

# **COMFORT and SUNLIGHT MAPPING**

## **GROUP #5**

Alex Adamski, Elizabeth Heldridge, Jinah Oh

## COMFORT MAPPING QUESTIONS+DISCUSSION PART II

### 1. Is there any relationship between thermal comfort and behavior?

- a. In the areas of direct sunlight, there were groups of people standing and sitting--however visits were limited to 30 min or less. The most activity was in the areas of partial shade, particularly the entrance to the corridor that runs alongside Van Pelt. No activity was seen in the areas of complete shade--the back end of the corridor. This area felt too cold and the winds seemed stronger.
- b. The second time we went to visit the site, the activity at the site was slightly different as there was a Play being performed on the steps leading towards the corridor. The play took place all day and minimized any pedestrians cutting across the corridor to the back side of the Van Pelt.

### 2. As a designer what would be your top 2 design proposals to make the space more comfortable for outdoor activities?

- a. One: Towards the end of the corridor, we would suggest the removal of some trees. There is a significant amount of shade provided by the library and as a result, additional shading from trees is unnecessary. This area felt uncomfortably cold.
- b. Two: The second design change would be to add more useable landscape in the area of the corridor. The two seating surfaces were limited to a total of three wooden benches and a small retaining wall. There was no grass for visitors to sit on--the area was dominated by ground cover that you could not walk or sit on.
- c. Note: this seating area was extremely high in mosquitos, which we have not noticed anywhere else on campus. We speculate that the vegetation and excessive shading promotes mosquito breeding.

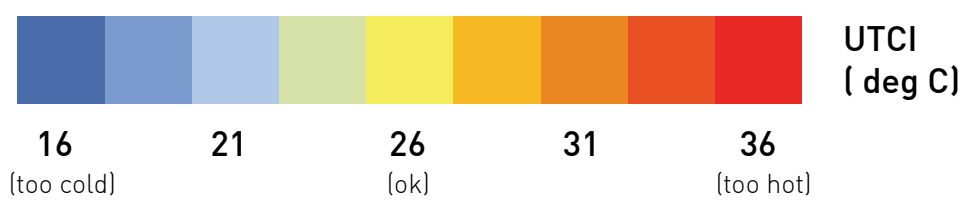
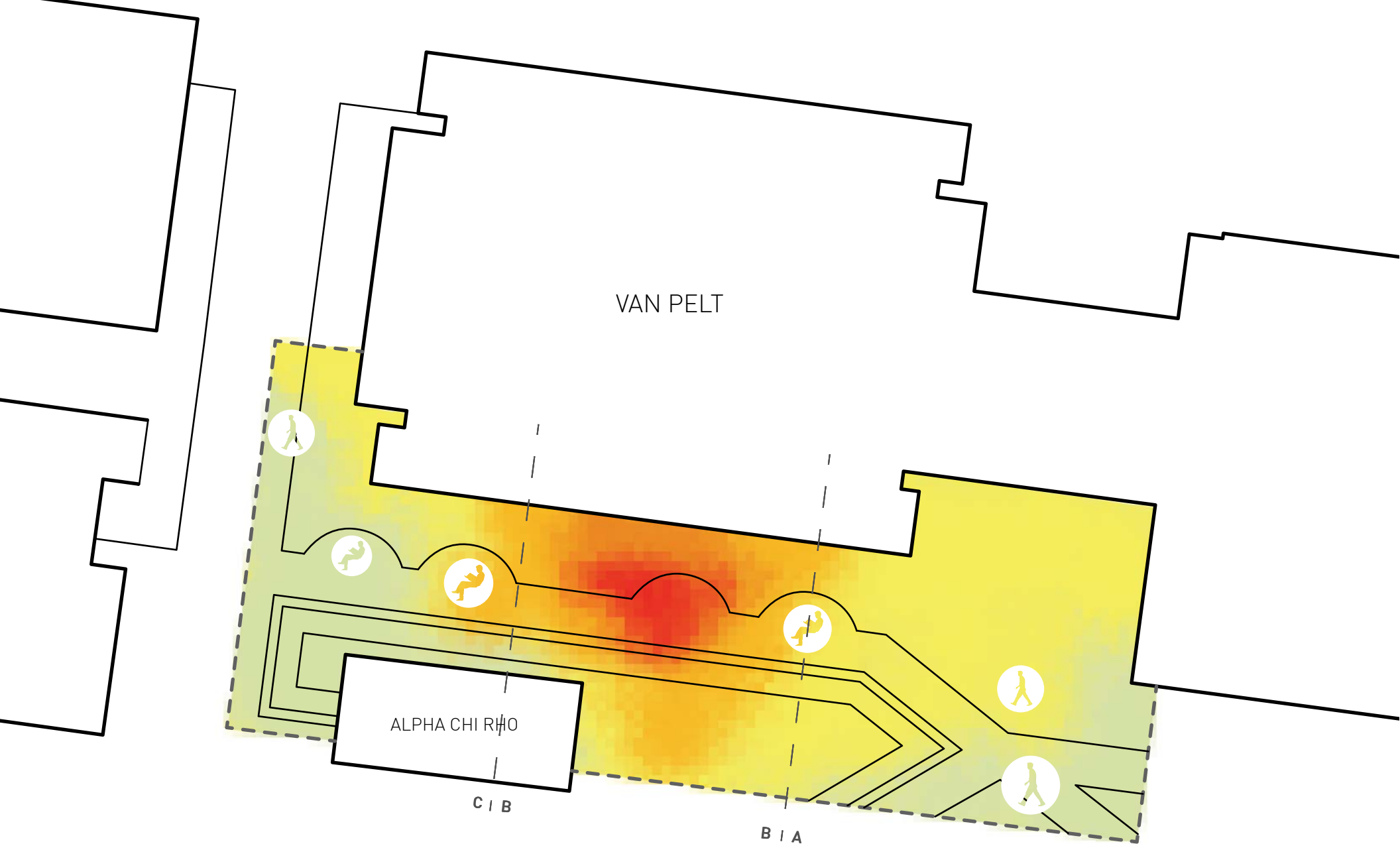
### 3. Is there a difference between local weather data, weather file and the station weather data? How much is the difference?

09/10/17

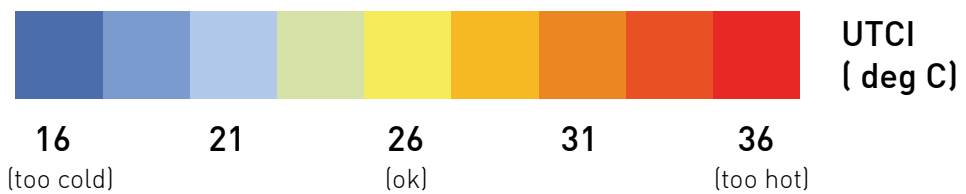
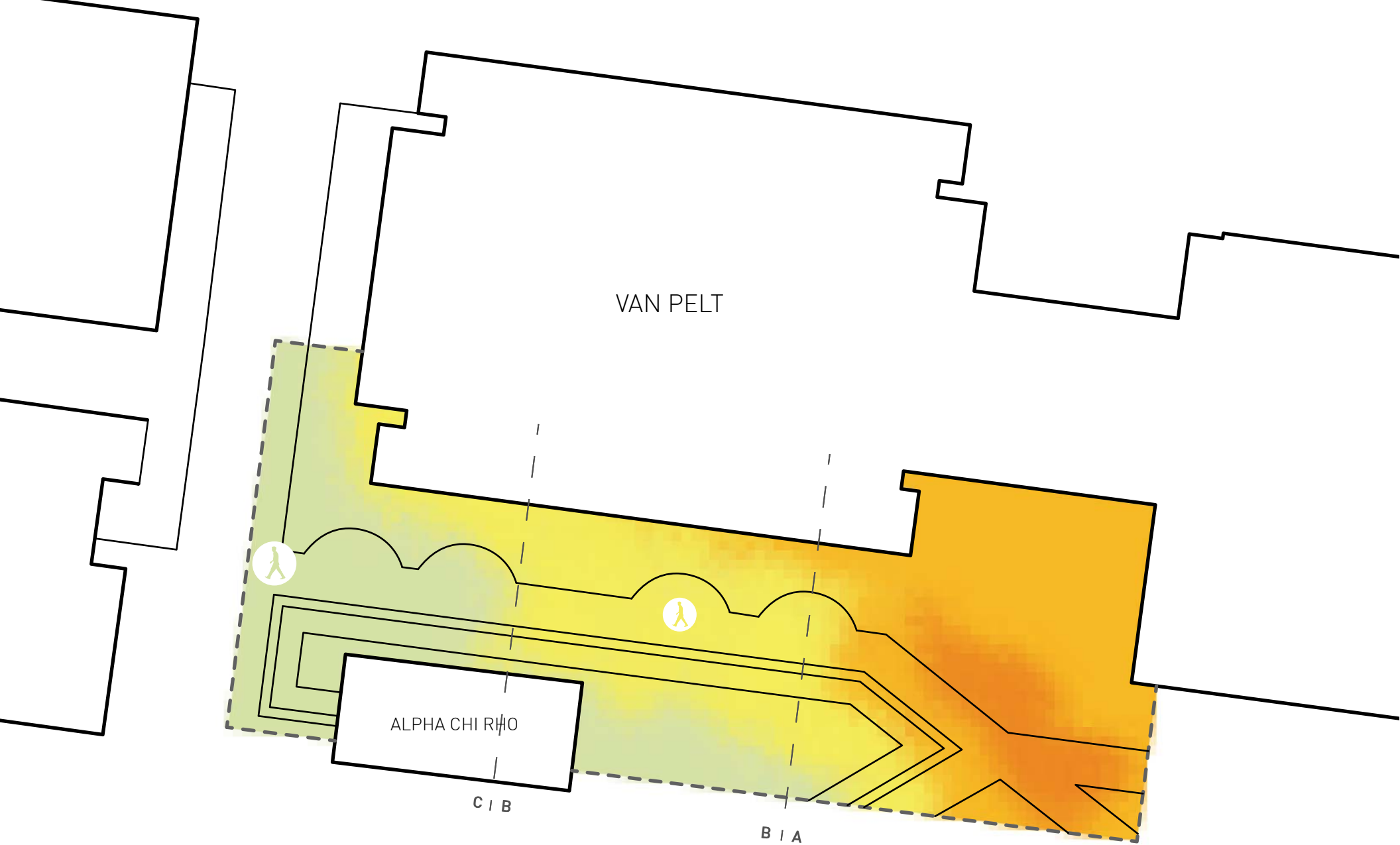
- a. Local weather data (data we recorded):
  - i. 12 pm -- 25.9°
  - ii. 3 pm -- 22.9°
  - iii. 7:30 pm -- 20°
- b. Weather file (EPW):
  - i. 12 pm -- 23.9°, NNE 8.2 mph
  - ii. 3 pm -- 23.9°, 6.2 mph
  - iii. 7:30 pm -- 18.3°, 5.7 mph
- c. Station weather data (Weather.com):
  - i. 12 pm -- 21°, NNE 10 mph
  - ii. 3 pm -- 23°, NNE 9 mph
  - iii. 7:30 pm -- 20°, N 6 mps
- d. The difference between the different sources of data were only by a few degrees in terms of temperature. The largest difference we noticed however was the wind speed between the station and the data we collected. We have deduced that the wind speed was higher in our location (open corridor next to the Van Pelt library and Alpha Kai Ro House) because of the wind tunnel created between the two tall buildings.

**09/14/17**

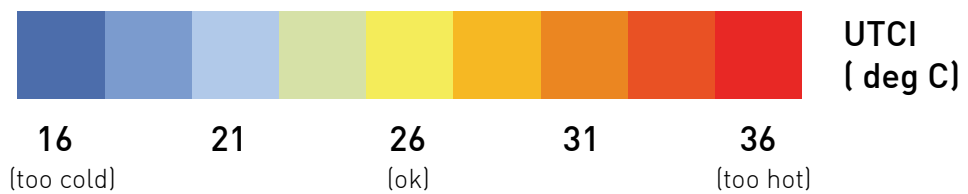
- e. Local weather data (data we recorded)
  - i. 12:30 pm -- 22.7°
  - ii. 3 pm -- 23.7°
  - iii. 7:30 pm -- 21.7°
- f. Weather file (EPW):
  - i. 12:30 pm -- 30.6°, 4.9 mph, 53% relative humidity
  - ii. 3 pm -- 28.3°, 4.1 mph, 55% relative humidity
  - iii. 7:30 pm -- 27.2°, 3.6 mph, 65% relative humidity
- g. Station weather data (Weather.com):
  - i. 12:30 pm -- 25°, W 5 mph
  - ii. 3:30 pm -- 26°, W 5 mph
  - iii. 7:30 pm -- 25.5°, W 5 mps



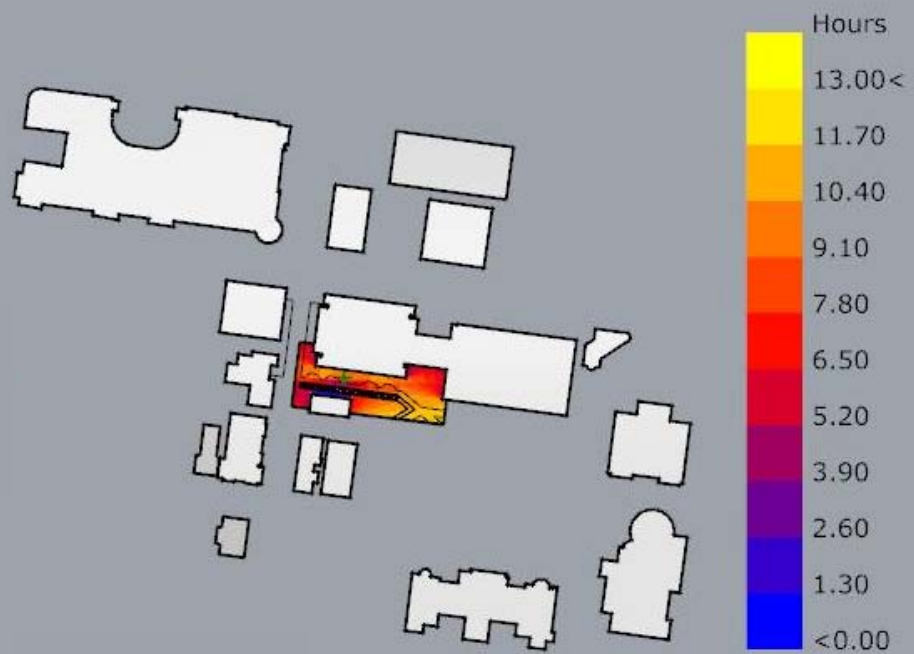
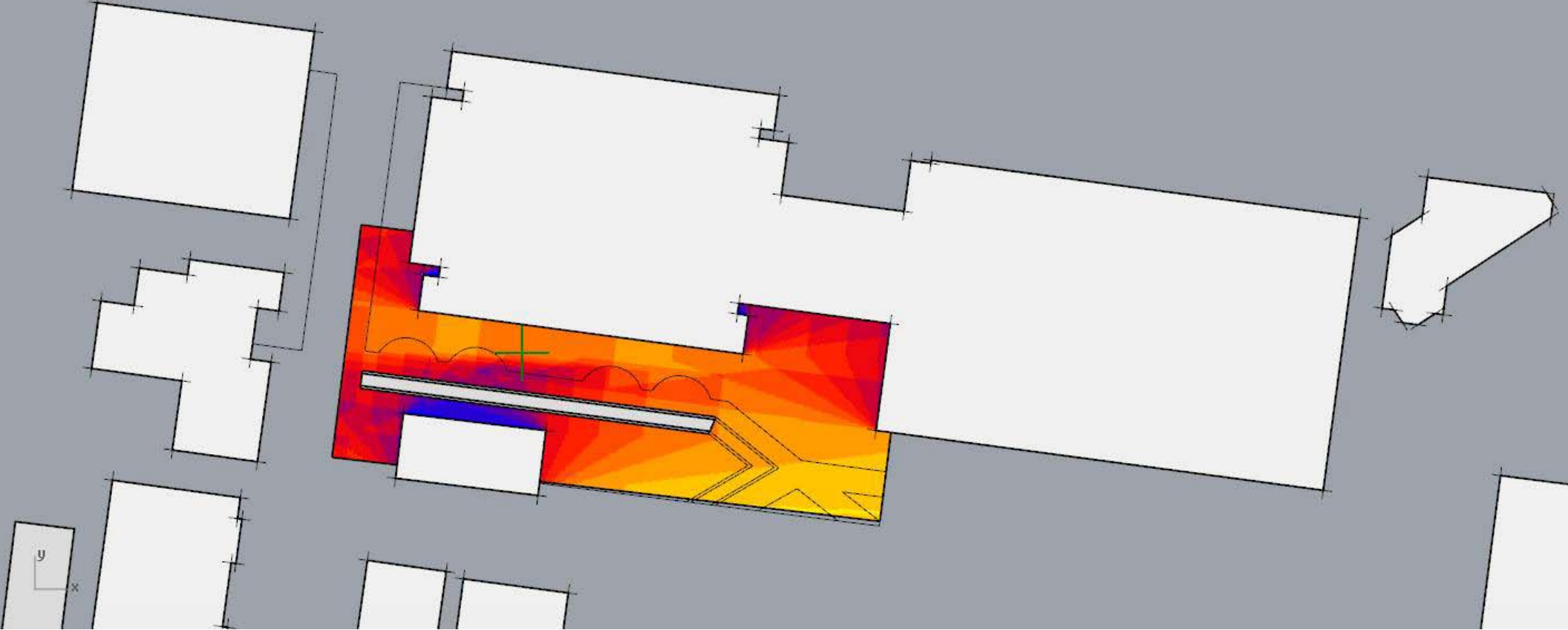
Date: 09/14/2017  
Time: 12:30 PM



Date: 09/14/2017  
Time: 3:30 PM



Date: 09/14/2017  
Time: 6:30 PM



Sunlight Hours Analysis  
09/14/2017

Site Visit #4: 12:30 pm Thursday, September 16th, 2017					
ENVIRONMENT					
	Air Temp.	Relative Humidity	Wind Speed		
Region A	22.7 C	56.80%	1.7 m/s		
Region B	28.3 C	44.50%	0.5 m/s		
Region C	30.7 C	64.20%	1.3 m/s		
MATERIALS					
	Material Temp.		Sun or Shade		
Materials at Location A					
South Facing Van Pelt Brick Wall	31.5 C		In Shade		
Brick Pavement Walkway	32.1 C		In Sun		
North Facing High Retaining Wall	26.9 C		In Shade		
Materials at Location B					
South Facing Van Pelt Brick Wall	25.0 C		In Shade		
Brick Pavement Walkway	35.5 C		In Sun		
North Facing High Retaining Wall	28.6 C		Partial Shade		
Materials At Location C					
South Facing Van Pelt Brick Wall	23.7 C		In Shade		
Brick Pavement Walkway	25.0 C		In Shade		
North Facing High Retaining Wall	25.5 C		In Shade		



Site Visit #5: 3:30 Thursday, September 16th, 2017					
ENVIRONMENT					
	Air Temp.		Wind Speed		
Region A	23.7 C	51.10%	1.2 m/s		
Region B	24.8 C	51.00%	.9 m/s		
Region C	25.4 C	54.10%	1.0 m/s		
MATERIALS		Material Temp.	Sun or Shade		
Materials at Location A					
South Facing Van Pelt Brick Wall	26.1 C		Partial Shade		
Brick Pavement Walkway	37.5 C		In Sun		
North Facing High Retaining Wall	31.4 C		In Shade		
Materials at Location B					
South Facing Van Pelt Brick Wall	25.8 C		In Shade		
Brick Pavement Walkway	26.2 C		In Sun		
North Facing High Retaining Wall	28.7 C		In Shade		
Materials At Location C					
South Facing Van Pelt Brick Wall	24.4 C		In Shade		
Brick Pavement Walkway	24.5 C		In Shade		
North Facing High Retaining Wall	26.4 C		In Shade		

<b>Site Visit #6: 6:40 Thursday, September 16th, 2017</b>					
<b>ENVIRONMENT</b>					
	<b>Air Temp.</b>		<b>Wind Speed</b>		
Region A	23.2 C	64.10%	0.6m/s		
Region B	22.5 C	63.50%	0.5m/s		
Region C	21.7 CF	66.30%	0.9m/s		
<b>MATERIALS</b>					
	<b>Material Temp.</b>		<b>Sun or Shade</b>		
Materials at Location A					
South Facing Van Pelt Brick Wall	24.4 C		Sun Down		
Brick Pavement Walkway	24.5 C		Sun Down		
North Facing High Retaining Wall	26.4 C		Sun Down		
Materials at Location B					
South Facing Van Pelt Brick Wall	24.5 C		Sun Down		
Brick Pavement Walkway	24.6 C		Sun Down		
North Facing High Retaining Wall	26.1 C		Sun Down		
Materials At Location C					
South Facing Van Pelt Brick Wall	24.4 C		Sun Down		
Brick Pavement Walkway	24.5 C		Sun Down		
North Facing High Retaining Wall	26.4 C		Sun Down		
<b>Reported Weather Data: Apple Weather App</b>					
Temperature	27 C / 17 C				
Precipitation	1%				
Humidity	60%				
Wind	NE 2mph				
Clear and Sunny					