

By developing a theoretical model of the ventilated photovoltaic curtain wall system and conducting numerical simulations, this study analyzes the variation patterns of the power generation...

Solar curtain walls harness solar radiation efficiently, generating electricity that can either be used in the building or fed back into the grid. This capability significantly lowers a building's overall ...

This study introduces a novel simulation-based methodology--centered on a driver-perspective reverse ray-tracing approach--to identify locations in the urban fabric vulnerable to ...

In this paper, the distribution of solar radiation in the room throughout the year is analysed to clarify the depth of solar radiation in the room and the influence range on the indoor radiant thermal environment.

Photovoltaic (PV) curtain walls make this possible by combining solar energy harvesting with architectural design. But here's the catch: higher light transmittance reduces energy output, while ...

In this scenario, adaptive fa&#231;ades are becoming increasingly popular because they should provide controllable insulation and thermal mass, daylighting, solar shading, ventilation and ...

This paper establishes a natural convection model of the photovoltaic curtain walls, solved using the finite element method, focusing on the impact of geometric parameters on flow and ...

Energy efficiency and the reduction of carbon emissions have become the main climate goals for newly constructed or existing buildings. In the building sector, curtain walls (CWs) account ...

To promote the use of photovoltaic double-glazed curtain walls, this paper studied the factors affecting photovoltaic power generation efficiency, leading to satisfactory results.

By incorporating factors like tilt angle, ventilation spacing, and glass transmittance, researchers have developed optimized design strategies for photovoltaic double-skin glass curtain walls, which ...

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