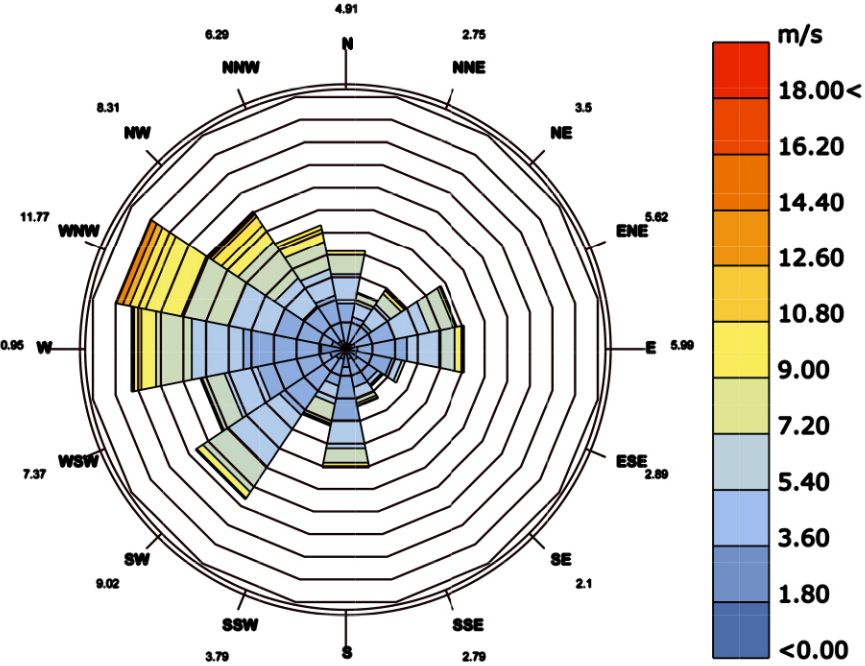
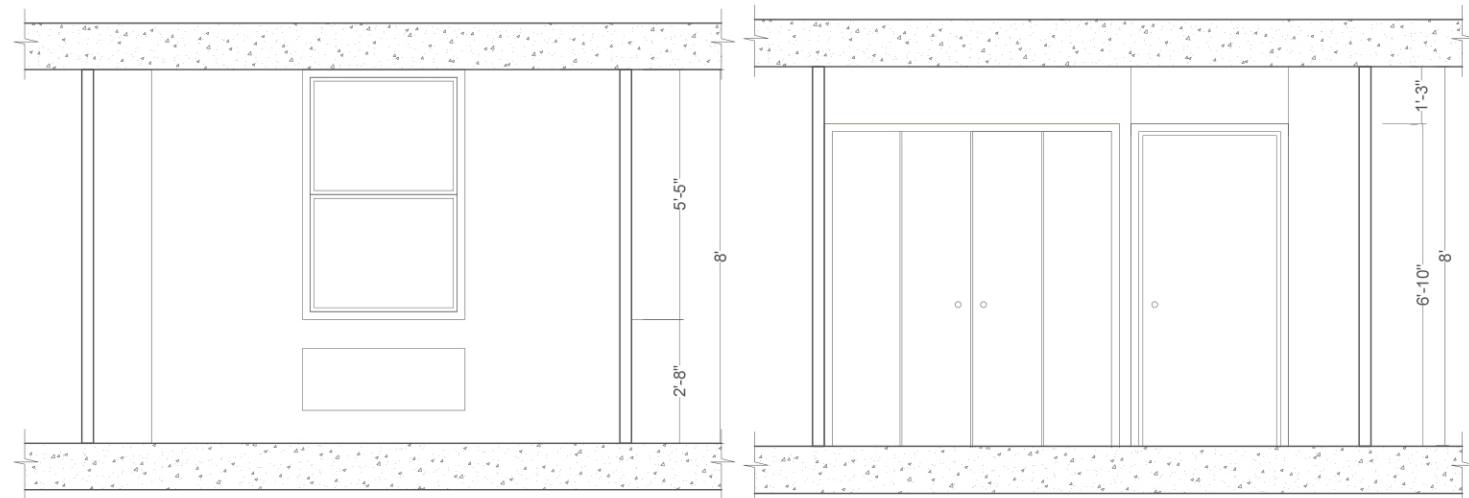
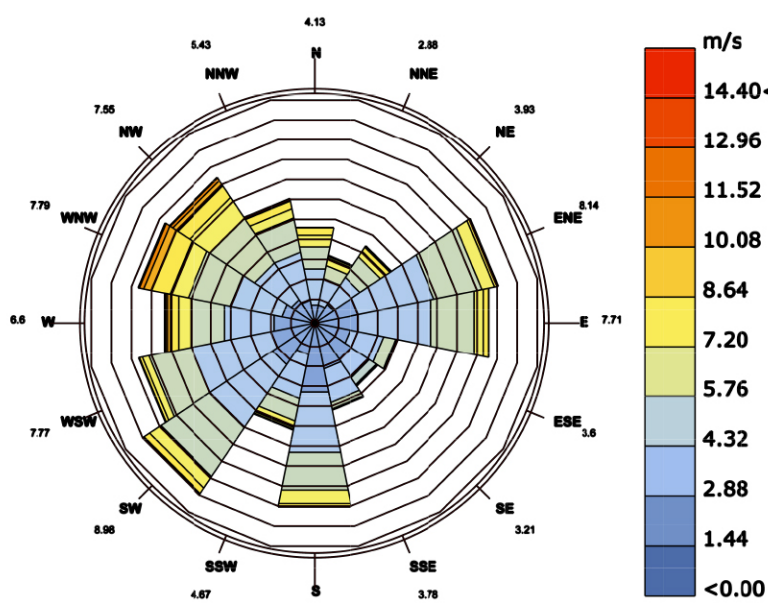


Dream Room Strategy from Climate Data

Philadelphia County_Pennsylvania
Longitude: -75.2311, Latitude: 39.8683



Wind-Rose
Philadelphia International Ap_PA_USA
1 SEP 1:00 - 31 MAR 24:00
Hourly Data: Wind Speed (m/s)
Calm for 3.34% of the time = 170 hours.
Each closed polyline shows frequency of 1.2%. = 59 hours.

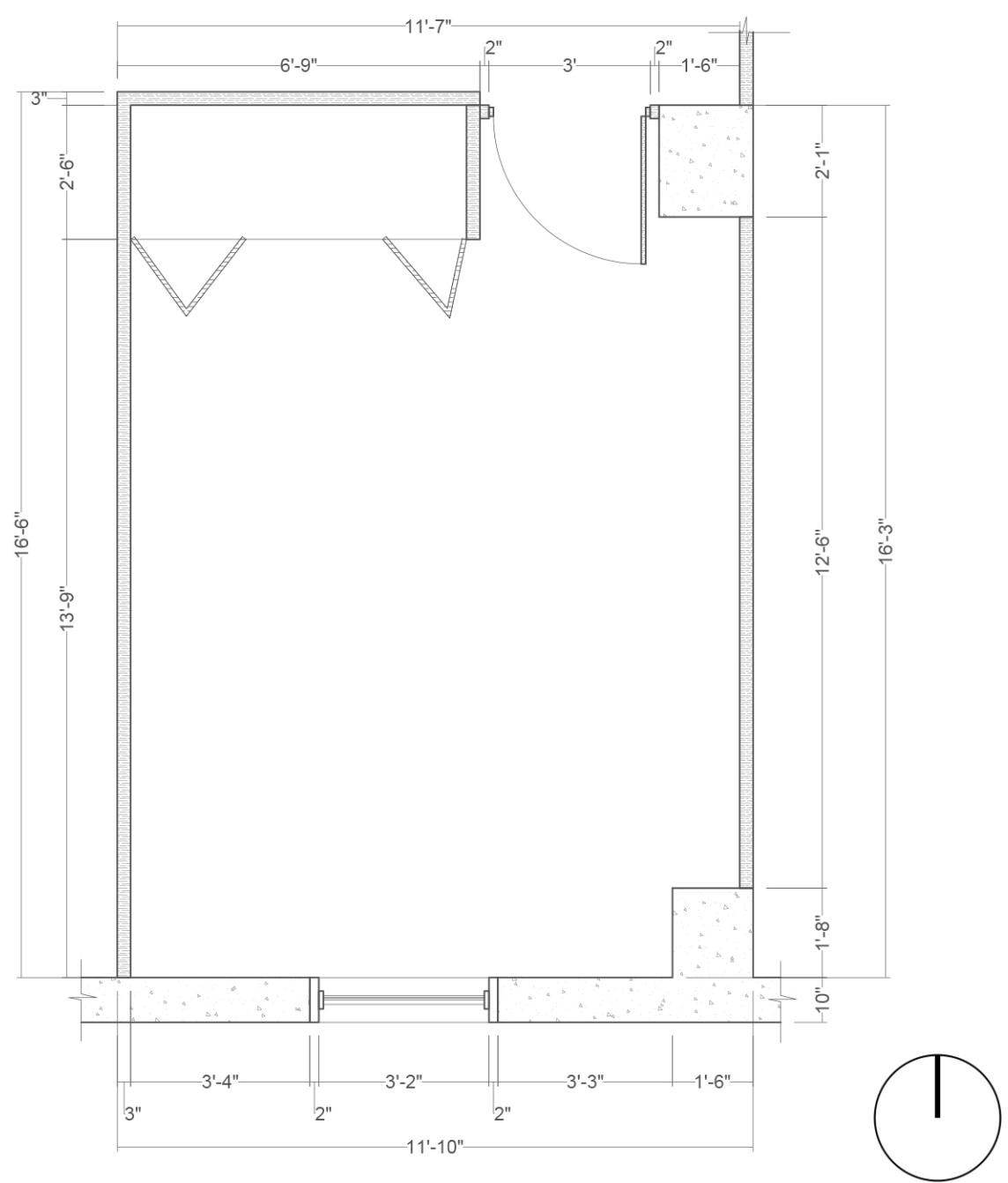
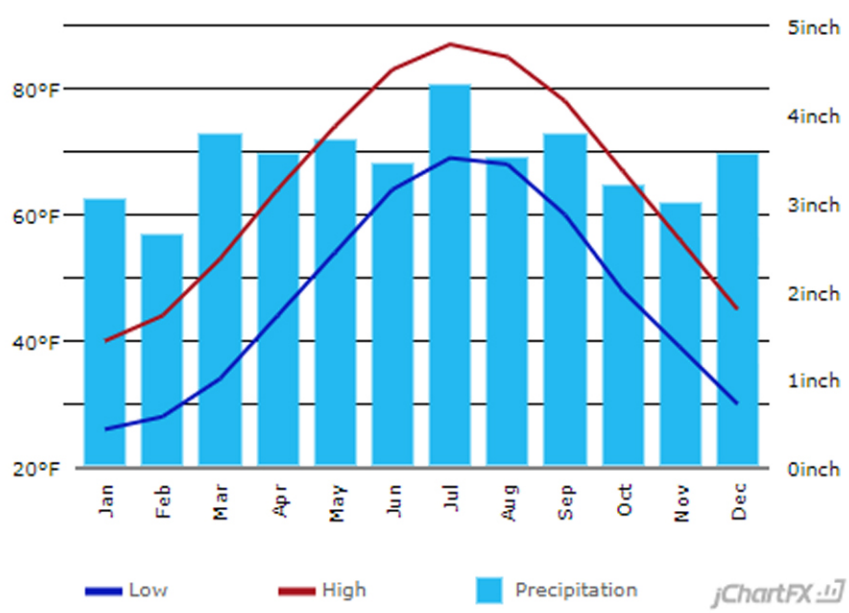


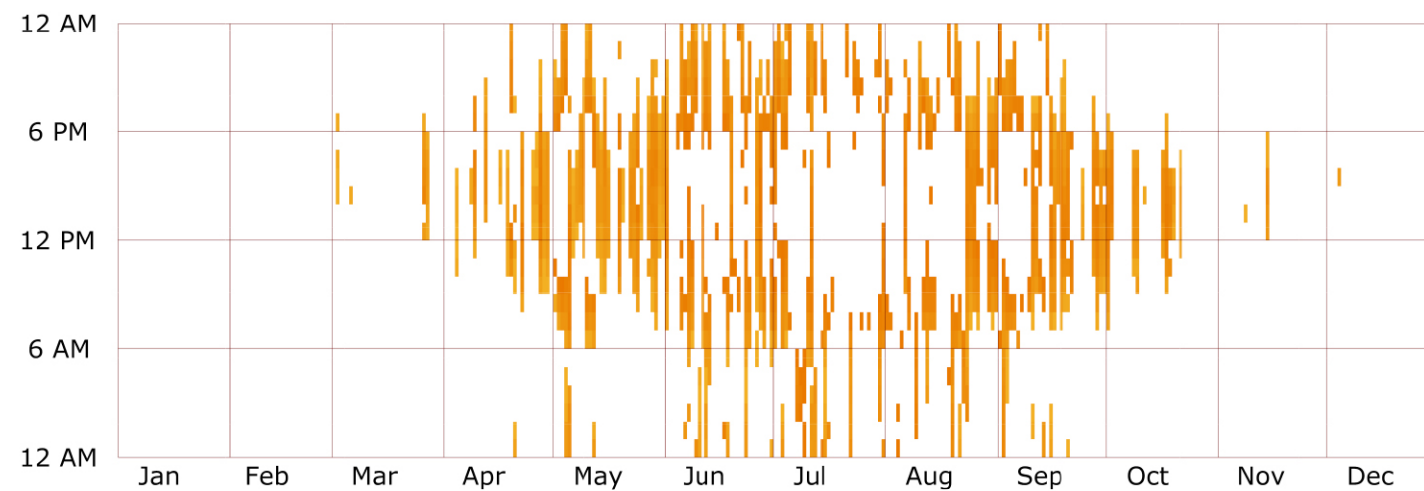
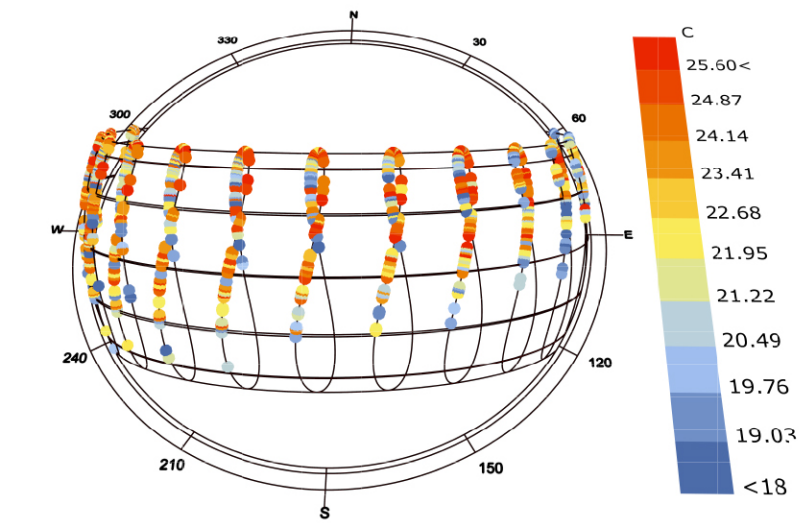
Wind-Rose
Philadelphia International Ap_PA_USA
1 MAR 1:00 - 30 SEP 24:00
Hourly Data: Wind Speed (m/s)
Calm for 2.65% of the time = 136 hours.
Each closed polyline shows frequency of 0.9%. = 46 hours.

Strategy 1: From the wind rose chart it can be seen that in winter the WNW, NW and W side has the highest velocity and frequency. Therefore this side can be closed for direct wind But the summer has additional wind rose from WSW SW and S. Therefore, Making opening in these sides would let the summer breeze in.

But since from percipitation data the summer rain rate is quite high so it should have some form of control.

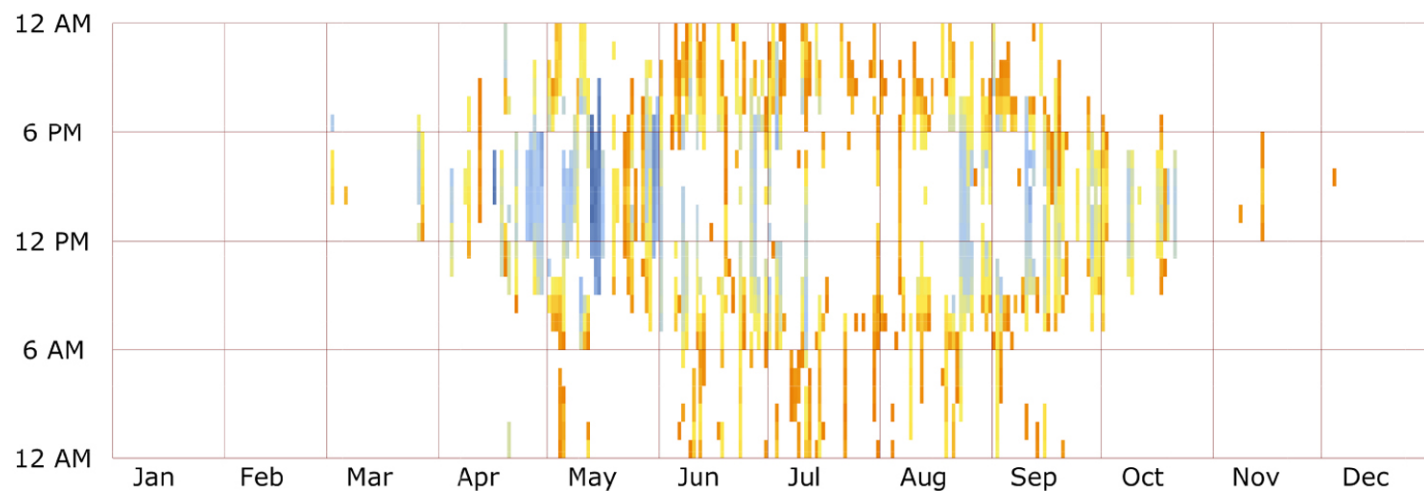
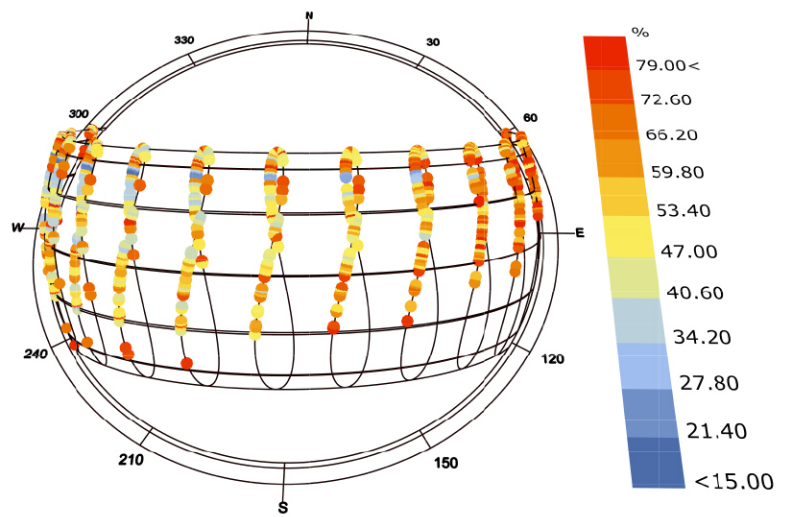
Philadelphia Climate Graph - Pennsylvania Climate Chart





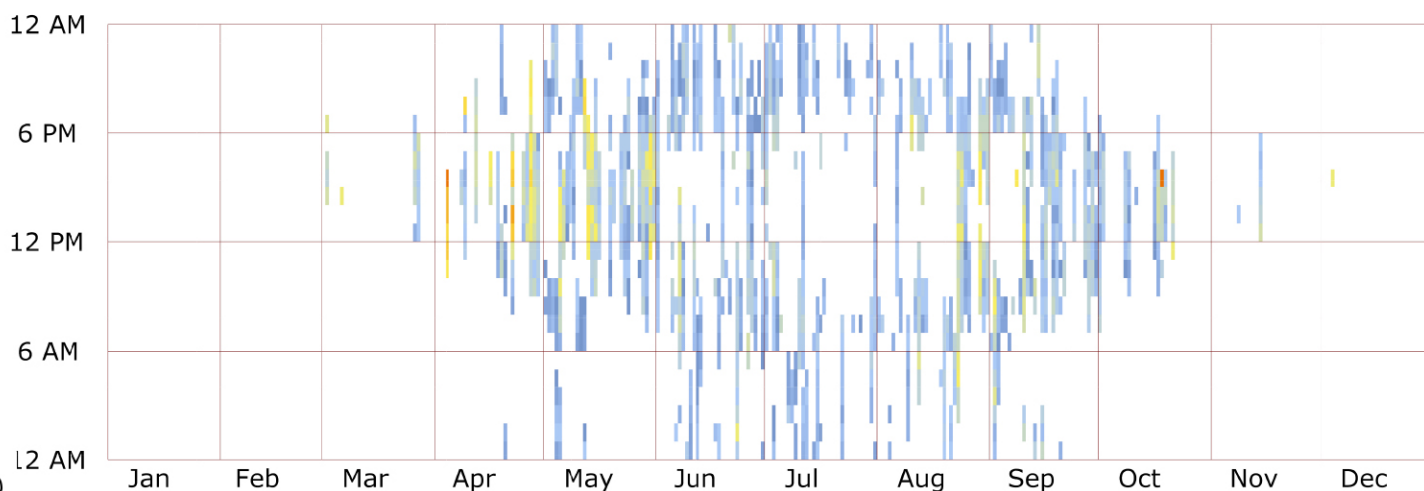
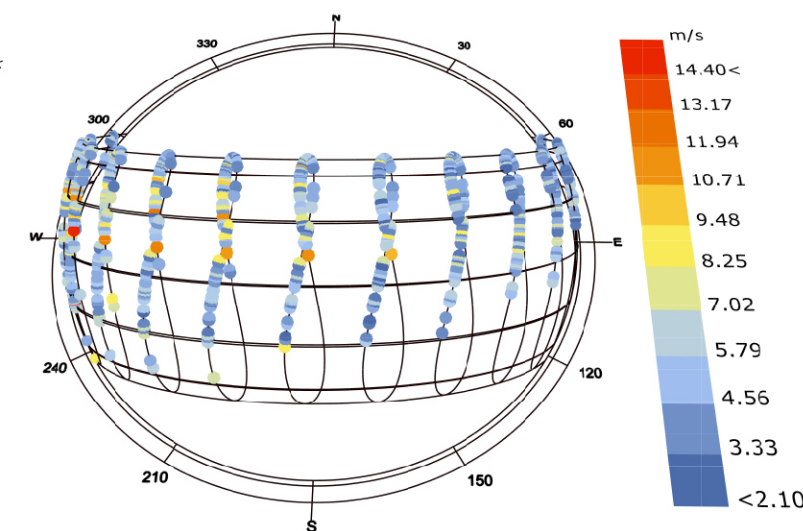
Dry Bulb Temperature (C) - Hourly
Philadelphia International Ap_PA_USA
1 JAN 1:00 - 31 DEC 24:00

Strategy 2: Due to the sun path position, openings in the south would receive direct sunlight but it is the rooms only aperture to outside so the window must be in the south. Again, the pattern of the comfortable times and sun positions to cover shows that some form of offsetted horizontal shading device may cover most of the direct sunlight.



Relative Humidity (%) - Hourly
Philadelphia International Ap_PA_USA
1 JAN 1:00 - 31 DEC 24:00

Strategy 3: The humidity is quite high during summer but adding proper wind change rate is making the place comfortable. Therefore, necessary wind passing system through opening would ensure comfort level most of the summer



Wind Speed (m/s) - Hourly
Philadelphia International Ap_PA_USA
1 JAN 1:00 - 31 DEC 24:00