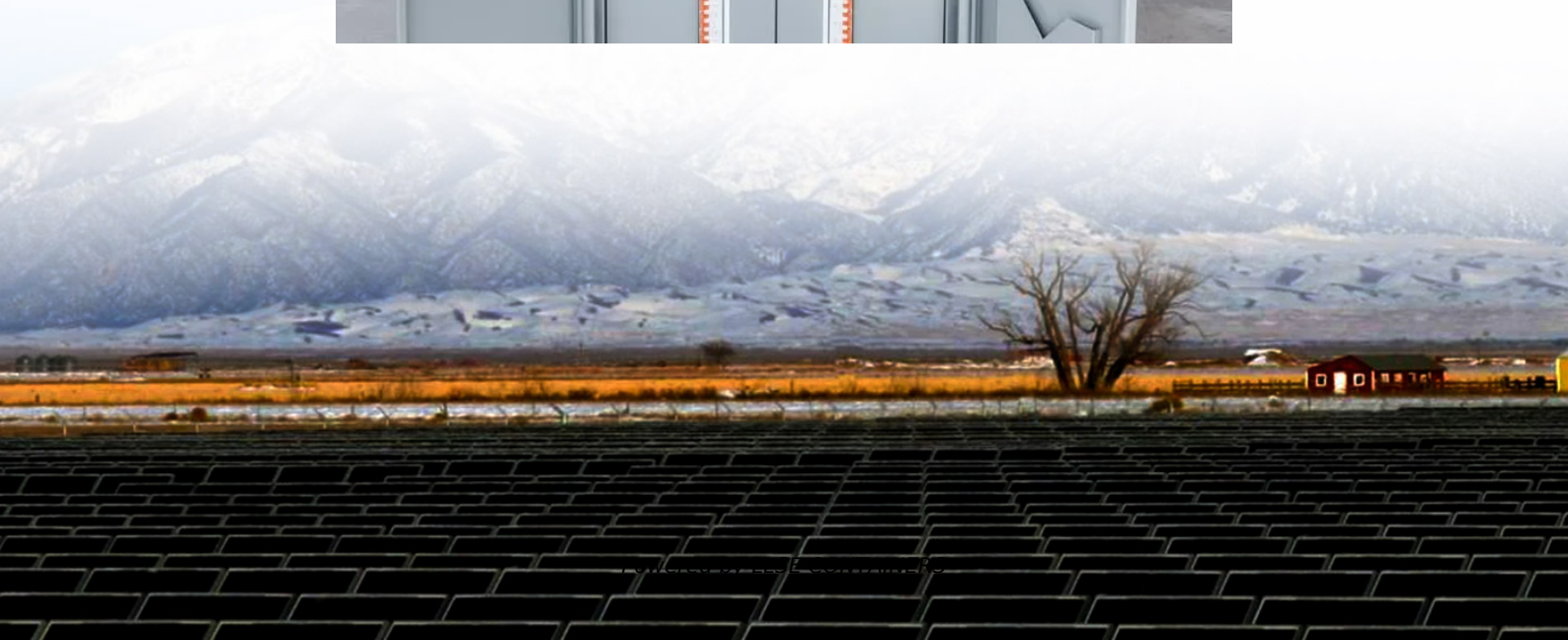


# Solar curtain wall ventilation





## Overview

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Building integrated photovoltaic (BIPV) and air source heat pump (ASHP) technologies have emerged as promising solutions for building energy conservation. However, traditional solar building.

Can PV curtain wall systems reduce overheating and save energy?

To address overheating and save energy in air conditioning, this study proposed novel single- and dual-inlet ventilation PV curtain wall systems (SVPV and DVPV). In summer, the building exhaust is introduced into the channel to strengthen PV cooling, while incoming fresh air is used to preheat dew-point air.

How does a single-inlet ventilated PV curtain wall system work?

This section describes the operation of the single-inlet ventilated PV curtain wall system using a novel HR technique for fresh and supply air handling (SVPV), along with the dual-inlet one (DVPV), taking the conventional non-ventilated one without HR (NVPV) as a reference system.

Do exhaust-air-based PV curtain wall systems work in summer and winter?

Therefore, this paper proposed two types of exhaust-air-based PV curtain wall systems that use a novel heat recovery (HR) technique in summer and couple with fresh air handling in winter. One system features a single air inlet, while the other has double inlets.

What is a ventilated curtain wall?

In the ventilated curtain wall, the air inlet is situated at the bottom of the internal glazing, while the exhaust ducts are connected to the channel outlet and concealed within the ceiling. This configuration ensures both effective ventilation and preservation of aesthetics.



## Solar curtain wall ventilation

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### **Single**

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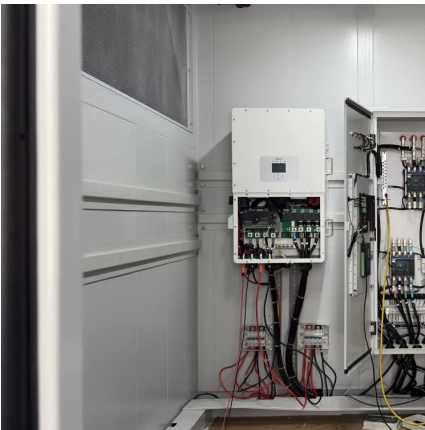
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Abstract. Heating load in Commercial buildings is highly related with ventilation systems, while at the same time local discomfort in the vicinity of glass walls occurs due to overheating. In this ...

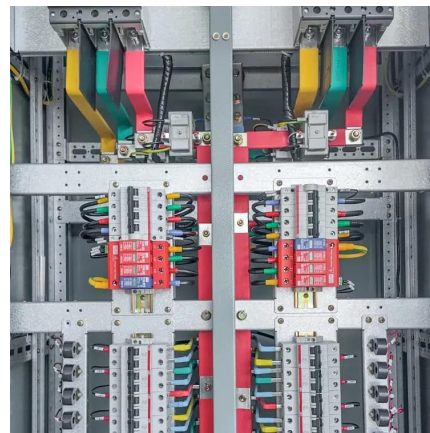


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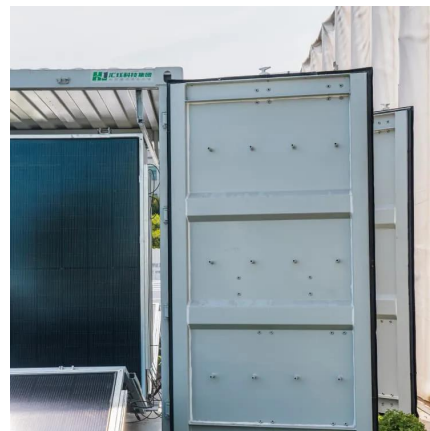


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