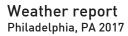
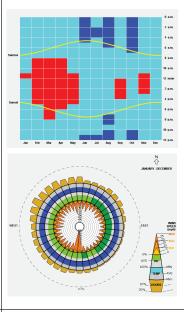
Assignment 01 September 1st. Jason Jongwon Lee



Wind Speed and Direction

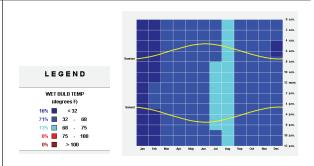
Temperature





Based on the anual data base, the prevalent wind speed of philadelphia during daytime is 10-20 mph while the night time, 3-5 mph is more prevalent. However, the air flow is obviously retaining its speed as 5-10 mph most of the time.

Regarding the wind direction, from South is the strongest with +25 mph annually.



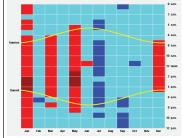
Courtesy of Wet Bulb temperature, 32-68 F is the most prevalent/common across the whole year. However, during July and August, it goes warmer to 68-75F average.

In winter time of December to February, the wet bulb temperature goes under 32F but get back to 32-68F in March.

Sky Cover

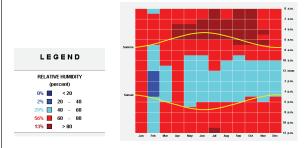
Relative Humidity





In Philadelphia, the sky is very likely to be covered on January, March, May, and December, whereas it is least likely to be covered on July and September.

Overall, philadelphia's sky is covered around 30-60 % in a year.



Phildalphia has 60-80 % of relative humidity in a year during the nighttime and 40-60 % during daytime. There is a sudden humidity absence in the middle of February.

Passive Design **Strategies**

Passive Heating/Cooling

Passive Ventilation

Daylighting

Using a well-insulated envelope of the building, it captures the internal heat gains.

In opposition, using stacked windows or nocturnal cooling allows passive cooling.

Introducing outdooor air into the indoor space with use of air temperature difference and air pressure difference through the spaces. Good space planning and openings to corridors will operate.

High ceilings and tall windows give depths of the space which allows natural lights diffused through a building's interior. (Clerestories operate too)