

Renovation of high-rise housing with solar lighting



Overview

One of the fundamental challenges in today's world is substituting fossil fuels with renewable energies. All the frequent practices have been intensified in order to utilize the earth and its environment as a source of ene. ••This study reviews the recent literature about the solar passive strategies. In a country's development, one significant role is played by energy. As fossil fuels encompass a very large portion of today's world energy consumption, renewable energies that cou. 2.1. World energy concernsIn today's world, energy sources have performed necessary functions, such as creating heat, supplying drinking water, generating powe. The Pinnacle or the Bishopsgate Tower is one of the latest Ken Yeang's projects, which totally illustrates the characteristics of his green and ecological skyscrapers (Fig. 4). It is a type of. Eventually, by considering today's global warming and world's economy, no one doubts that current energy sources are not interminable. So, the necessity of sustainable design.



Article Content

(PDF) Overview of Sustainable Design Criteria in High-Rise ...

International Congress of Architecture and Planning (ICONARCH IV) - ISBN: 978-625-7327-00-8 Overview Of Sustainable Design Criteria In High-Rise Building Facade Design 695 Construction waste management has been established during construction and care has been taken to use recycled materials. Solar panels are placed on the roof instead of the facade and these roads ...

from renovation to full Passive House

- the renovation of a high-rise social housing block (in renovation) The first project has been implemented in accordance with Passive House principles. The project is special in that it concerns the retrofit of a listed building in an industrial conservation area dating from 1912.

Some neat solar punkish examples of housing. Obviously these ...

Some neat solar punkish examples of housing. Obviously these specific examples could be modified to be more solar punk in the long term ... so this kind of high rise urban architecture with a massive and well connected public transport just works better for the cities. As a result the cities of the country where I come from are far more densely ...

Reshaping Urban Living: The Transformation of Housing in ...

Gaborone's skyline is evolving with contemporary architectural designs that blend functionality with aesthetic appeal. From sleek high-rise apartments to innovative housing complexes, architects are embracing modern materials and techniques that cater to urban lifestyles while maintaining a connection to Botswana's cultural identity.

(PDF) Regulating Natural Lighting and Ventilation of Residential ...

Then, it discusses the implications of the Hong Kong case for policy implementation to achieve a healthy environment in high-rise, high-density housing in South Korea, if any. Finally, conclusions are drawn. <Hong Kong> <South Korea> Figure 1. Typical floor plans of super high-rise housing Source: Kim and Kim (2007), Kim and Lee (2005) 2.

Façade Integrated Photovoltaics design for high-rise ...

The study provided a novel integrative design method supporting the FIPV application for high-rise with balconies from architectural perspectives, which can balance the performance in aspects of...

High-rise residential building makeovers: Improving renovation ...

To understand policy, process, and practice barriers to improving the high-rise residential building renovation process, we first examined high-rise residential building ...

A literature review on Building Integrated Solar Energy Systems ...

The authors propose a system that naturally reacts to climatic conditions and analyse the power generation, natural light availability and heat transfer from the system to the building structure ...

Identifying practical sustainable retrofit measures for existing high ...

While high-rise residential building accounts for a large proportion of the building stock, introducing sustainable retrofit to high-rise residential buildings should, therefore, help reduce energy consumption, and achieve the emission reduction targets of a country or city . Despite that, the way of developing alternative retrofit measures including data collection by ...

Energy-Saving and Ecological Renovation of Existing ...

This study evaluates wind environment, light environment, thermal environment, and energy consumption environment using Phoenix, Ecotect, and DesignBuilder tools, utilizing a high-rise residential building in an ...

Thermal and environmental evaluation of mid-rise social housing ...

In Spain, according to the 2011 Population and Housing Census, there were around 5.8 million residential buildings with four or more floors built before 1980 this country, in response to European directives, an update of the long-term strategy for renovating existing buildings to achieve almost net-zero energy buildings by 2050 was launched in 2020 .

Design of solar systems in high-rise buildings

Nowadays, the renovation program is being implemented in the megapolises of Russia. Innovative high-rise buildings are built instead of morally and physically obsolete houses, where non ...

Developing a framework of interventions for retrofitting ...

2017. Since 2003 all new houses in Australia are required to comply with energy efficiency rules of the National Construction Code (NCC), with the result that new dwellings now use as little as 25% of the heating and cooling energy of a ...

Application of advanced glazing to high-rise residential buildings in ...

Fig. 1 shows a three-dimensional image of the model for the Harmony block, without overhangs. The residential flats in the building are located at the two pairs of identical wings which are attached to a central core where the stairs and lifts are located, as shown in Fig. 2(a). The orientation of the building was assumed to be such that the four wings extend ...

A Study on Optimization of Sun Light Source (Day Lighting) in High Rise ...

the sun light sources inside of the entire the residential rooms. II. Objectives To utilize the maximum Day lighting Energy for the residential building Reduce the usage of artificial energy in a residential building in the daylight hours To construct the building as a ...

THE REFERENCE GUIDE TO SOLAR SOLAR IS THE NEW ...

prices on the rise, solar street lighting is becoming the new standard. More than just a cost-effective solution, it is also a way to commit to the Energy Transition. Thanks to its easy installation, lack of cables and electric cabinets, and autonomous operation, the solar street light is more competitive than grid lighting. SOLAR STREET LIGHTING,

Facade Design for High-Rise Buildings Essentials

The facade design of high-rise buildings is an essential aspect of their overall architectural composition. It not only affects the aesthetic appeal of the building but also plays a significant role in functionality and performance. ...

(PDF) Case Study on Prefabricated Sunspace-Addition Renovation ...

A large number of existing high-rise residential buildings in China have problems such as high energy consumption and poor comfort. Renovating them is an important way for sustainable urban ...

High-Rise Residential Building Makeovers: Improving renovation ...

standards are often narrowly focussed on energy use and fail to consider the complexities of high-rise residential building systems. To understand policy, process, and practice barriers to ...

Energy Efficiency Analysis of Building Envelope Renovation and ...

The findings can assist decision-makers in developing building renovation strategies for high-rise buildings while considering energy conservation. Research methodology.

Residential buildings integrated with SPVP and RCL towards ...

The high-rise residential buildings in cities become popular in China, accounting for over 40 % of the newly-built buildings [, ,].The façade spaces of the high-rise residential buildings ...

High-rise residential building makeovers: Improving renovation ...

The need to renovate high-rise residential buildings to maintain or improve indoor environmental conditions and reduce energy use is becoming prevalent worldwide.

The renovation of window mechanism for natural ventilation in a high ...

The purpose of this paper is to analyse correlations between the amount of ventilation, building thermal loads and the operation of windows. The analysis was performed on a Korean high-rise ...

A review of approaches to low-carbon transition of high-rise ...

In terms of the definition of an HRB, different countries and organizations have different interpretations. In the United States, according to the Planning and environmental criteria for tall buildings, an HRB is defined as a building "in which "tallness" strongly influences planning, design, and use" and "whose height creates different conditions in the design, construction, ...

Energy-efficient renovation of high-rise housing

Therefore, although Renovation of high-rise housing 367 new dwellings can be built to consume much less energy in maintaining comfort than existing dwellings, their potential contribution to overall reductions in energy use in the short term is limited.

Parametric Design of a High-Rise Habitation Unit System through ...

In a recent article, Sarvani and Kontovourkis used parametric scripting methods to design high-rise residential units to allow in the adequate level of light. Those studies ensure flexible ...

Building study: Lacaton & Vassal's renovation of a Bordeaux housing ...

It's a reinvestment in society to show how high-rise housing can once again meet the needs of our citizens at very low rent. Beyond the architectural, the human is at the heart of this project. These urban living spaces have been redesigned to improve the quality of urban life for residents offering increased space, more comfort and cheaper running costs.

Intelligent and Sustainable Facades for High-Rise Buildings

High-performance glazing: Utilising coatings and films to control solar heat gain and light transmission. Active Strategies: Photovoltaic (PV) panels: Integrating solar cells into the façade to generate renewable energy. Electrochromic glass: Adjusting the tint of the glass electronically to control light and heat.

Melbourne's public housing towers could (and should) ...

Office's report examines the delivery of the RRR approach against the HRRP development for the government's 1960s public housing estate in Flemington, a precinct made more iconic by ARM's 1995 renovation to the ...

Existing and future technologies for retrofitting the UK ...

Other research has indicated that energy intensities are much greater in high-rise blocks than in low and medium-rise (Godoy-Shimizu, 2018). On the other hand, high densities and lack of available land may limit the ...

Parametric Design of a High-Rise Habitation Unit System through ...

No. 3(4) Parametric Design of a High-Rise Habitation Unit System through Lighting and Solar Energy Performances Vasiliki Sarvani, Odysseas Kontovourkis* University of Cyprus, Faculty of Engineering, Department of Architecture, Kallipoleos St. 75, P.O.Box 20567, 1678 Nicosia, Cyprus *Corresponding author: kontovourkis.odysseas@ucy.ac.cy [http ...](http://www.kontovourkis.odysseas@ucy.ac.cy)

(PDF) Energy efficiency of high-rise buildings

Energy of high-rise buildings is their high energy consumption in comparison with buildings with a lower number of storeys, which can be compensated by the integration of solar energy [1, 2]. This ...

Integrated urban regeneration for high-rise multi-family buildings ...

The design of this multi-criteria assessment system in housing renovation, specifically designed for high-rise multi-family buildings, introduces and breaks down as a novelty 12 assessment variables, organised into two types: 6 variables related to the development of the works, and 6 variables that value the result of the intervention for each renovation strategy.

Energy efficiency of high-rise buildings

of energy used for lighting, heating, ventilation, air-conditioning, operation of elevators, while maintaining a comfortable microclimate in the premises. It is known that heating, ventilation, air-conditioning of high-rise buildings require about 70 % of energy, lighting - 20%, maintenance of elevators - 10 %.

Investigation of Sun Protection Issues via the Active and Passive ...

The demand for a continuous and extensive use of buildings in contemporary central business districts without proper maintenance has led to an aging building stock. The need for refurbishment and use of these buildings, based on the Energy

The Effects of Daylighting and Solar Energy in High Rise Buildings

Conference: SBE16 ISTANBUL- International Conference on Sustainable Built Environment, Smart Metropolises – Integrated Solutions for Sustainable and Smart Buildings& Cities 13-15 October 2016 ...

The Effects of Daylighting and Solar Energy in High ...

This paper summarizes the benefits and defects of daylighting and solar energy effects on high rise buildings. High rise buildings are seemingly well-tuned to their climate; and they provide...

Study on the Integration Design of Solar Energy Light Heat ...

Due to the lack of research on integration design of light and heat from solar energy utilized in the high-rise housing above 20 storey, the thesis conducts the study and exploration of integration ...

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