

China's multi-storey residential solar energy saving requirements

Why is building energy consumption a problem in China?

There are many ways to realize the energy supply of the building itself. Therefore, as far as the current situation of excessive building energy consumption in contemporary China is concerned, it is due to the imbalance between building energy creation and building energy consumption.

How efficient is China's solar energy production?

With regard to technology research and development, the latest photoelectric conversion efficiency of China's mass production of silicon solar cell has reached more than 25%, which is the world's leading level (Chen et al. 2022). Figure 3. Global top 10 solar PV markets, 2021-2022 (source: author drawing based on solar power Europe 2023).

What are the types of multi-family residential buildings in China?

In China, multi-family residential buildings can be mainly divided into low-rise (1-3 storeys), multi-storey (4-6 storeys), mid-rise (7-9 storeys) and high-rise (>10 storeys) buildings (Uniform standard for design of civil buildings (GB 50352-2019), 2019).

Can photovoltaic building integration work in China?

Thirdly, a variety of photovoltaic building integration modules are used, with a total solar power generation power of about 400 KWp, making it a benchmark project for photovoltaic building integration in China, as shown in Table 10.

Does China have a rural residential photovoltaic system?

China's rural residential photovoltaic system has been greatly developed in recent years. However, most existing researches, are difficult to reflect the real development situation of the whole system.

How to save energy in multi-story residential buildings in Guangzhou City?

These results indicate that energy savings of multi-story residential buildings in Guangzhou city shall be focused on five critical factors: F1--cooling (Electricity), F2--zone sensible cooling, F3--room electricity, F4--computer + equip, and F6--zone sensible heating.

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Energy efficient solutions for retrofitting a residential multi-storey building with vacuum insulation panels and low-E windows in two European climates ... including the DB HE ...

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Solar chimney applications in multi-storey buildings: A critical review. Multi-storey solar chimneys significantly improve building ventilation with remarkable energy efficiency, adaptability and ...

Hughes and Wood: Solar energy and multi-storey residential buildings 1 Summary This report considers the limitations on solar energy in new, multi-storey residential ...

In general, the application of passive photovoltaic technology in China's rural residential building has lower cost, stronger targeted and better effect, and it is an indispensable part to realize the green ecology of rural ...

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To save energy and commit to the environmental protection and sustainable ...

In the Chinese climate, combined solar chimneys can reduce annual ...

To save energy and commit to the environmental protection and sustainable development of green ecological buildings, how to integrate solar energy systems with the ...

3. Multi storey residential developments and energy efficiency For the purposes of both the study and this paper, medium density is defined as two to three storey developments and typically ...

PDF | On Jan 3, 2016, Barbara SIMONS and others published Practical Energy Saving Techniques For Multi-Storey Office Buildings In Accra, Ghana | Find, read and cite all the ...

Built upon their findings, an appropriate method, a combination of simulation models, Pareto analysis, and assessment index, is selected to analyze green technology's ...

Purpose Sustainable retrofitting of aged buildings plays a significant role in reducing energy demands and greenhouse gas emissions. This study aims to assess the ...

A review of approaches to low-carbon transition of high-rise residential buildings in China ... In national building energy-efficiency standard JGJ 26-86 (1986), the energy conservation goal ...

At present, the construction and development of urban residential buildings in China are mainly multi-storey and high-rise buildings. Therefore, higher requirements are put ...

Installing solar panels on residential roofs is an increasingly sound investment, researchers in China and the US have shown. Within the lifespan of today's solar panels, the value of a solar ...

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Solar chimney applications in multi-storey buildings: A critical review. Multi-storey solar ...

In the Chinese climate, combined solar chimneys can reduce annual ventilation energy consumption in two-storey detached residential buildings by 77.8 % and the energy ...

Specifically, this research obtained optimal design schemes of energy-saving targets for individual residential building archetypes in China"s hot summer and cold winter ...

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