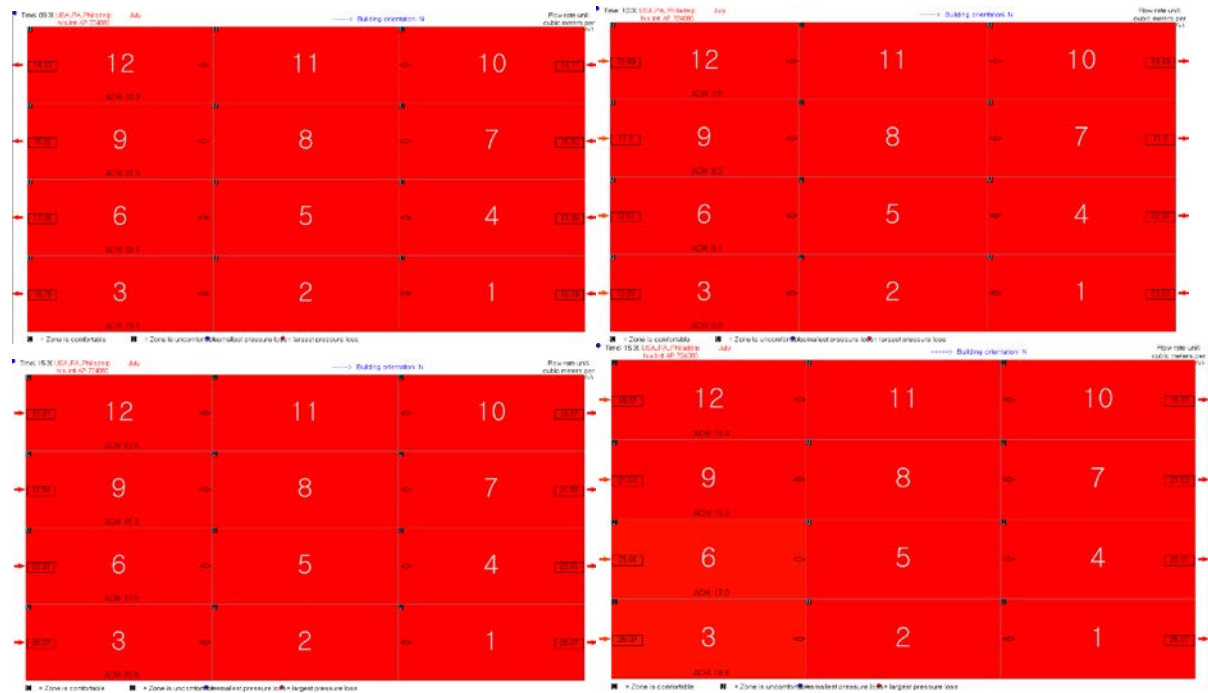


# Meyerson Hall Natural Ventilation Study

Tae Hyung Lee

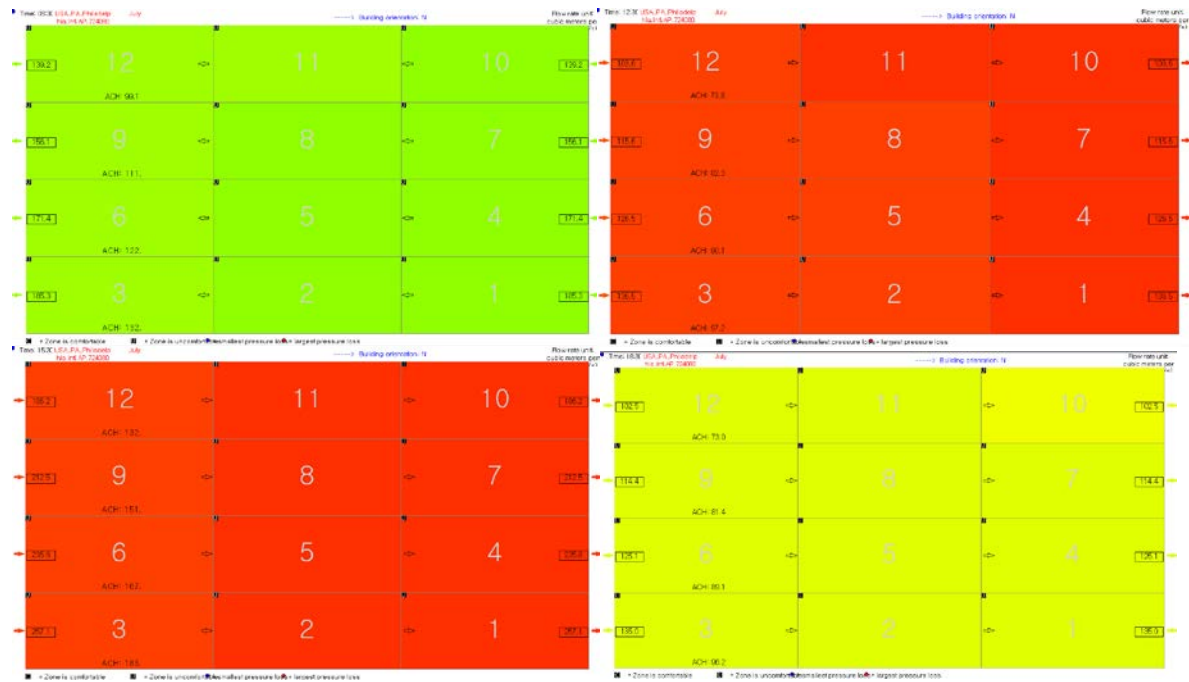
Original State



Thermal Comfort Graph 9:30 to 18:30 (Red:30°C Blue:20°C)

Set as cross ventilation with minimal opening

## Strategy 1. Cross Ventilation



Thermal Comfort Graph 9:30 to 18:30 (Red:30°C Blue:20°C)

Cross Ventilation with 96.2m<sup>2</sup> opening

Result:

The building is thermally discomfort mostly because humidity is too high.

The temperature of the building does not exceed 30°C.

Figure 10 displays four diagrams illustrating the effect of different pressure loss coefficients (K) on the pressure distribution in a building's heating system. The diagrams are arranged in a 2x2 grid, showing the pressure distribution across a 4x4 grid of rooms (labeled 1 to 16) for different K values: 0.05, 0.1, 0.2, and 0.3. The diagrams are color-coded: green for K=0.05, red for K=0.1, orange for K=0.2, and yellow for K=0.3. The diagrams show the pressure distribution (Pa) and the Air Changes per Hour (ACH) for each room. The pressure values are shown in red boxes, and the ACH values are shown in green boxes. The diagrams are labeled with 'Time: 12:00:00' and 'Pressure: 100.000 Pa'.

**Top-Left Diagram (K=0.05):** Pressure distribution is relatively uniform. Pressure values range from 118.8 to 119.2 Pa. ACH values range from 84.6 to 100.0.

**Top-Right Diagram (K=0.1):** Pressure distribution is more varied. Pressure values range from 122.5 to 124.0 Pa. ACH values range from 87.2 to 100.0.

**Bottom-Left Diagram (K=0.2):** Pressure distribution is highly varied. Pressure values range from 174.3 to 174.8 Pa. ACH values range from 124.0 to 124.4.

**Bottom-Right Diagram (K=0.3):** Pressure distribution is highly varied. Pressure values range from 121.6 to 122.0 Pa. ACH values range from 86.6 to 106.8.

Central Atrium with 96.2m<sup>2</sup> opening

The building is thermally discomfort mostly because humidity is too high.

The temperature of the building does not exceed 30°C.