

ISSN: 2328-4889

Volume 11, Number 2, June 2023



# Journal of Building Construction and Planning Research



ISSN: 2328-4889



9 772328 488006 02

<https://www.scirp.org/journal/jbcpr>

# Journal Editorial Board

ISSN Print: 2328-4889 ISSN Online: 2328-4897

<https://www.scirp.org/journal/jbcpr>

---

## Editor-in-Chief

Prof. Gwang-Hee Kim Kyonggi University, South Korea

## Associate Editor-in-Chief

Dr. Yoonseok Shin Kyonggi University, South Korea

## Regional Editors

Prof. Ayman Batisha Cairo University, Egypt  
Dr. Chi-Kwan Chau The Hong Kong Polytechnic University, China  
Prof. Sunkuk Kim Kyung Hee University, South Korea  
Prof. SangHyun Lee University of Michigan, USA  
Dr. Llewellyn Tang University of Nottigham, China

## Editorial Board

Dr. Claudiu Aciu Technical University of Cluj-Napoca, Romania  
Dr. Yong Han Ahn Western Carolina University, USA  
Dr. Sung-Hoon An Daegu University, South Korea  
Prof. Joshua Ayarkwa Kwame Nkrumah University of Science and Technology, Ghana  
Dr. Antonio Bilotta University of Naples Federico II, Italy  
Prof. Robert Cerny Czech Technical University in Prague, Czech Republic  
Dr. Carlos Chastre NOVA University of Lisbon, Portugal  
Dr. Ali Cheshmehzangi University of Nottingham, China  
Dr. Hunhee Cho Korea University, South Korea  
Dr. Kyuman Cho Chosun University, South Korea  
Dr. Hee-Bok Choi Jeju National University, South Korea  
Dr. Kunhee Choi Texas A&M University, USA  
Prof. Jui-Sheng Chou National Taiwan University of Science and Technology, Chinese Taipei  
Dr. Sutapa Das Indian Institute of Technology Kharagpur, India  
Dr. Eghosa Noel Ekhaese Covenant University, Nigeria  
Prof. Islam M. Ezz El-Arab Tanta University, Egypt  
Dr. Jae-Weon Jeong Hanyang University, South Korea  
Dr. Jin-Kyu Joo Kyonggi University, South Korea  
Dr. Mohammad Arif Kamal Aligarh Muslim University, India  
Dr. Seok-Jin Kang Gyeongsang National University, South Korea  
Dr. Youngcheol Kang Yonsei University, South Korea  
Prof. Chang Sung Kim Hyupsung University, South Korea  
Dr. Jae-Yeob Kim Korea National University of Transportation, South Korea  
Prof. Jin-Wook Kim Seoul National University of Science & Technology, South Korea  
Dr. Myeong-Han Kim Mokpo National University, South Korea  
Dr. Tae-Hui Kim Mokpo National University, South Korea  
Dr. Dan Koo Indiana University-Purdue University Indianapolis, USA  
Dr. Hyung-Sook Lee Gachon University, South Korea  
Dr. Sang-Tae No Korea National University of Transportation, South Korea  
Dr. Kenneth S. Park Massey University, New Zealand  
Dr. U-Yeol Park Andong National University, South Korea  
Prof. Alan Graham Phipps University of Windsor, Canada  
Dr. Boong Yeol Ryoo Texas A&M University, USA  
Dr. Sania Sami Islamic Azad University, Iran  
Prof. Deok Seok Seo Halla University, South Korea  
Dr. Kyung Wook Seo Kyonggi University, South Korea  
Dr. Minh Seo Korea Research Institute of Human Settlements, South Korea  
Dr. Kiyoung Son University of Ulsan, South Korea  
Dr. Sung Joon Suk Western Carolina University, USA  
Prof. Maria Urmă "George Enescu" National University of Arts, Romania  
Dr. Bo Xia Queensland University of Technology, Australia  
Prof. Keun-Hyeok Yang Kyonggi University, South Korea

# Table of Contents

**Volume 11    Number 2**

**June 2023**

**Pathfinder-Based Simulation and Optimization of Evacuation of Large Commercial Complexes**

J. J. Liu, S. H. Li.....27

**Enhanced Constructability Using 4D Plus Modelling in Brownfield Sites**

M. A. Stogdill, M. A. T. Veleri.....36

**Research on the Ecological Wisdom of Traditional Dwellings of the Liangshan Yi Nationality Based on Regional Climate**

Q. Lai, W. Liu, X. Li.....50

# Journal of Building Construction and Planning Research (JBCPR)

## Journal Information

### SUBSCRIPTIONS

The *Journal of Building Construction and Planning Research* (Online at Scientific Research Publishing, <https://www.scirp.org/>) is published quarterly by Scientific Research Publishing, Inc., USA.

#### Subscription rates:

Print: \$39 per issue.

To subscribe, please contact Journals Subscriptions Department, E-mail: [sub@scirp.org](mailto:sub@scirp.org)

### SERVICES

#### Advertisements

Advertisement Sales Department, E-mail: [service@scirp.org](mailto:service@scirp.org)

#### Reprints (minimum quantity 100 copies)

Reprints Co-ordinator, Scientific Research Publishing, Inc., USA.

E-mail: [sub@scirp.org](mailto:sub@scirp.org)

### COPYRIGHT

#### Copyright and reuse rights for the front matter of the journal:

Copyright © 2023 by Scientific Research Publishing Inc.

This work is licensed under the Creative Commons Attribution International License (CC BY).

<http://creativecommons.org/licenses/by/4.0/>

#### Copyright for individual papers of the journal:

Copyright © 2023 by author(s) and Scientific Research Publishing Inc.

#### Reuse rights for individual papers:

Note: At SCIRP authors can choose between CC BY and CC BY-NC. Please consult each paper for its reuse rights.

#### Disclaimer of liability

Statements and opinions expressed in the articles and communications are those of the individual contributors and not the statements and opinion of Scientific Research Publishing, Inc. We assume no responsibility or liability for any damage or injury to persons or property arising out of the use of any materials, instructions, methods or ideas contained herein. We expressly disclaim any implied warranties of merchantability or fitness for a particular purpose. If expert assistance is required, the services of a competent professional person should be sought.

### PRODUCTION INFORMATION

For manuscripts that have been accepted for publication, please contact:

E-mail: [jbcpr@scirp.org](mailto:jbcpr@scirp.org)



# Journal of Building Construction and Planning Research

ISSN: 2328-4889 (Print) ISSN: 2328-4897 (Online)  
<https://www.scirp.org/journal/jbcpr>

Journal of Building Construction and Planning Research (JBCPR) is an open access, scholarly peer reviewed and refereed journal published in electronic form as well as print form. The JBCPR publishes original research, state-of-the-art review articles, discussion papers, innovative industrial application, insightful case studies, and book reviews from experts in the field of building construction and planning. The extensive knowledge, experimental findings, and practical information produced by the journal have become significant resources for innovations in building construction and planning. The journal aims to promote technical and scientific advances in building construction and planning among academia, professionals, consultants and students by stimulating research, encouraging academic exchange and enhancing professional development. The editors welcome high-quality contributions from all over the world.

## Subject Coverage

Topics of interest include, but are not limited to the following:

- Applications of Computer Models, Techniques, and Equipment
- Building Conservation
- Building Design and Operation
- Building Heritage
- Building Maintenance and Repairs
- Building Planning
- Building Remodeling
- Building Systems & Components
- Construction Management
- Construction Materials
- Construction Methods
- Construction Safety
- Crime Prevention through Environment Design
- Education Relate to Building Construction and Planning
- Emerging Building Technology and Materials
- Energy Consumption & CO<sub>2</sub> Emissions of Materials & Construction Methods
- Environmental Engineering of Buildings
- Environmental Pollution in Buildings
- Green Building Design & Technology
- High-Rise Building Design and Construction
- History of Construction and Architectural Engineering
- HVAC System for Building
- Landscape Planning and Design for Building
- Passive House Design and Construction
- Performance of Buildings
- Project Management
- Recycling of Building Materials
- Specification for Building Construction
- Structural Engineering of Building
- Sustainable Development of Building
- Urban Planning and Development
- Urban Renewal
- Other Fields Related to Building Construction and Planning

We are also interested in: 1) Short Reports: 2-5 page papers where an author can either present an idea with theoretical background but has not yet completed the research needed for a complete paper or preliminary data; 2) Book Reviews: Comments and critiques.

## Website and E-Mail

<https://www.scirp.org/journal/jbcpr>

E-mail: [jbcpr@scirp.org](mailto:jbcpr@scirp.org)

## ***What is SCIRP?***

Scientific Research Publishing (SCIRP) is one of the largest Open Access journal publishers. It is currently publishing more than 200 open access, online, peer-reviewed journals covering a wide range of academic disciplines. SCIRP serves the worldwide academic communities and contributes to the progress and application of science with its publication.

## ***What is Open Access?***

All original research papers published by SCIRP are made freely and permanently accessible online immediately upon publication. To be able to provide open access journals, SCIRP defrays operation costs from authors and subscription charges only for its printed version. Open access publishing allows an immediate, worldwide, barrier-free, open access to the full text of research papers, which is in the best interests of the scientific community.

- High visibility for maximum global exposure with open access publishing model
- Rigorous peer review of research papers
- Prompt faster publication with less cost
- Guaranteed targeted, multidisciplinary audience



**Scientific  
Research  
Publishing**

**Website: <https://www.scirp.org>**

**Subscription: [sub@scirp.org](mailto:sub@scirp.org)**

**Advertisement: [service@scirp.org](mailto:service@scirp.org)**