## May 2026 ASHRAE Journal Online Content

On the following pages is supplementary information for the following article in the May 2026 issue of *ASHRAE Journal*:

# Improving Data Center Performance Through External Airflow CFD Analysis

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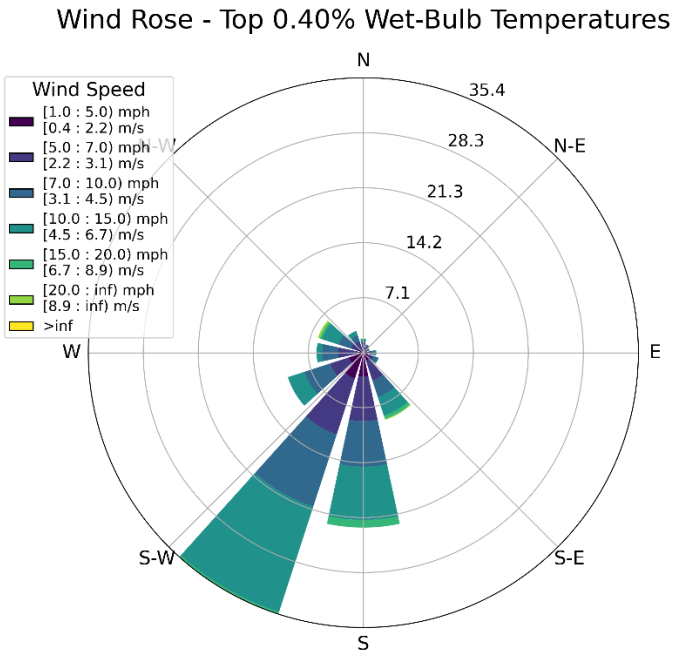
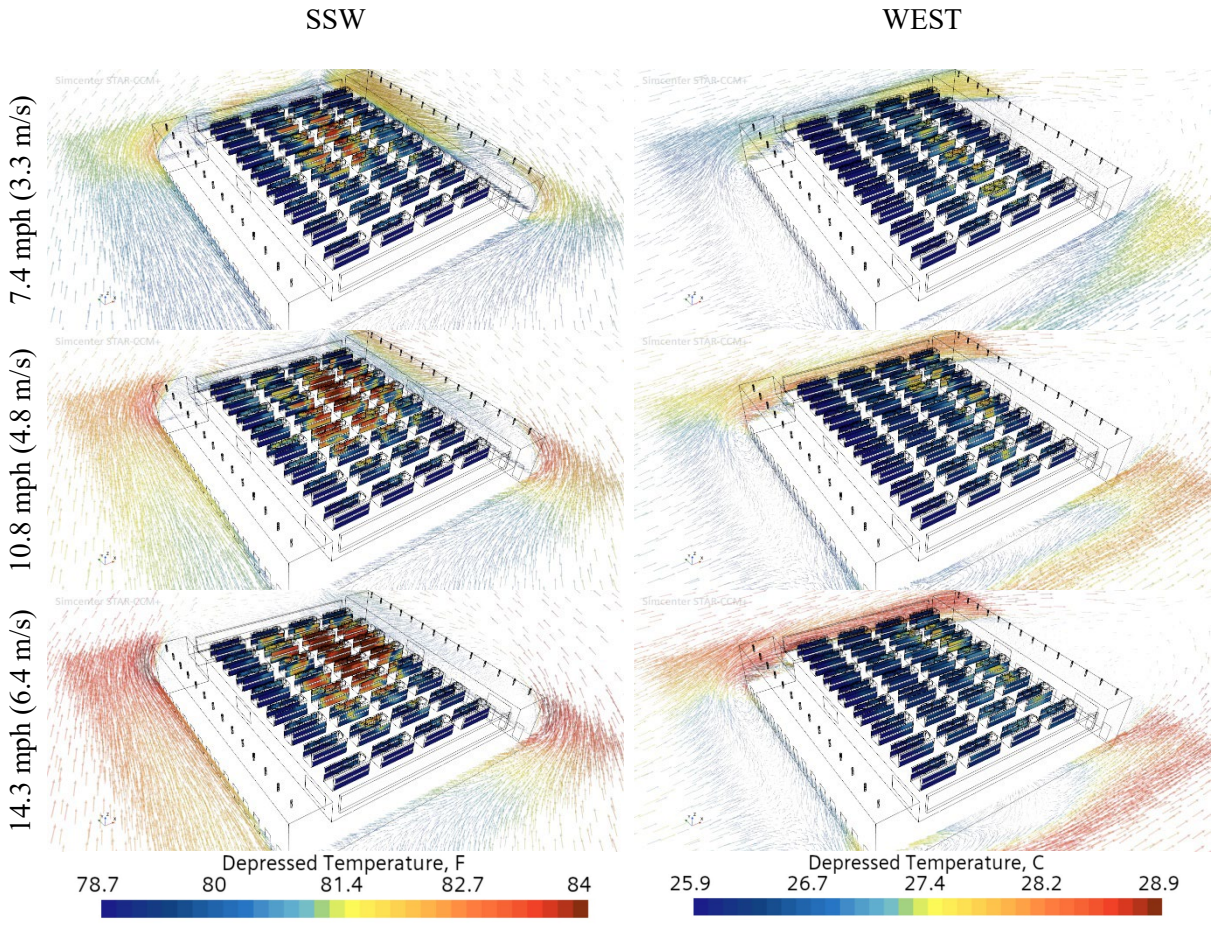



*Online Figure 1: Wind direction and speed distribution during the top 0.4% of wet-bulb temperature events. Calm conditions (<1 mph, 0.4 m/s) are excluded in both analyses.*

| | | |
|---|---|---|
| Air Flow Rate – cfm ($m^3/s$) | 535,398 | (253) |
| Cooling Capacity – MBH (KW) | 8530.3 | (2500) |
| Fan Heat Rejection – MBH (KW) | 305.3 | (89.5) |
| Total Heat Rejection – MBH (KW) | 8835.7 | (2589.5) |
| Redundancy Factor | 0.875 | |
| Adjusted Total Heat Rejection – MBH (KW) | 7731.2 | (2265.8) |
| Saturation Efficiency | 0.8 | |
| Design Approach (Leaving Fluid Temp - Depressed Temp) - ºF (ºC) | 13 | (7.5) |
| Design WBT - ºF (ºC) | 77.3 | (25.2) |
| Design MCDB - ºF (ºC) | 88.5 | (31.4) |

*Online Table 1 Adiabatic dry coolers' specifications*




*Online Figure 2 Depressed temperature for each unit under different wind speeds and directions.*

| | | |
|---|---|---|
| Power at Standby - ekW | 3250.0 | |
| Flue Flowrate – cfm ($m^3/s$) | 25451.0 | (12.0) |
| Flue Temperature - °F (°C) | 920.0 | (493.3) |
| Combustion Air Requirement – cfm ($m^3/s$) | 9571.5 | (4.5) |
| Radiator Air Flowrate – cfm ($m^3/s$) | 116397.0 | (54.9) |
| Heat Rejection – MBH (KW) | 8025.4 | (2352.0) |

*Online Table 2 Summary of Generator Performance*