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Which is better curtain wall design or solar design

Overview

The current paper presents a study of the effect of equatorial-facing façade design on energy performance of multi-story buildings. Façade surfaces are assumed to be in the form of curtain walls, allowi.

How can a curtain wall system increase solar power in tall buildings?

Increasing electrical generation and solar potential of tall buildings can therefore be attained by manipulation of the geometry and other design features of the facades, subject to visual and functional constraints, such as window design and positioning. A curtain wall system represents an efficient way to integrate photovoltaic modules.

Why do PV curtain walls have a poor visual effect?

Traditional PV curtain wall with standard square-shaped solar cells usually results in a poor visual effect due to the obvious contrast between the opaque silicon solar cells and the transparent glass .

What are the advantages of photovoltaic curtain wall?

Photovoltaic curtain wall may offeradvantages including reducing temperature rise of wall surface and consequently the heat-exchange between outdoor and indoor , offering sun-shading by utilizing semi-transparent photovoltaic panels, and can be utilised for aesthetic effects.

Do semi-transparent photovoltaic curtain walls improve thermal performance?

Semi-transparent photovoltaic (STPV) curtain walls play a crucial role in building decarbonization. Nonetheless, Previous studies mainly concentrated on improving the electrical, daylighting and thermal performance of STPV curtain walls separately, ignoring the interdependencies among these performance factors.

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