

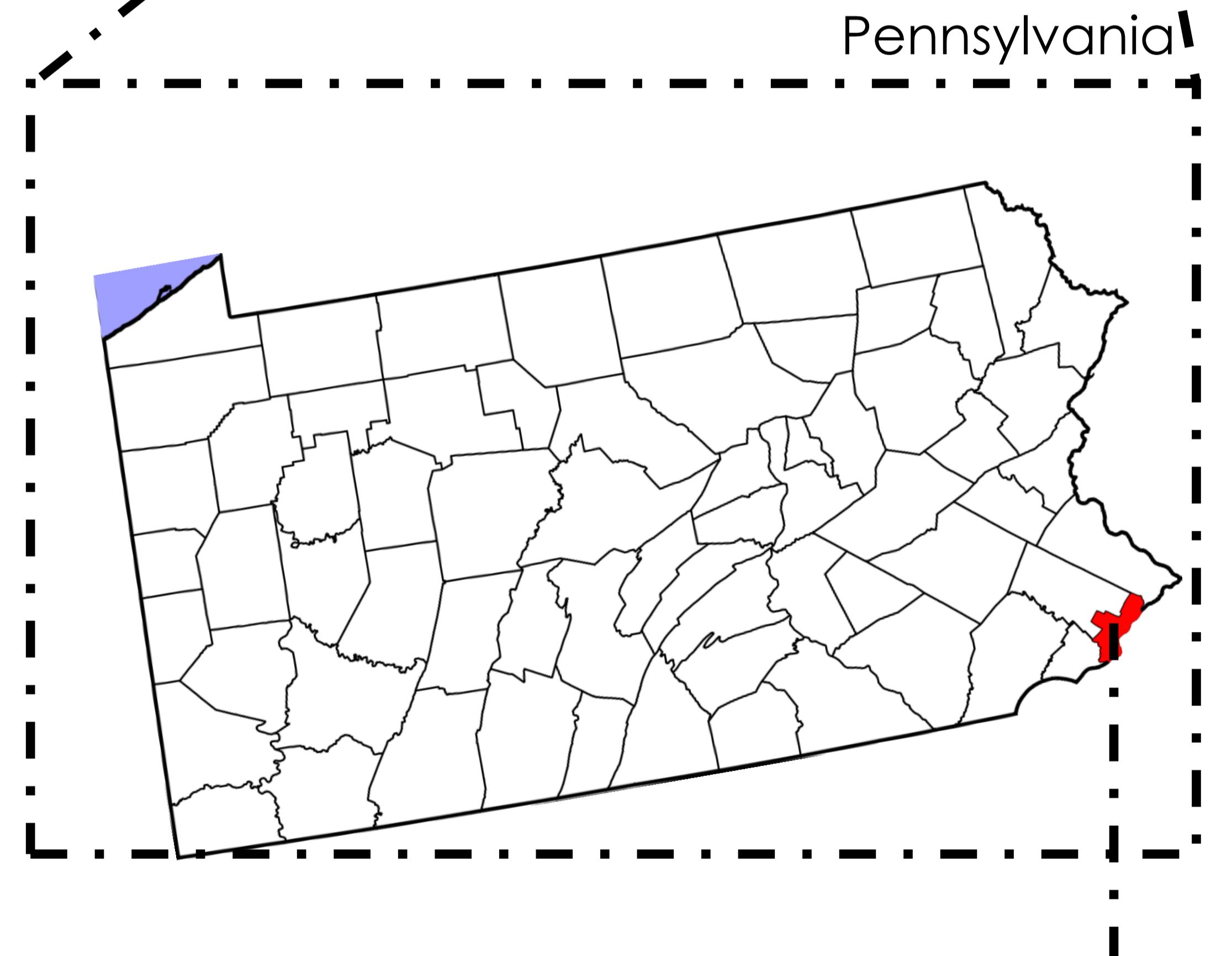
U.S.A.

Climate Analysis Report

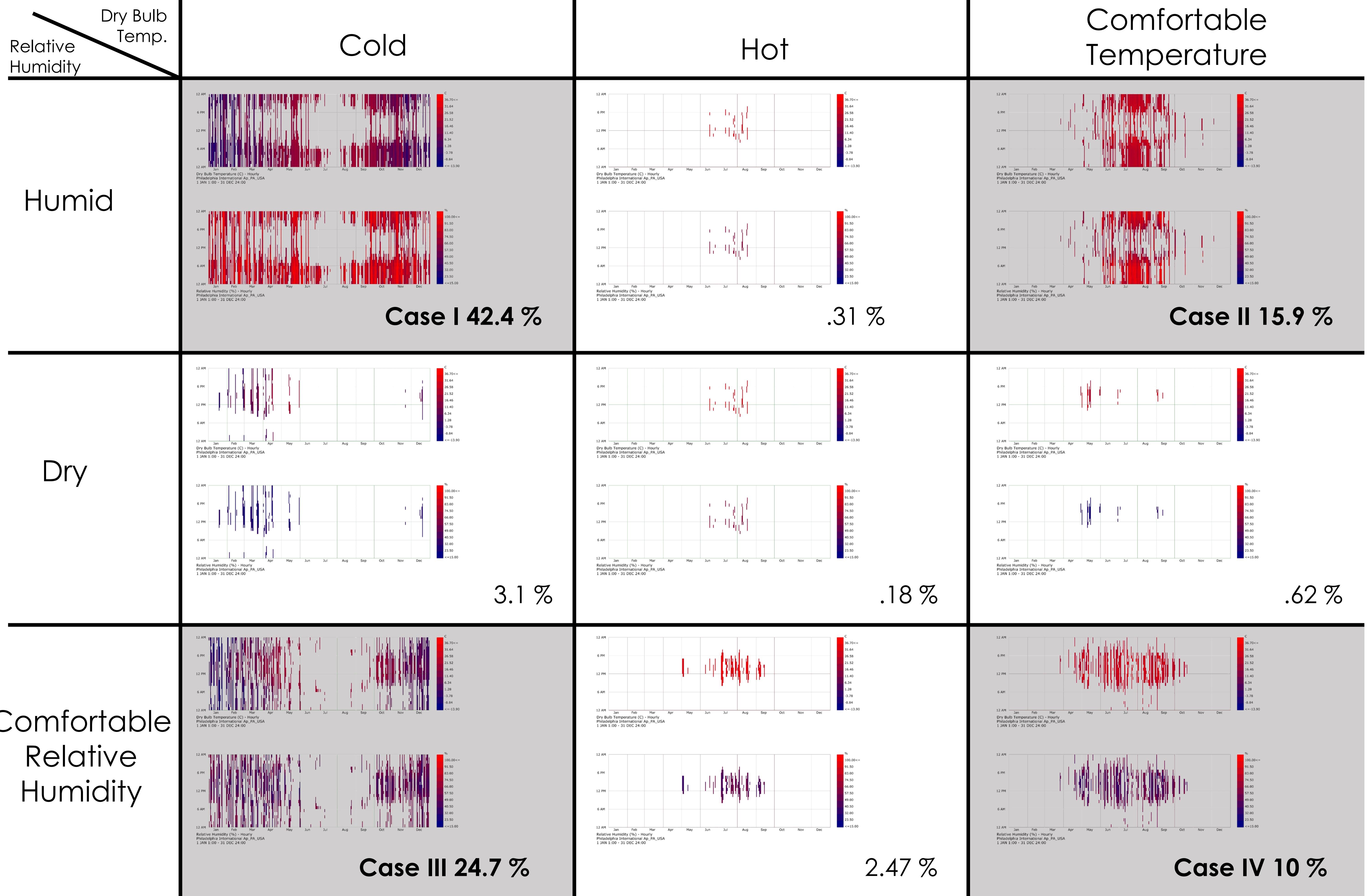
Building Performance Simulation

Guide :
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Submitted by :
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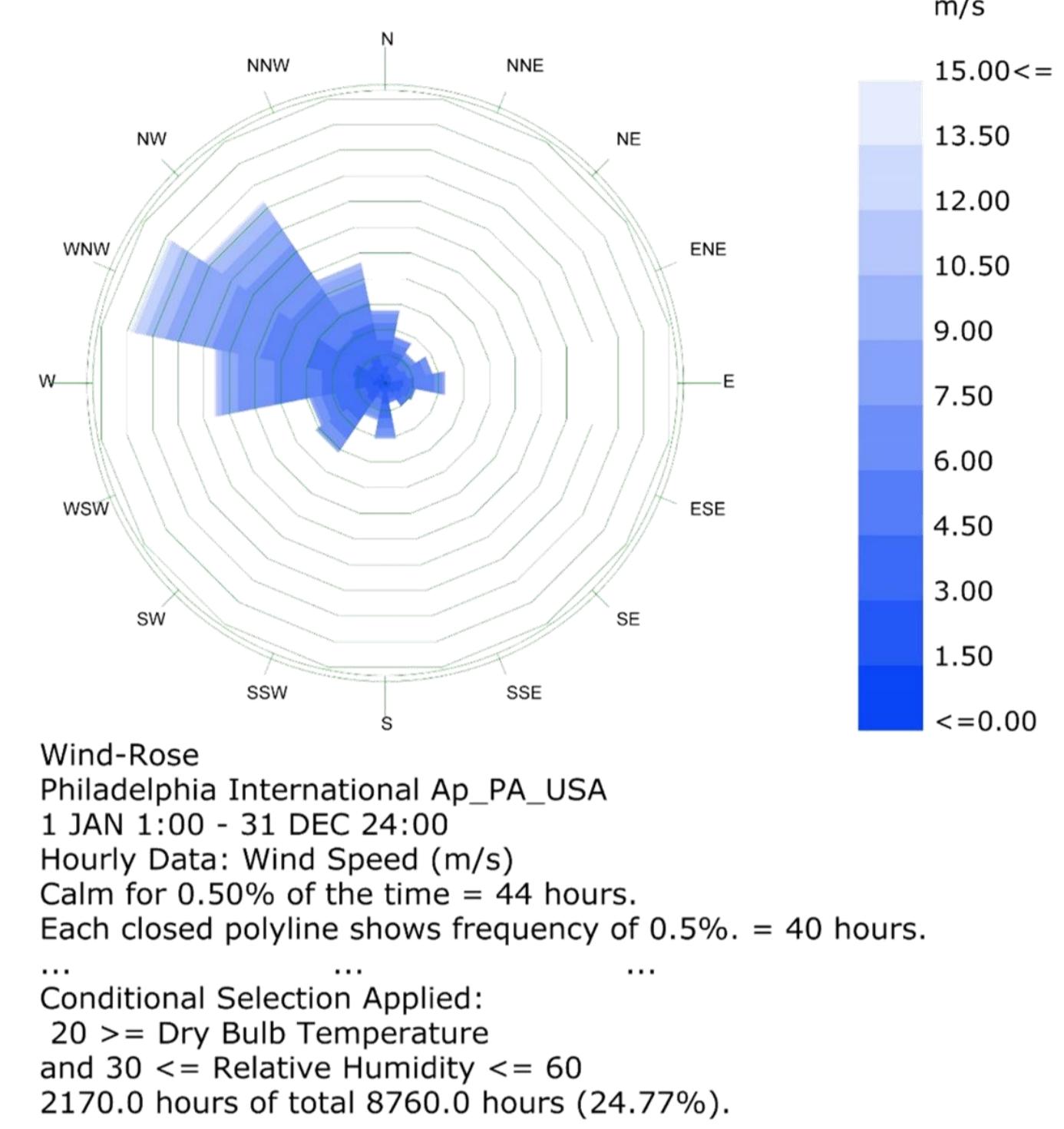
Philadelphia
39°57'N 75°10'W
Weather Station : Philadelphia International Airport
Data Source : TMY3



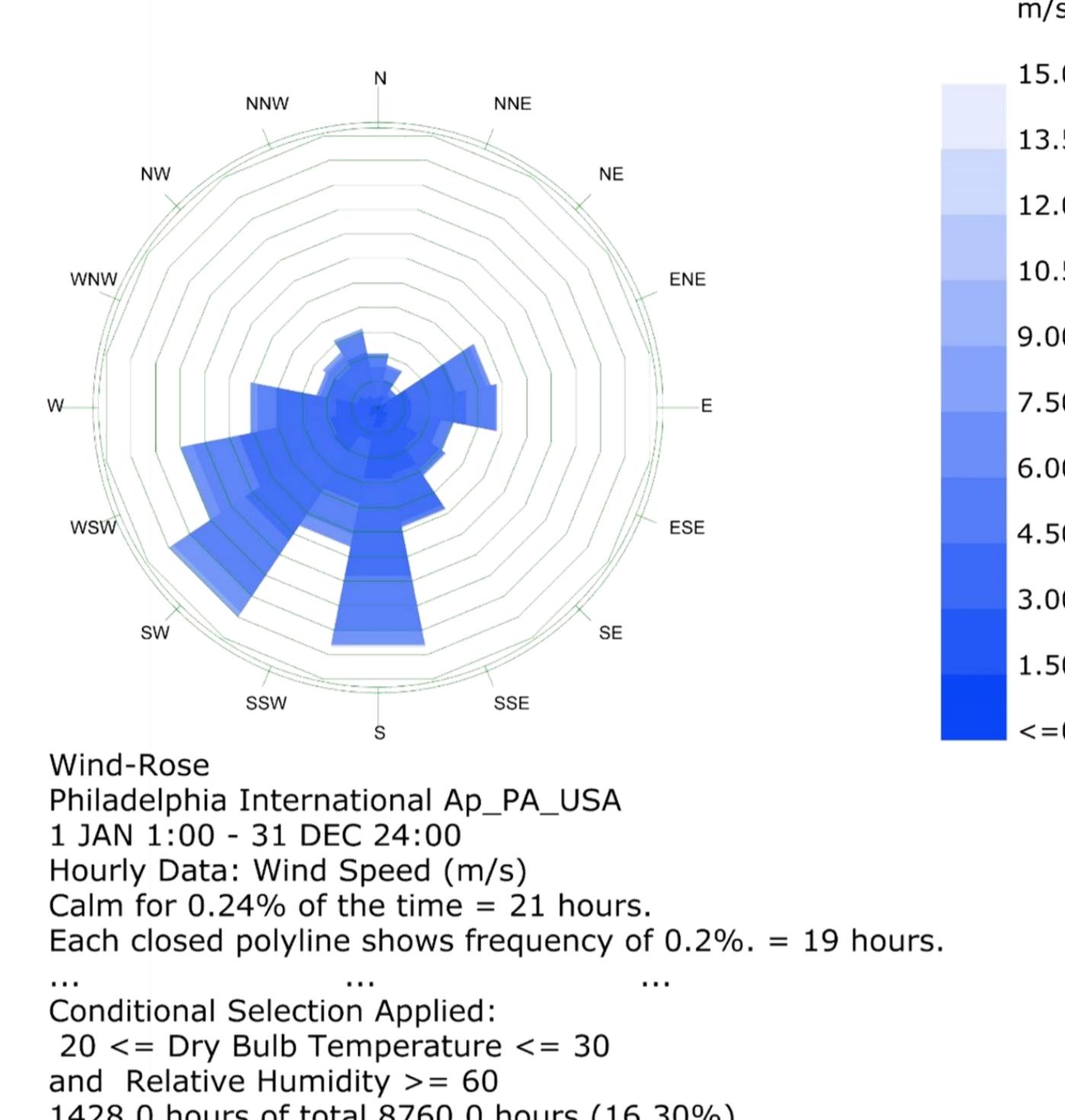
The above table suggests the dominant climatic condition in Philadelphia is Cold and Humid , therefore the design strategies would be governed by these.

Wind rose Diagrams

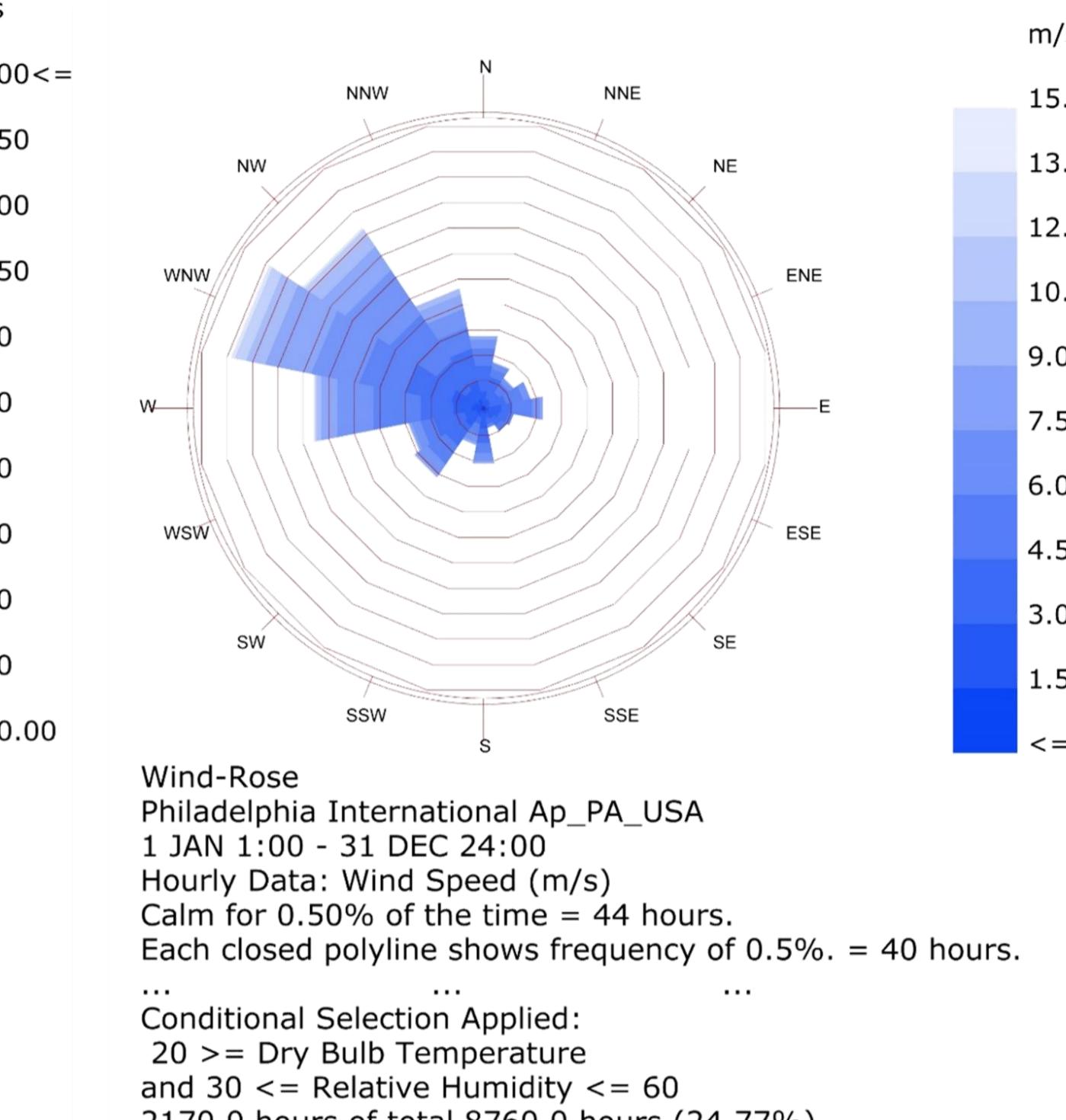
Case I 42.4 %



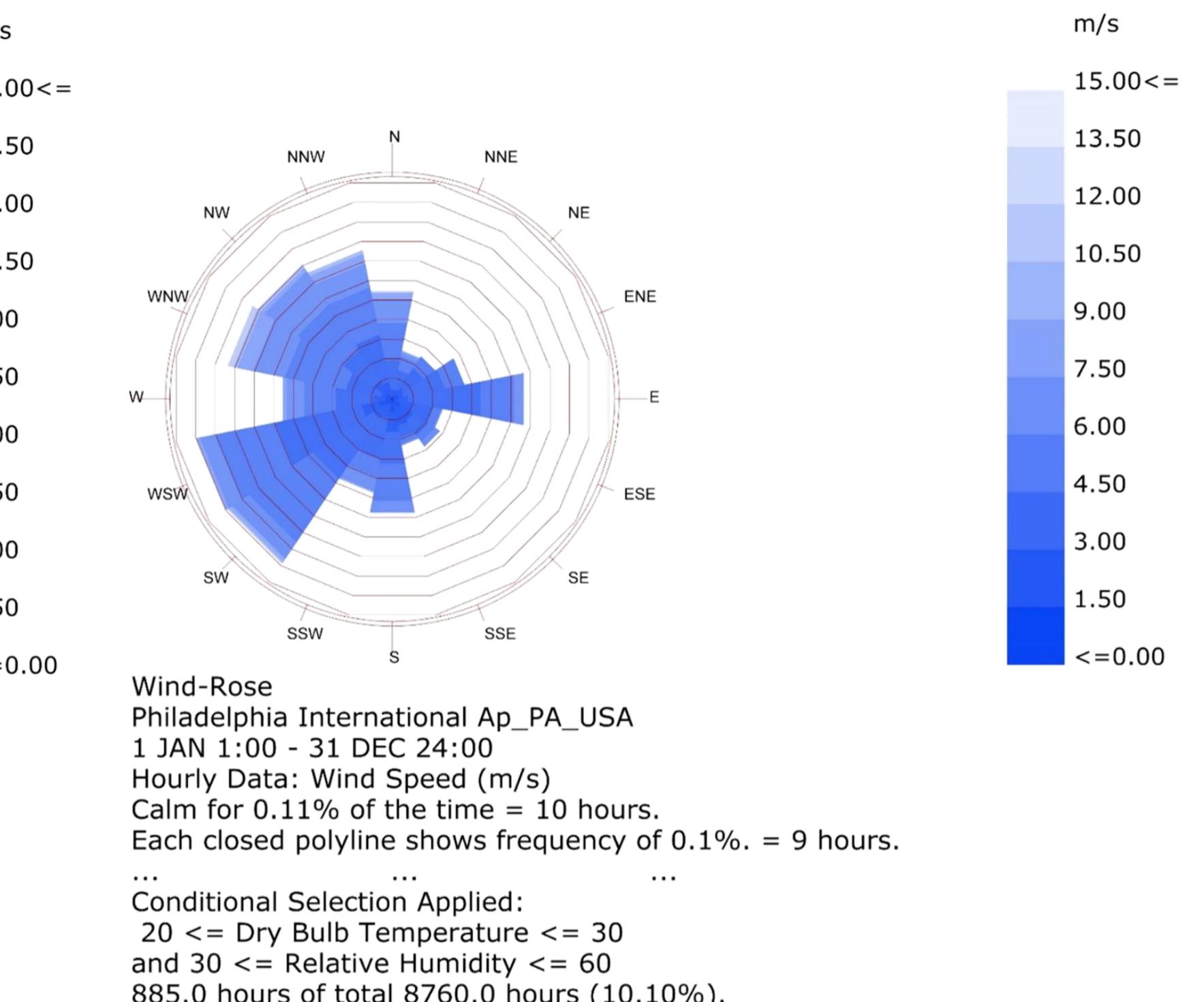
Case II 15.9 %



Case III 24.7 %



Case IV 10 %

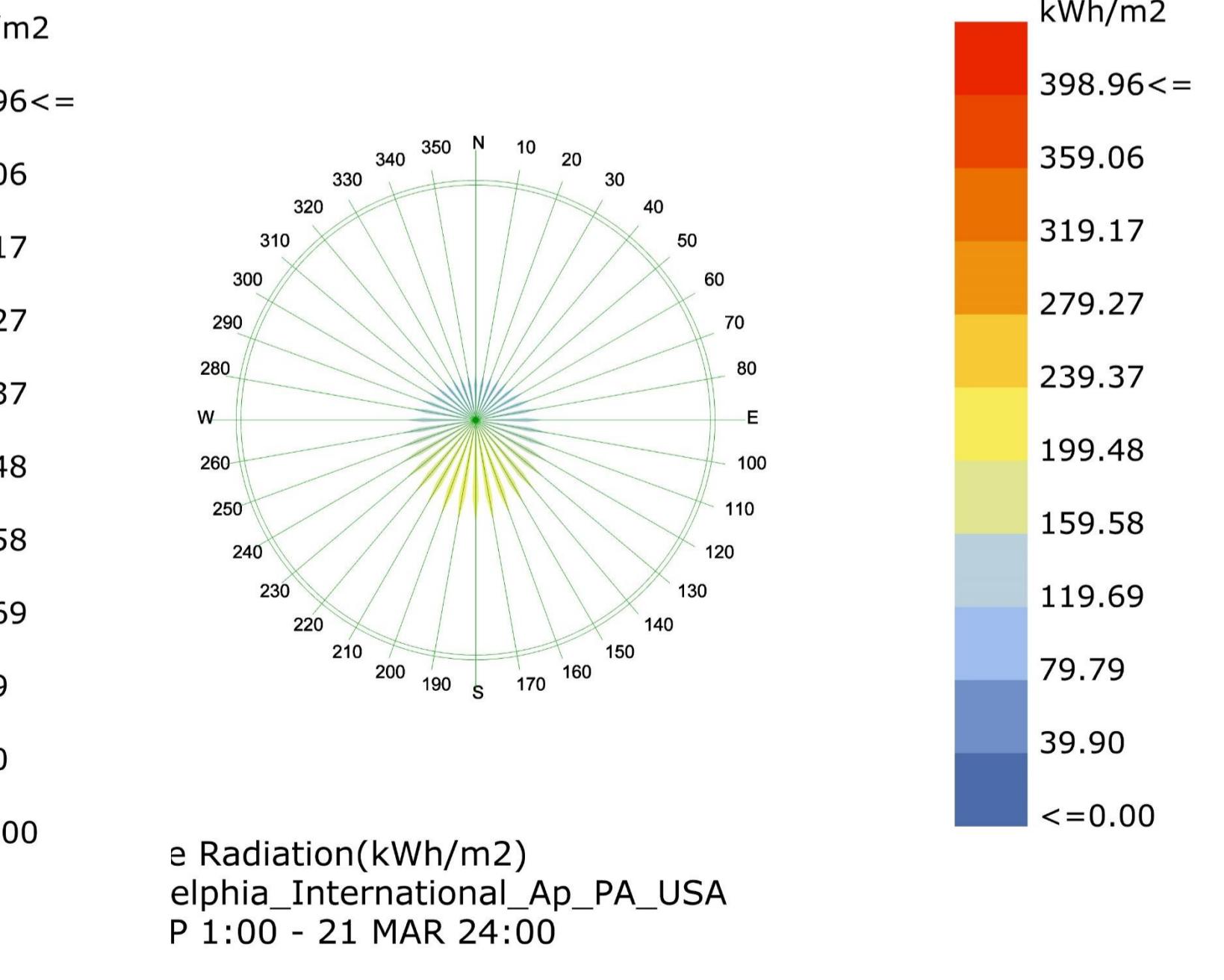
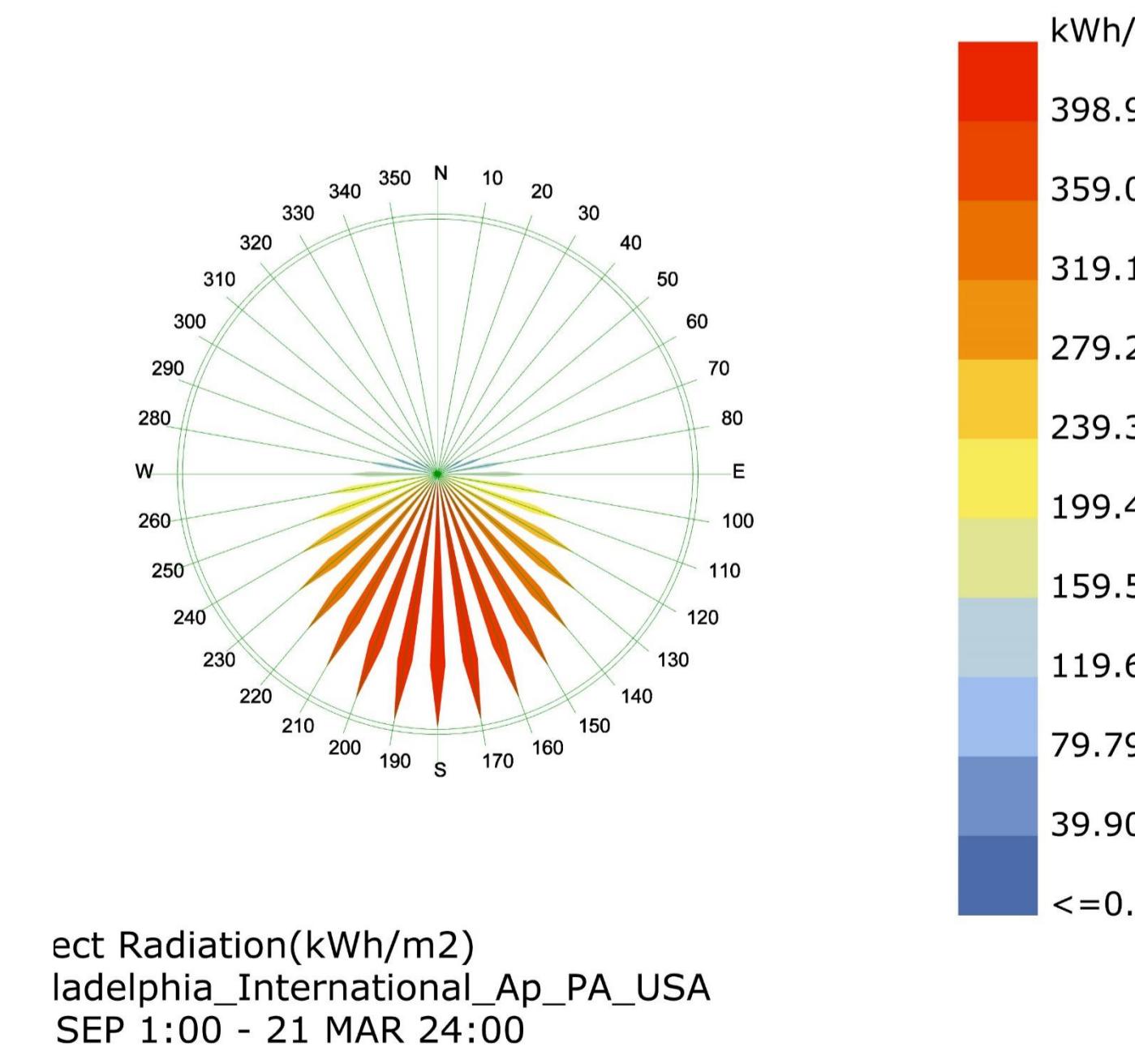
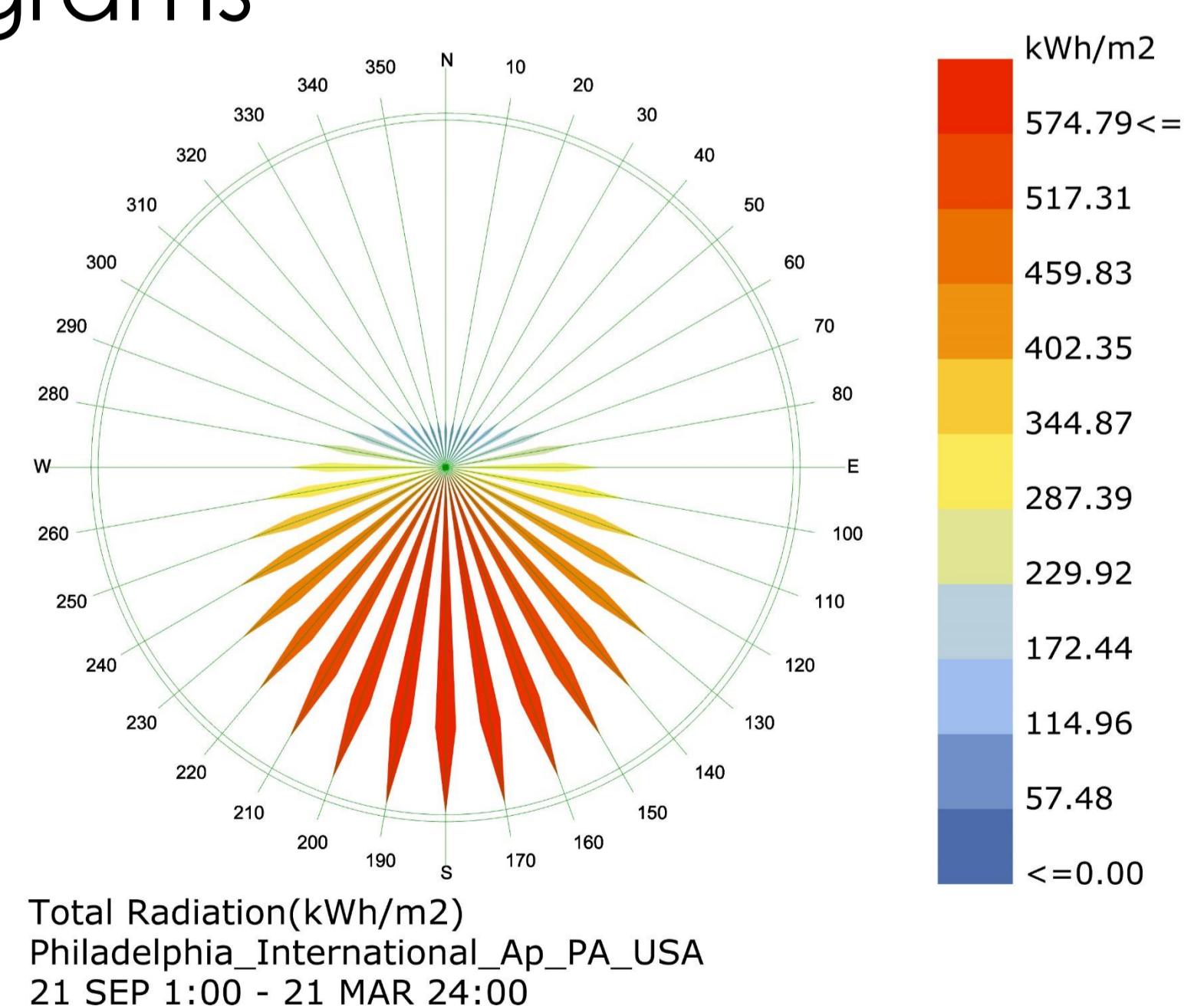


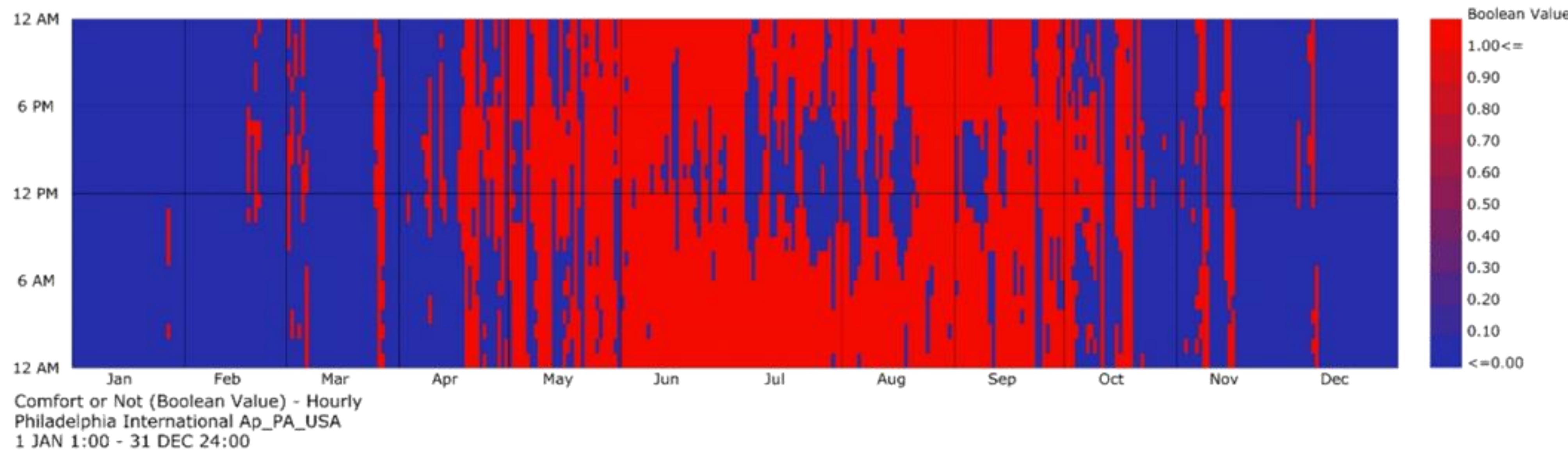
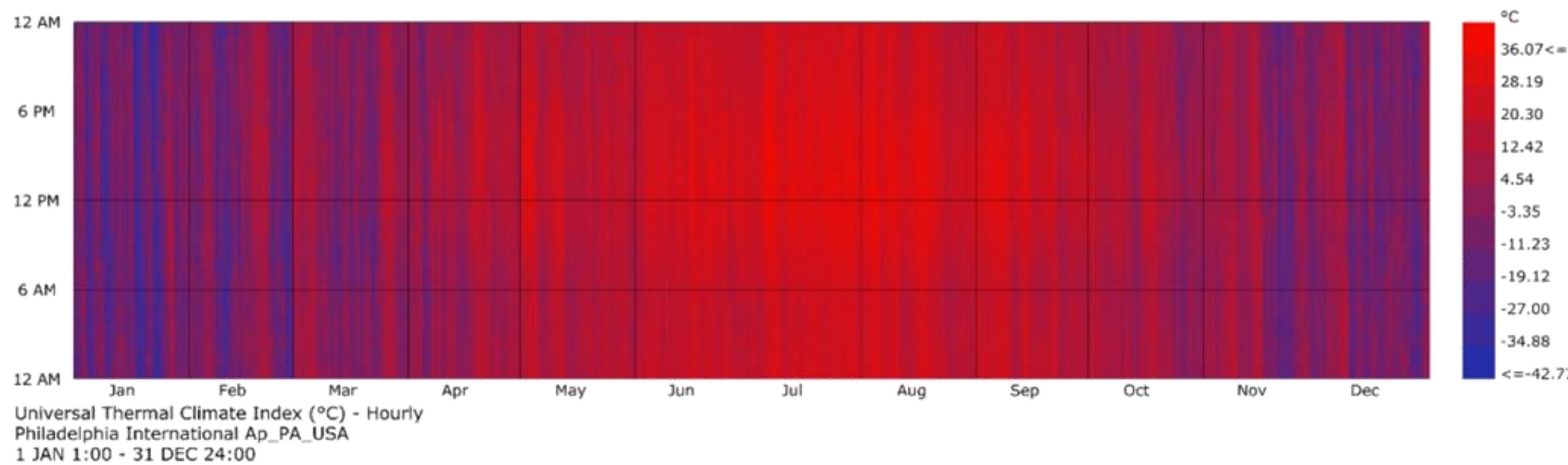
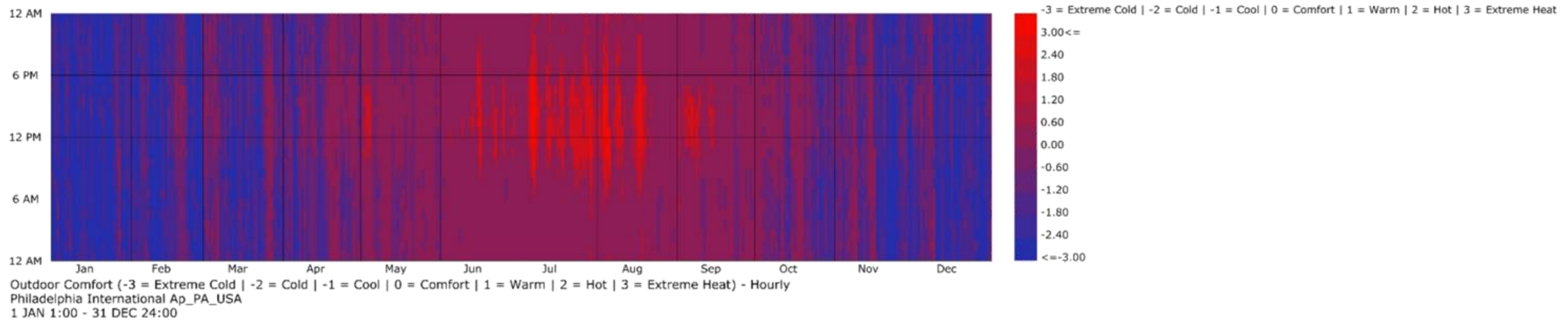
Radiation rose Diagrams

Case I 42.4 %

&

Case III 24.7 %





Strategy I

As seen in the table Philadelphia below comfortable temperature for 67% of the year the air temperature needs to be increased, a common strategy to do this passively is to incorporate solar heat gains with high thermal mass materials.

Orientation : South Facing Building

Strategy II

As seen in Case I and Case III the temperature is low, therefore wind to be blocked from Northwest Direction.

For Case II the temperature is comfortable but humidity is high, therefore natural ventilation to be enhanced from Southwest Direction.

When Humidity is too high it can be decreased with the use of desiccants.