

Nature of trombe energy storage group

How much energy is stored in a Trombe wall?

Although 60% of energy losses were observed as expected of trombe walls in cold climates, it provided enough thermal gain to maintain room temperature to comfortable levels by venting heated air at 35 °C. Maximal energy stored in the wall was found to be 109 MJ.

What is a Trombe wall?

A Trombe wall, which is also known as a thermal storage wall and solar heating wall, reduces a building's energy consumption by up to 30% and provides thermal comfort in winter and intermediate seasons. A Trombe wall is an important green architectural feature that aids the ventilation, heating and cooling of buildings.

What are the energy efficiencies of Trombe walls?

The energy efficiencies of the two types of Trombe walls are relatively high, but exergy efficiency is very low. The exergy destruction due to absorption of the absorber plate is the largest. The increase in the temperature of the absorber plate is an effective method to decrease exergy destruction and increase energy and exergy efficiencies.

Why should you invest in a Trombe wall & solar thermal system?

With Melbourne's copious sunlight, the combination of Trombe walls and solar thermal technologies not only reduces greenhouse gas emissions but also lowers utility costs, making it economically beneficial for the occupants.

How did the Trombe wall reduce energy consumption?

According to the results of the technical and economic calculation, under the Gwalior climatic conditions, the Trombe wall reduced energy consumption by 134.5 kWh/m² per year, and CO₂ emissions by 145 kg/m² per year. Since the construction of the Trombe wall was very simple, its payback period was only 7 months.

What is a photovoltaic Trombe wall?

A photovoltaic trombe wall This Trombe wall type has photovoltaic modules that are located in the air gap or on a massive wall (Fig. 6). Such a wall design allows the conversion of solar radiation into electricity and thermal energy [44,45]. Fig. 6. Scheme a photovoltaic Trombe wall.

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