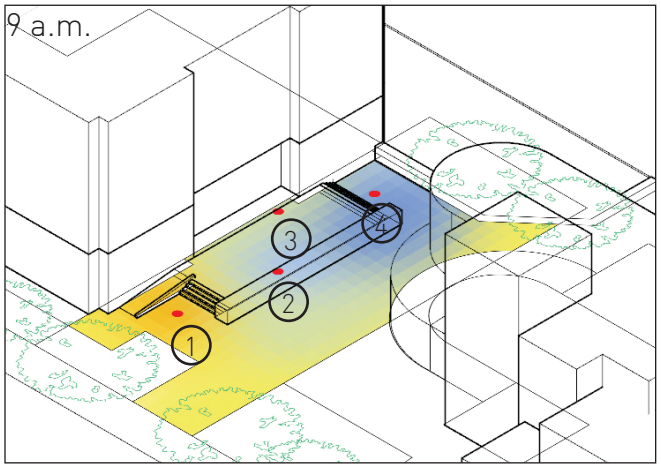
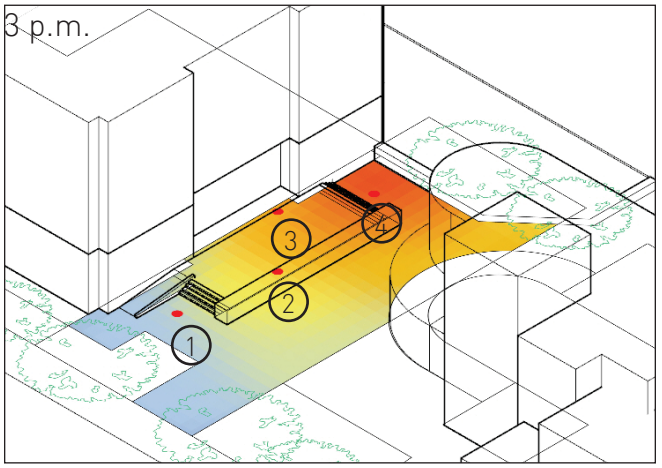
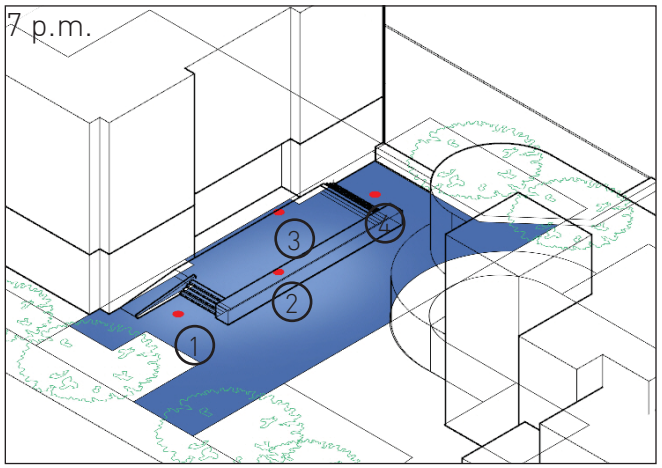
Documentation -- Data

UTCI

36 28







Location	Temp General (F)	Temp Surface (F)	Wind Speed (mhp)	Feel / Comfort
1	74	70.5	0.6	Warm to hot, it's hot if don't move, no shade
2	71	84	1	warm to hot, windy, feel hot if don't move, no shade
3	72	67	0.3	Chill, don't feel windy, shaded by meyson
4	72.3	69	2	comfortable, msot windy area the time, semi-shaded by tree and building nearby
Phone Data	63		10	

Location	Temp General (F)	Temp Surface (F)	Wind Speed (mhp)	Feel / Comfort
1	71.7	92.4	3	confortable, windy, shade by tree
2	70	108	1.7	comfortable, windy, no shade
3	72.6	106	0.8	hot, little windy, no shade
4	78.8	110	0.8	hot, little windy, no shade
Phone Data	72		11	

Location	Temp General (F)	Temp Surface (F)	Wind Speed (mhp)	Feel / Comfort
1	70.5	78.3	0.3	after sunset, feel a little chill, wind make it feel more chill, not windy
2	70.7	64.9	0.5	after sunset, Feel comfortable, a little chill, a little windy
3	68.5	71.7	0.3	after sunset, comfortable, not windy
4	68.9	84.3	0.5	after sunset, Feel comfortable to a little chill,can feel wind flow
Phone Data	65		11	

Philadelphia International Historical Weather Data

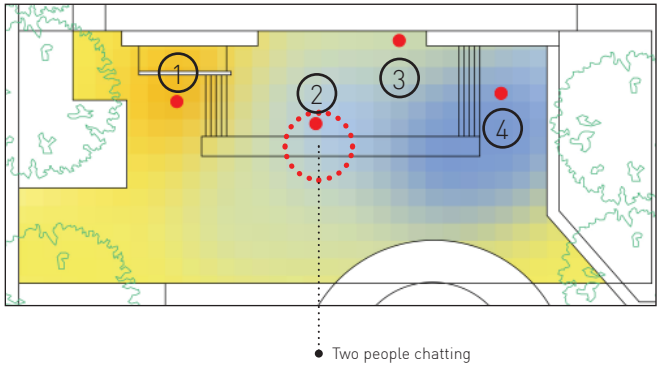
	9/8/2004 9 a.m.	9/8/2004 3 p.m.	9/8/2004 7 p.m.
Temp (F)	73.0	81.0	75.9
Humidity (%)	96%	69%	85%
Wind Speed (mhp)	6.9	8.1	9.2

Documentation -- Activity

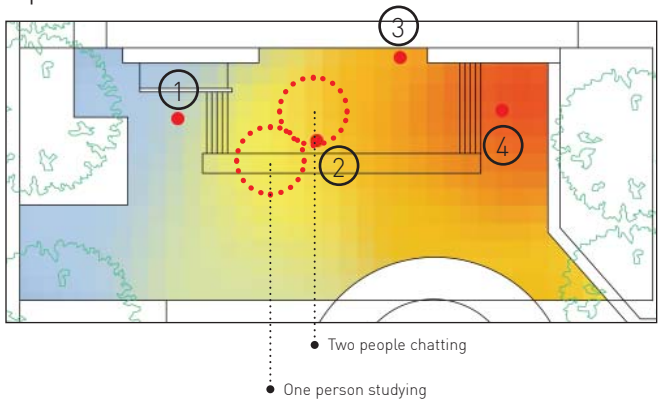
UTCI

36 28

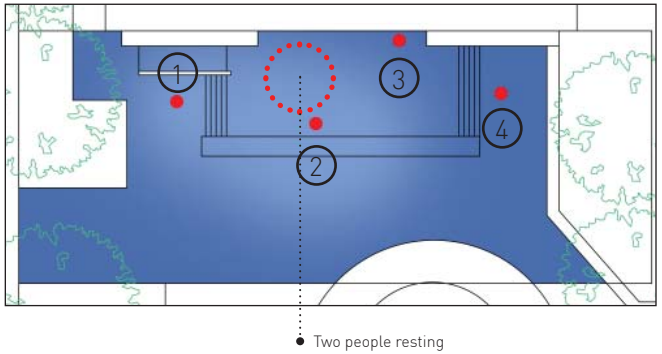
9 a.m.

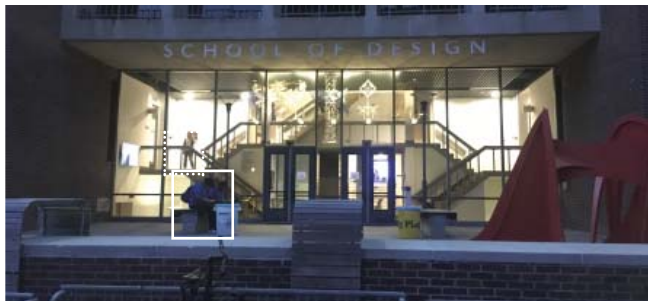


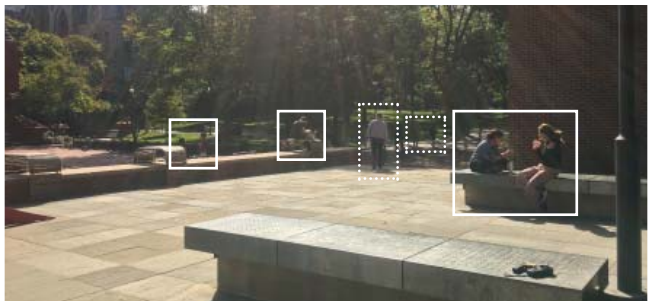
3 p.m.

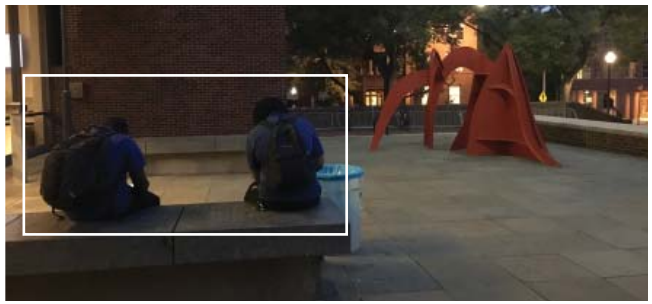


7 p.m.









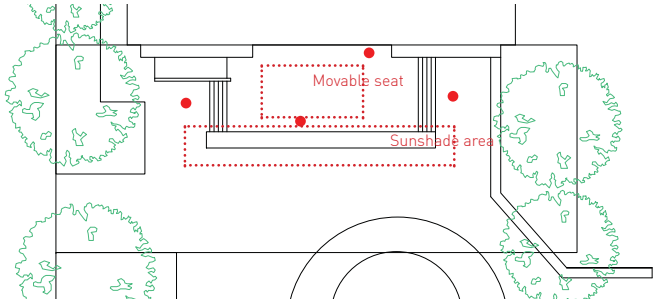
Analysis

- Relationship between activities and thermal comfort

According to our observation, activities are influenced, but not strongly affected by thermal comfort in the area in front of Meyerson Hall.
Passengers' routes are primarily decided by the travel distance. People who chat outside make use of the existing sitting place, yet no strong evidence shows that users would take the most comfortable sitting area. People study outdoor prefer area with shade.
Such outcome might be resulted from two reasons: firstly, users' activities are mainly decided by existing utilities in the area; secondly, the thermal comfort difference at the measuring time and location isn't large enough to influence users' choice.

- 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.

- Prediction of comfort map on summer day/ winter day

Meyerson Hall faces west south, receives more direct sunlight in summer and angled sunlight in winter. Considering surrounding building geometry and general temperature, we would predict that comfort zone is around spot 3 in summer and spot 2 in winter.