

# CLIMATE ANALYSIS

Philadelphia, Pennsylvania  
Climate Zone 4A  
Latitude: 39.87°

Occupied hours: 6pm - 8am

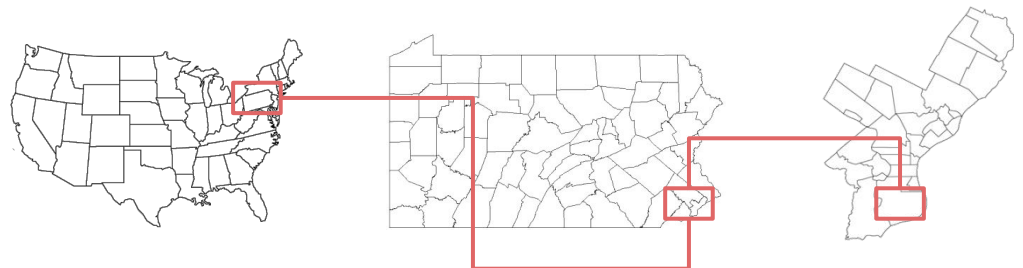
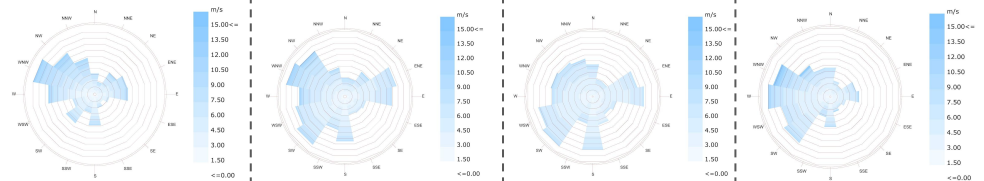
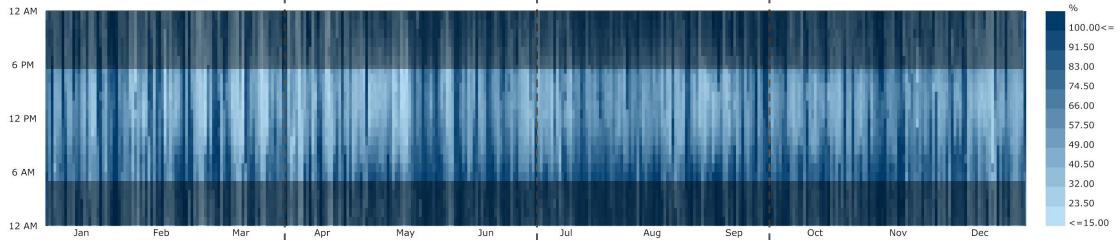
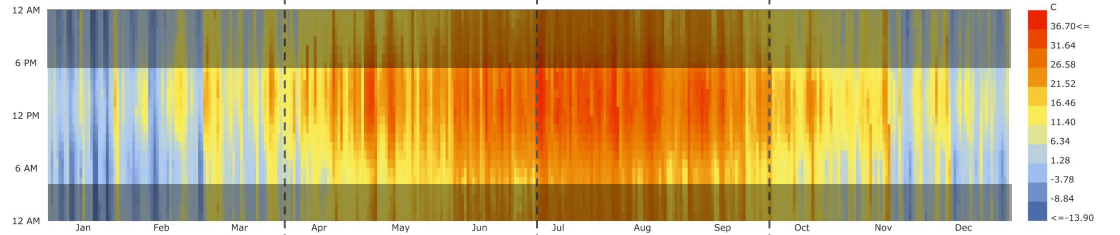
Air temperature in Philadelphia fluctuates between 5°C and 30°C, predominantly on the cold side (under 18°C).

The two basic techniques suggested to achieve comfort in this kind of weather are:

- Shading at an angle that covers windows during the summer, but exposes them during the winter.
- Smart insulation.

Humidity is relatively acceptable, which permits us to take advantage of natural ventilation for certain spaces. The unit's location and rotation relative to north is optimal for taking in the NW prevailing wind during the hotter part of the year.

Because of occupation times, it is suggested to utilize interior blinds in order to protect TV and working spaces from glare during the early morning.



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## UTCI Parameters

Comfortable hours: 3616 (41.28%)

Heating hours: 4618 (52.72%)

Cooling hours: 526 (6.00%)

UTCI accounts for temperature, wind speed, and humidity to calculate comfort. With this data, we can say that roughly half of the year is comfortable. Heating, however, must be taken into consideration for roughly the other half of the year. Cooling time is almost non-existent.

With this in mind, passive strategies for space heating through direct solar gain can and should be used throughout.

