

ISSN: 2328-4889

Volume 10, Number 1, March 2022



# Journal of Building Construction and Planning Research



ISSN: 2328-4889



<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 Campus), 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. Minhoo 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 10    Number 1**

**March 2022**

**Applications of Housing Affordability Measurement Approaches Used in  
Planning Affordable Housing: A Systematic Review**

I. S. Ezennia, S. O. Hoskara.....1

**Mud Wasps and Its Role in the Destruction of Ancient Buildings in Application to the  
Temple of Isis in the Temple of Dandara, Qena, Egypt and Methods of Prevention**

E. A. Abd-Elkareem, H. A. Fouad.....37

# 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 © 2022 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 © 2022 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



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

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

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