

Are solar irradiation resources and BIPV potential of residential buildings in China?

Based on the developed mathematical model, this paper assesses the solar irradiation resources and BIPV potential of residential buildings in different climate zones of China. It is found that roofs are the first choice for BIPV installation, followed by south facades, especially in high-latitude cities, and then east and west facades.

Why are ultra-low energy buildings a problem in China?

With the acceleration of China's urbanization process and the improvement of people's living standards, as well as the increasingly stringent requirements for energy conservation and emission reduction, ultra-low energy buildings are also facing some problems and challenges in the process of rapid promotion and application.

How many Solar Decathlon entries are there in China?

This study focused on the 15 entries in the third Solar Decathlon China. It summarized their energy-saving design strategies into strategies of architectural design, equipment management, energy acquisition and intelligent regulation, and extracted a total of 22 key design elements.

What is solar design & engineering (SD)?

SD is a competition regarding solar building, design and engineering, initiated by the U.S. Department of Energy (DOE) in 2002 with universities worldwide as participants. Each team designs and builds a high-performance, full-size house with solar energy as the sole energy source.

Are zero energy buildings based on BIPV?

This study elaborates the theoretical basis of zero energy buildings and BIPV as well as the current status of the construction of the world's low-carbon building standard system, and it summarizes the annual electricity generation of zero carbon buildings adopting BIPV in some European countries.

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.

On the basis of data analysis, this study provides a quantitative decision basis for the energy-saving design strategy of zero-energy buildings, and establishes an empirical model for the...

Examples of Some Excellent Entries of the International Solar Building Design Competition

This paper discusses issues concerning BIPV in architectural design in China, including how to choose

between BIPV and building-attached photovoltaics (BAPV), whether it ...

Researchers (Brasebin et al., 2017) explored building configurations and regulations using a stochastic building generator and a performance analysis workflow to facilitate decision-making process ...

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The first zero-energy building in Beijing was unveiled at Shoucheng Prospect Park, a project designed by Gensler and co-developed by Shougang Fund and Royal Eagle Group (RGE).

Regardless of the threshold adopted, small and beautiful projects complement the larger-sized projects that China's collaboration with Africa has focused on in the past. Data shows that after 2013, the average size of a newly China-financed hydropower project in Africa is 402 MW, and 107 MW for solar projects.

Building skin can provide comprehensive functions of energy production, daylighting, and shading with an integrated transmissive solar-concentrating panel. In this study, Rhino Grasshopper parametric modeling, Ladybug tool performance simulation, and Octopus multiobjective optimization platforms are used to carry out experimental research. This study ...

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