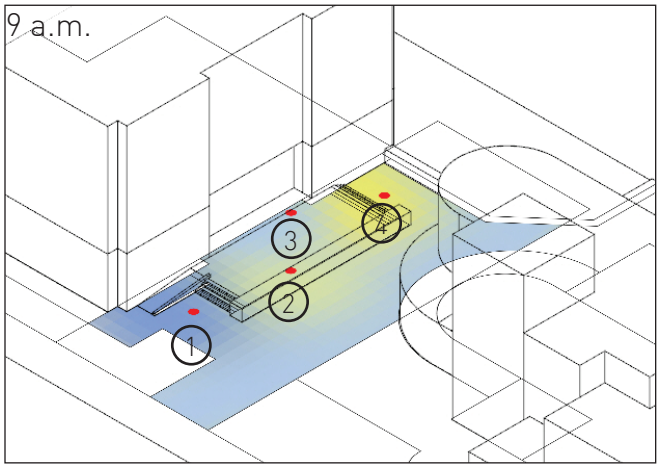
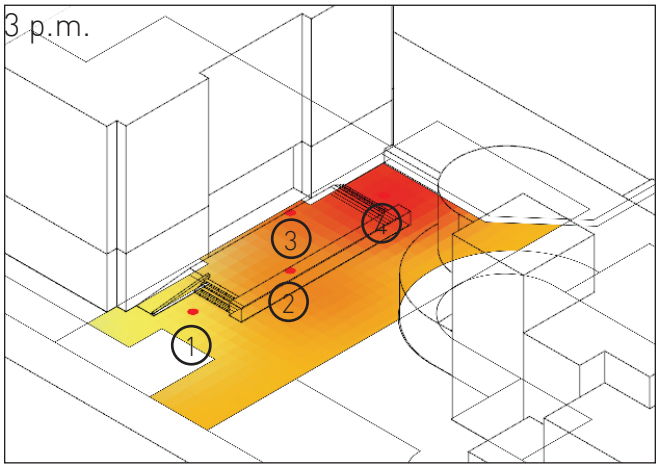
Celia HAO | Weizhen JIA | Sirui CHEN

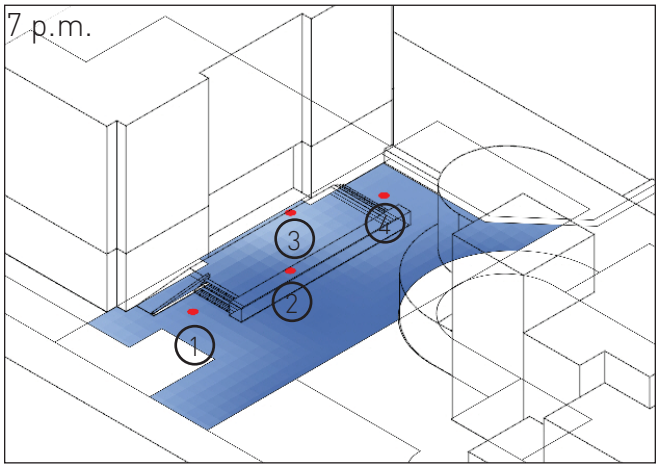
Documentation -- Data

F

110 70







Location	Temp General (F)	Temp Surface (F)	Wind Speed (mhp)	Feel / Comfort
1	76.4	105	1.7	warm to hot, no shade, little windy
2	86	97.8	0.8	hot, direct sunlight, don't feel wind
3	84.6	91.9	0.6	warm, shaded, feel wind flow, comfortable
4	93.3	87.3	0.4	warm to hot, partially shaded by tree, feel wind flow, hot to comfortable
Phone Data	81		6	

Location	Temp General (F)	Temp Surface (F)	Wind Speed (mhp)	Feel / Comfort
1	92.8	125	0.2	feel hot under sun, half shaded by tree, not comfortable
2	98	111.4	1.3	hot, wind helps cool down a little bit, no shade, not comfortable
3	102	126.3	0.8	hot, little windy, a little bit shaded by near building, not comfortable
4	106	122.5	0.2	hotest spot, direct sunlight, no shade, don't feel wind flow, not comfortable
Phone Data	84		3	

Location	Temp General (F)	Temp Surface (F)	Wind Speed (mhp)	Feel / Comfort
1	74.3	84	4	very cool, windy, rainy
2	70	92.5	3.5	very cool windy, rainy
3	75.1	101.2	3.2	very cool, less windy, rainy
4	71.3	94.5	3.8	very cool, windy, rainy
Phone Data	74		6	

Philadelphia International Historical Weather Data

	9/16/2004 9 a.m.	9/16/2004 3 p.m.	9/16/2004 7 p.m.
Temp (F)	69.1	75.9	75
Humidity (%)	90%	64%	69%
Wind Speed (mhp)	3.5	4.6	4.6

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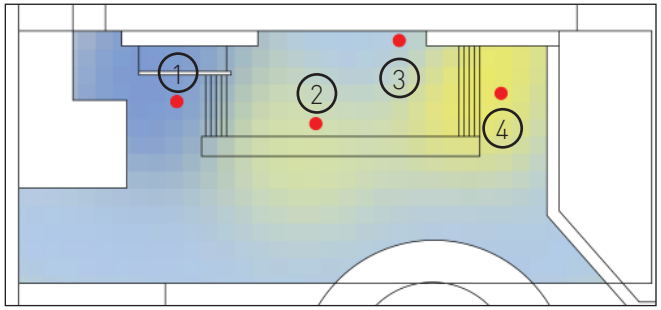
Documentation -- Activity

F

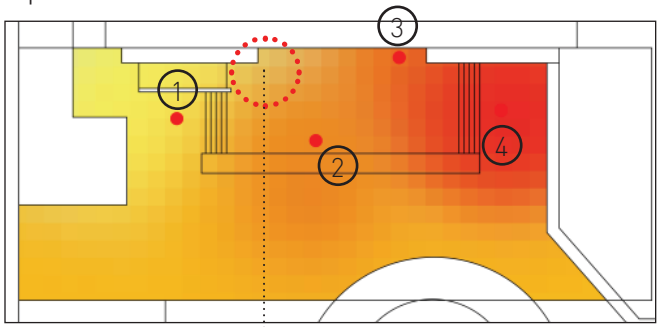
110 70

9 a.m.



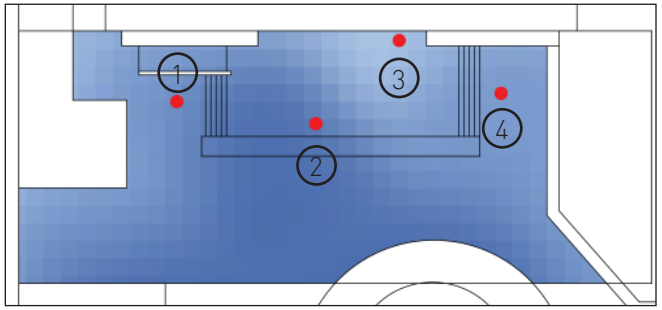
No activity spotted

3 p.m.

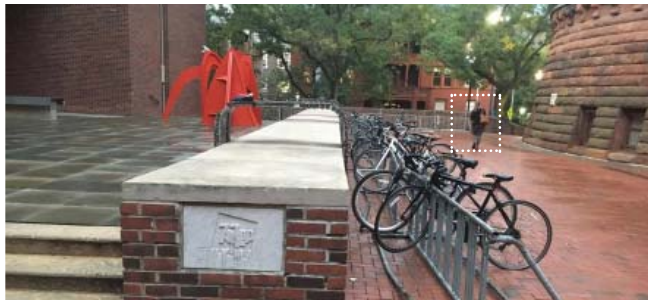


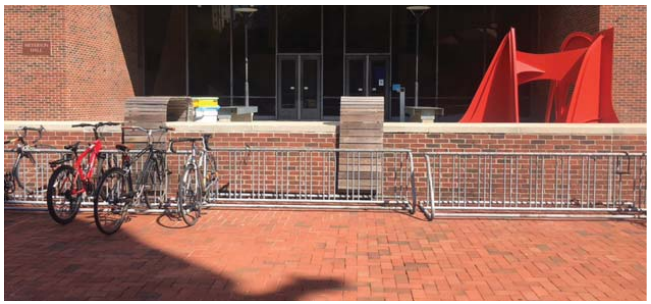
Two people chatting

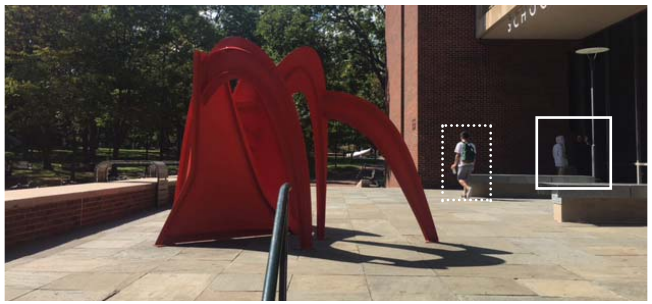
7 p.m.

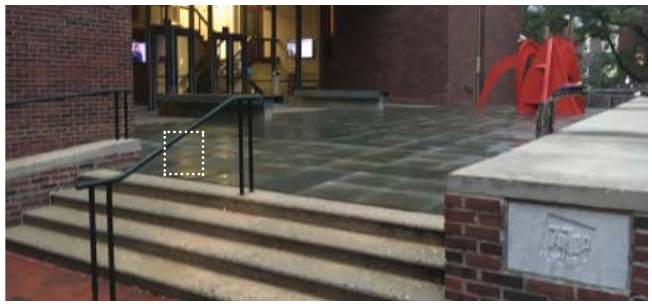


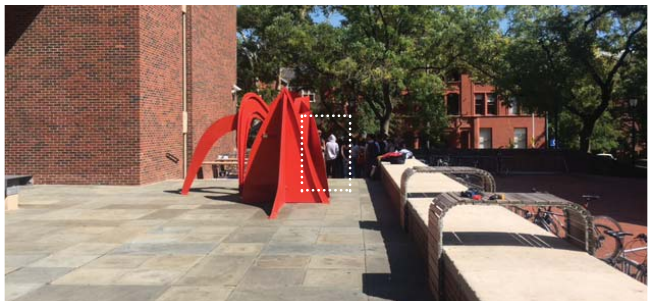
No activity spotted











Analysis

- Relationship between activities and thermal comfort

According to our observation, activities are influenced thermal comfort in the area at the measuring date in front of Meyerson Hall.
Due to the general uncomfortable weather of the day, very few activities were observed outdoor at Meyerson Hall. Most people were spotted passing by the area. The only people staying chose to talk in the shaddy area, but didn't stay very long.

- 2 design proposals for a more comfortable outdoor space

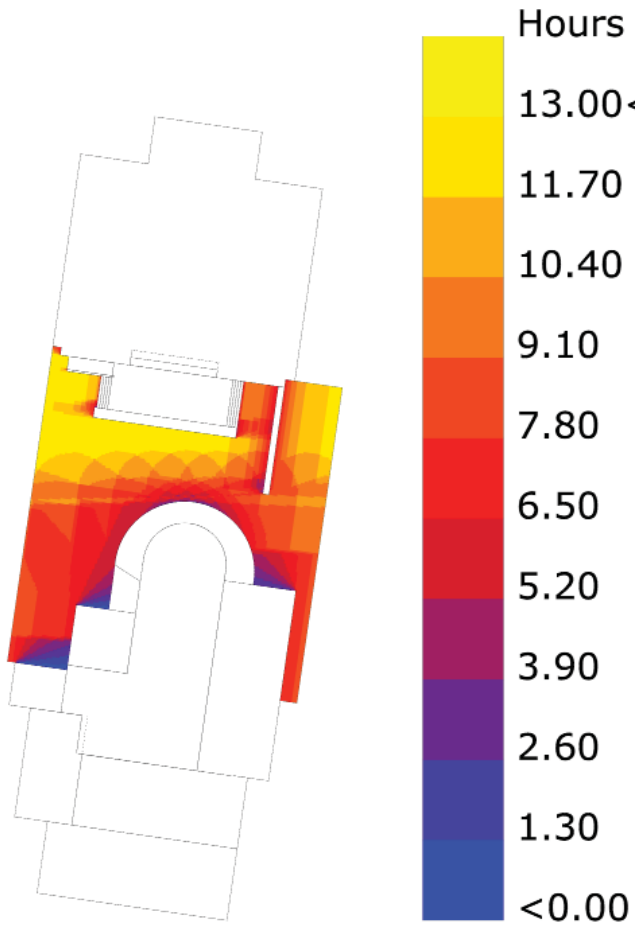
Install sunshade around the concrete bench area.
It could be seen from the map that thermal comfort pattern's change is related to sunpath. Therefore to create an outdoor area with more consistant thermal comfort, sunshade could be used to block out extra sunlight in hot days, and retracted in winter.

Provide movable seats on Meyerson's platform.
Since we realized the outdoor activities are largely limited by fixed sitting area, we propose to give users more flexible choice when it comes to finding thermal comfort zone outside.

- Difference between local weather data, weather file, and station weather data

Throughout the three time points in our measurement, the difference in temperature between station weather data and local weather data is large at 9 a.m. (averagely 10F difference). The difference might be caused by Meyerson Hall area's shading condition as well as building material. These local conditions would have made the area gain heat faster than the average level in Philadelphia.

Wind speed's difference is huge throughout the day (with local wind speed normally around 1 and weather station's 10). The difference could primarily be caused by building geometry at the area.



SunlightHours Analysis