Adaptable U-value Façade

Driving Force

\[ U = 0.1456(0 + 0.2545) \times \ln(\text{abs} \theta) + 0.3718 \times \ln(b) + 3.2757 \] (0.031\% chance of venting 1.5m, when \( a = 5 \) and \( b = 100 \))

U-value can reach 4W/m²K, when the vent is completely open and the temperature difference is 5 degrees.

Improvement in Thermal Comfort

To: Ratio \( \Psi = 1.78 \)

Energy

\[ U = 0.74 \text{ W/m²K} \]

\[ U = 4.2 \text{ W/m²K} \]

Energy saved: 128MJ/yr

Cake

Solutions of Sunshade System

- Solutions of Thermal Mass

\[ T_{in} = 10°C \]

\[ T_{in} = 22°C \]

\[ T_{in} = 10°C \]

\[ T_{in} = 22°C \]

Radiation Risk

50% of the cavity 30%

No condensation risk

Relative humidity of the cavity 30%

Thermal Comfort & Energy

Simulant Output

Explored Rendering of Assembly