

A-Core Container

Solar supporting curtain wall solution



Overview

Do VPV curtain walls save energy?

According to the literature review, VPV curtain walls exhibit significant potential for energy savings owing to their excellent thermal insulation performance . Furthermore, the shading effect of PV cells can alleviate discomfort glare and enhance occupants' visual comfort .

What is a VPV curtain wall?

The VPV curtain wall consists of a piece of CdTe-based PV laminate glass, an air cavity, and a sheet of vacuum glazing. The solar cells are etched into strips by lasers, and the transmittance of the VPV sample can be adjusted by changing the arrangement density of the strip solar cells.

Are vacuum integrated photovoltaic curtain walls performance-driven?

The vacuum integrated photovoltaic (VPV) curtain wall has garnered widespread attention from scholars owing to its remarkable thermal insulation performance and power generation ability. However, there is a lack of in-depth, performance-driven optimal design that considers the mutually constraining functions of the VPV curtain wall.

Does partitioned VPV curtain wall work?

The results indicated that the partitioned VPV curtain wall with 50%, 40%, and 90% PV coverages of daylight, view, and spandrel sections results in 82.8% useful daylight index, 62.7% hourly net-zero energy ratio, and 150.66 kWh surplus electricity.

Are VPV curtain walls mutually constraining?

However, there is a lack of in-depth, performance-driven optimal design that considers the mutually constraining functions of the VPV curtain wall. To address this issue, this study proposed a multi-function partitioned design method for VPV curtain walls aimed at reconciling the competing demand of

different functions.

Does a curtain wall provide enough daylight?

The sufficient daylight provided by the external curtain wall has been shown to enhance the physiological and psychological well-being of occupants [2, 3], and increase their satisfaction and productivity [4, 5].

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