

ISSN 2332-1091

Volume 12 Number 2 2024



Civil Engineering and Architecture

<http://www.hrpub.org>

Horizon Research Publishing, USA

Civil Engineering and Architecture

Civil Engineering and Architecture is an international peer-reviewed journal that publishes original and high-quality research papers in all areas of civil engineering and architecture. As an important academic exchange platform, scientists and researchers can know the most up-to-date academic trends and seek valuable primary sources for reference. The subject areas include, but are not limited to the following fields: Architectural Drawing, Architectural Style, Architectural Theory, Biomechanics, Architectural Design, Coastal Engineering, Building Materials and Technology, Smart Built Environment, Earthquake Engineering, Environmental Engineering, Geotechnical Engineering, Bridge Engineering, Municipal Or Urban Engineering, Organic Architecture, Sociology of Architecture, Structural Engineering, Surveying, Transportation Engineering, Construction Engineering and Management, History of Civil Engineering.

General Inquires

Publish with HRPUB, learn about our policies, submission guidelines etc.

Email: editor@hrpub.org

Tel: +1-626-626-7940

Subscriptions (Electronic Version only)

Journal Title: Civil Engineering and Architecture

Journal's Homepage: http://www.hrpub.org/journals/jour_info.php?id=48

Publisher: Horizon Research Publishing Co.,Ltd

Publication Frequency: bimonthly

Electronic Version: freely online available at http://www.hrpub.org/journals/jour_info.php?id=48

Online Submission

Manuscripts should be submitted by Online Manuscript Tracking System (<http://www.hrpub.org/submission.php>).

If you are experiencing difficulties during the submission process, please feel free to contact the editor at submission@hrpub.org.

Copyright

Authors retains all copyright interest or it is retained by other copyright holder, as appropriate and agrees that the manuscript remains permanently open access in HRPUB 's site under the terms of the Creative Commons Attribution International License (CC BY). HRPUB shall have the right to use and archive the content for the purpose of creating a record and may reformat or paraphrase to benefit the display of the record.

Creative Commons Attribution License (CC-BY)

All articles published by HRPUB will be distributed under the terms and conditions of the Creative Commons Attribution License(CC-BY). So anyone is allowed to copy, distribute, and transmit the article on condition that the original article and source is correctly cited.

Open Access

Open access is the practice of providing unrestricted access to peer-reviewed academic journal articles via the internet. It is also increasingly being provided to scholarly monographs and book chapters. All original research papers published by HRPUB are available freely and permanently accessible online immediately after publication. Readers are free to copy and distribute the contribution under creative commons attribution-non commercial licence. Authors can benefit from the open access publication model a lot from the following aspects:

- High Availability and High Visibility-free and unlimited accessibility of the publication over the internet without any restrictions;
- Rigorous peer review of research papers----Fast, high-quality double blind peer review;
- Faster publication with less cost----Papers published on the internet without any subscription charge;
- Higher Citation----open access publications are more frequently cited.

Civil Engineering and Architecture

Editor-in-Chief

Prof. Jorge M. Tavares Ribeiro

University of Lisbon, Portugal

Honorary Editor-in-Chief

Dr. Masa Noguchi

University of Melbourne, Australia

Deputy Editor-in-Chief

Prof. Ashraf Badir

Florida Gulf Coast University, USA

Prof. Salvatore Leonardi

University of Catania, Italy

Dr. Liyaning (Maggie) Tang

University of Newcastle, Australia

Members of Editorial Board

Prof. Aldo Renato Daniele Accardi

University of Palermo, Italy

Prof. Muhammad Saleem

University of Dammam, Saudi Arabia

Prof. Alope Kumar Datta

National Institute of Technology, India

Prof. Behzad Sodagar

University of Lincoln, UK

Prof. Rosa Maria Vitrano

University of Palermo, Italy

Prof. Antonio Formisano

University of Naples "Federico II", Italy

Prof. SALVATORE ANTONIO BIANCARDO

University of Naples Federico II, Italy

Prof. Maurizio Nicolella

University of Naples Federico II, Italy

Prof. Giuseppe Lacidogna

Polytechnic University of Turin, Turin, Italy

Prof. Stefano Dal Pont

Université Grenoble Alpes (UGA), France

Prof. Mario Grosso

Independent Researcher, Italy

Prof. H. Murat Celik

Istanbul Technical University, Turkey

Prof. Luigi Alini

University of Catania, Italy

Prof. Hakim S. Abdelgader

University of Tripoli, Libya

Prof. Jacob Oludoye Oluwoye

Alabama A&M University, USA

Prof. Ahmed Senouci

University of Houston, USA

Dr. Chia-Hui Lin

National Taiwan University, Taiwan

Dr. Santina Di Salvo

University of Palermo, Italy

Dr. Hongyuan Liu

University of Tasmania, Australia

Dr. Amira Elnokaly

University of Lincoln, UK

Dr. Damian Beben

Opole University of Technology, Poland

Dr. Ying Wang

Deakin University, Australia

Dr. Daniela Jurasova

University of Zilina, Slovakia

Dr. Petros Christou

Frederick University, Cyprus

Dr. Lee Pugalis

Northumbria University, UK

Dr. Maurizio Francesco Errigo

Kore University of Enna, Italy

Dr. Luisa Maria Calabrese

Delft University of Technology, Netherlands

Civil Engineering and Architecture

Volume 12 Number 2 2024

<p>Bio-design as a Basis for the Creation of New Architectural Materials: Experience of the Faculty of Architecture of Gazi University <i>(https://www.doi.org/10.13189/cea.2024.120201)</i> Güneş Mutlu Avinç, Semra Arslan Selçuk</p>	643
<p>Achieving Thermal Comfort through the Design of a Tourist Hotel – (Huancayo) <i>(https://www.doi.org/10.13189/cea.2024.120202)</i> Marisol Arroyo Inga, Helio Sebastian Balvin Huanuco, Jorge Luis Poma Garcia, Claudia Rossana Poma Garcia</p>	668
<p>Effect of Marble Dust on UCS and CBR of Gypsum Stabilized Clay <i>(https://www.doi.org/10.13189/cea.2024.120203)</i> Batchu Ramanjaneyulu, Nandyala Darga Kumar.....</p>	685
<p>Seismic Analysis of Frame Structure with Infill Using Finite Element-Based Meso-Modelling Technique <i>(https://www.doi.org/10.13189/cea.2024.120204)</i> A. R. Avinash, A. Krishnamoorthy, Kiran Kamath, M. Chaithra</p>	697
<p>Analyzing the Life-Cycle Cost of Manholes: Cement Concrete Versus Polymer Concrete <i>(https://www.doi.org/10.13189/cea.2024.120205)</i> Kishor Shrestha, Pramen P. Shrestha, Jacimaria Batista</p>	712
<p>Improving Activity Requirements in Open Plan Office Spaces by Using Different Acoustic Design Elements: Engineering Studies and Consultation Center as a Case Study <i>(https://www.doi.org/10.13189/cea.2024.120206)</i> Sanaa Abdelghany Eldyasty Ahmed Eid, Asmaa Nasr Eldin Elbadrawy, Alaa Mohamed Shams Eldein Eleashy</p>	722
<p>Development of Work Breakdown Structure (WBS) in High-Rise Office Buildings using Green Retrofitting based on GBCI and Minister of PUPR Regulation No. 21 of 2021 to Improve the Quality of Resource Planning <i>(https://www.doi.org/10.13189/cea.2024.120207)</i> Bernadette Detty Kussumardianadewi, Yusuf Latief, Bambang Trigunarsyah, Ayomi Dita Rarasati, Winny Widiani</p>	740

Exploring the Continuum and Changes in the Cultural Identity of Migrant Community - Vaniga Vysya, A Tamil Community in Balaramapuram, Kerala (https://www.doi.org/10.13189/cea.2024.120208)	
C. Indra, Kumudhavalli Sasidhar	754
The Effect of Fly Ash Based Geopolymer Aggregate Using Crushing and Pelletization Methods on the Mechanical Properties of Concrete (https://www.doi.org/10.13189/cea.2024.120209)	
Bimo Brata Adhitya, Rosidawani, Budi Nayobi, M. Hadziq Huda, Defiria Afifah	788
Soil-Structure Interaction Influence on the Seismic Performance of Buildings (https://www.doi.org/10.13189/cea.2024.120210)	
Soumaya El janous, Mohamed Amine Abid, Abderrachid Afras, Abdelouafi El Ghoulbzouri	798
Mechanical Analysis of Concrete Using Over-burnt Bricks as Coarse Aggregate (https://www.doi.org/10.13189/cea.2024.120211)	
Yober Osterlen Mantari Ramos, Karla Esther Huamancayo Lizarraga, Yerson Percy Amancay Huiza, Niel Iván Velasquez Montoya	814
Assessment of Two-sided Concrete Corbel with Different Structural Forms Using Finite Element Modeling (https://www.doi.org/10.13189/cea.2024.120212)	
Aristotle L. Medina, Gilford B. Estores	822
Influence of Vertical Geometric Irregularities of Reinforced Concrete Buildings on the Time Period for Different Bay Widths and Building Heights (https://www.doi.org/10.13189/cea.2024.120213)	
Sandeep G. S., Jagadisha H. M., Sindhu V. N.	840
Life Cycle Impact Assessment Methodology for Building Envelope Retrofits Using Photovoltaic Systems in Egypt (https://www.doi.org/10.13189/cea.2024.120214)	
Heba Mohamed Hafez Alsaied, Ahmed El Tantawy El Madawy, Nanees Abd El Hamid El Sayyad	850
Effect of Nano-Silica on the Mechanical Characteristics of Ternary Blended Concrete (https://www.doi.org/10.13189/cea.2024.120215)	
Myakala Vamshikrishna, Ilango Sivakumar	866
Hydrogeological Potential 3D Model Analysis in Groundwater Basins in Volcanic Areas of North Maluku (https://www.doi.org/10.13189/cea.2024.120216)	
Zubair Saing, Wawan A. K. Conoras, Julhija Rasai	873
The Architectural Tectonics of Traditional Buildings in Mandailing, North Sumatera, Indonesia (https://www.doi.org/10.13189/cea.2024.120217)	
Cut Nuraini	892

Evaluation of Daylight Performance in Classrooms through Retrofitting in the Composite Climate of Eastern India (https://www.doi.org/10.13189/cea.2024.120218) Alok Kumar Maurya, Ravish Kumar, Ajay Kumar	917
Comparative Analysis of Concrete Mix Design Methods: SNI 03-2834-2000 vs. SNI 7656:2012 (https://www.doi.org/10.13189/cea.2024.120219) Riza Suwondo, Christopher, Made Suangga	937
Influence of Recron 3S Fibres on Consolidation Behaviour of Expansive Black Soils (https://www.doi.org/10.13189/cea.2024.120220) Unnam Anil, H. S. Prasanna, Chandan K. S., Rachana B. Gowda.....	943
The Application of Adjustments as a Coping Strategy to Overcome the Space Deficiency Problem in Urban Areas (https://www.doi.org/10.13189/cea.2024.120221) Linda W. Fanggidae.....	963
Optimizing Public Seating Design in Post-Pandemic Urban Community Parks: A Comprehensive Framework (https://www.doi.org/10.13189/cea.2024.120222) Ling Zhang, Velu Perumal, Ahmad Rizal Abdul Rahman, Mohd Faiz Yahaya, Abdul Rohim Tualeka.....	982
Flood Frequency Analysis for Kosi River Basin, Bihar, India Using Statistical Methods (https://www.doi.org/10.13189/cea.2024.120223) Niraj Kumar, Ramakar Jha	991
Axial Compression Load Capacity of Tubular Steel Columns with Polygon Cross-Sections (https://www.doi.org/10.13189/cea.2024.120224) Amjad A. Yasin, Ahmad B. Malkawi, Muhmmad I. M. Rjoub, Hani Qadan, Faroq Maraqa, Jamal Aladwan	1000
Improving Natural Ventilation Multi-Story Buildings within Hot and Dry Climates: A CFD Study of Windcatcher Performance (https://www.doi.org/10.13189/cea.2024.120225) Jenan Abu Qadourah.....	1014
Field Assessment of Daylight Illumination in Lecture Halls with Heavily Tinted Glazing and Adjustable Blinds in Hot Arid Climates (https://www.doi.org/10.13189/cea.2024.120226) Abdultawab M. Qahtan	1027
Flexural Behavior of Plastic Bottle Waste Fiber Reinforced Concrete: A Comparative Study between Continuous Fiber and Strip Fiber (https://www.doi.org/10.13189/cea.2024.120227) Christin Remayanti Nainggolan, Indradi Wijatmiko, Ari Wibowo, Siti Nurlina, Ruth Diana Simanjuntak	1037

The Impact of Double-Track Construction towards Utilization: A Case Study of Surabaya – Madiun Segment (https://www.doi.org/10.13189/cea.2024.120228)	
Hera Widyastuti, Wahyu Satyaning Budhi	1048
Effect of Slaking Cycles on Weathered Rock Material (https://www.doi.org/10.13189/cea.2024.120229)	
Andius D. Putra	1057
Ottoman Architecture in Algeria: Current State and Prospects for Contemporary Functional Adaptation (https://www.doi.org/10.13189/cea.2024.120230)	
Attar Abdelghani, Saraoui Selma, Mohdeb Rachid, Sara Zineddine, Khadraoui Mohamed Amine	1069
Arguing Faux Biophilia Concepts in F&B Interior Design: A Case Study Applied in Duhok City (https://www.doi.org/10.13189/cea.2024.120231)	
Ahmad Afara, Mustafa Aziz Amen, Maysan El Ayoubi, Dana Ramadhan, Jalal Alani.....	1091
Use of Foamed Asphalt and Foamed Bitumen for Recycled Asphalt Mixtures: A Review (https://www.doi.org/10.13189/cea.2024.120232)	
Luis Villegas, Noe Marín, Cesar Idrogo, Robert Suclupe, Atilio López, Guillermo Arriola	1104
Sustainable Urban Treatments for Mixed-Use (Residential-Industrial) Areas in Egypt (Fuwah Case Study) (https://www.doi.org/10.13189/cea.2024.120233)	
Aml Saad Elgohary, Medhat Samra, Ahmed El-Tantawy El-Madawy.....	1124
Durability and Ecological Evaluation of Structural Concrete with Sewage Sludge Ash as Ternary Binder (https://www.doi.org/10.13189/cea.2024.120234)	
Mithesh Kumar, Shreelaxmi Prashant	1143
Study on Site Effect in Nanning City Using HVSR Method (https://www.doi.org/10.13189/cea.2024.120235)	
Hongcheng Ma, Boi-Yee Liao	1165
Lava Stone Waste Extract as a Substitute for Cement in the Mixture Concrete to Maintain Environmental Sustainability (https://www.doi.org/10.13189/cea.2024.120236)	
I Made Sastra Wibawa, Shinta Enggar Maharani.....	1180
Bond Strength between Steel and Recycled Asphalt Pavement Aggregate and Recycled Concrete Aggregate (https://www.doi.org/10.13189/cea.2024.120237)	
Ahmed M. Ashteyat, Rawan Al-Tarawneh, Nasim Shatarat.....	1190
Cost Effectiveness and SWOT Analysis of Using Conventional or Light-Weight Concrete Materials in Buildings Rested on Weak Soils (https://www.doi.org/10.13189/cea.2024.120238)	
Mohamed Elsharawy, A. B. M. Saiful Islam	1204

Innovative Energy Retrofit Approach of Historical Buildings Using HBIM Process: The Guest House of Al-Karak Greater Municipality in Jordan a Case Study (https://www.doi.org/10.13189/cea.2024.120239)	
Ahmad Younis, Muhieddin Tawalbeh	1219
The Assessment of Site Design as a Passive Fire Protection System in Traditional Batak Toba Settlements, Kampung Ulos Hutaraja-Pardamean (https://www.doi.org/10.13189/cea.2024.120240)	
N. Vinky Rahman, Nurlisa Ginting, Amy Marisa, Johannes Tarigan.....	1235
An Experimental Investigation on the Rutting Performance of the Polymer Modified Bituminous (PMB) Mixes (https://www.doi.org/10.13189/cea.2024.120241)	
Praveen Kumar P, Kiran Kumar B V, Manjunatha S, Gnanamurthy P B	1260
Assessing the Impact of Curtain Walls on the Thermal Performance of High-Rise Offices in Abuja (https://www.doi.org/10.13189/cea.2024.120242)	
Christopher Ileawna Abdul, Roshida Binti Abdul Majid, Adejoh Andrew Ekule, Usman Abdulazeez Adeiza, Isah Obenege Suleiman	1269
Experimental and Numerical Study of the "Indirect" Reinforcement Systems for Masonry Walls (https://www.doi.org/10.13189/cea.2024.120243)	
Nataliia Pinchuk, Volodymyr Byba, Aguinardo Fraddosio, Anna Castellano, Mario Daniele Piccioni	1282
Utilization of Distilled Water to Observe Surface Contact Angle of Polymer-Modified Bitumen (https://www.doi.org/10.13189/cea.2024.120244)	
Tri Sudibyo, Heriansyah Putra, Sutoyo	1294
Flexural Behavior of Cold-Formed Steel Canal Sections Back-to-Back Built-Up Members (https://www.doi.org/10.13189/cea.2024.120245)	
Desy Setyowulan, Eva Arifi, Indra Waluyohadi, Nugroho Adi Sucipto, Fika Assyofia Faida.....	1303

Civil Engineering and Architecture

Call for Papers

Civil Engineering and Architecture is an international peer-reviewed journal that publishes original and high-quality research papers in all areas of civil engineering and architecture. As an important academic exchange platform, scientists and researchers can know the most up-to-date academic trends and seek valuable primary sources for reference.

Aims & Scope

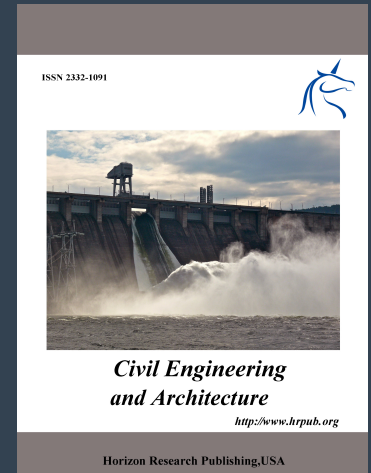
- Architectural Drawing
- Architectural Style
- Architectural Theory
- Biomechanics
- Architectural Design
- Coastal Engineering
- Building Materials and Technology
- Smart Built Environment
- Earthquake Engineering
- Environmental Engineering
- Geotechnical Engineering
- Bridge Engineering
- Municipal Or Urban Engineering
- Organic Architecture
- Sociology of Architecture
- Structural Engineering
- Surveying
- Transportation Engineering
- Construction Engineering and Management
- History of Civil Engineering

Editorial Board

Prof. Jorge M. Tavares Ribeiro	University of Lisbon, Portugal
Dr. Masa Noguchi	University of Melbourne, Australia
Prof. Ashraf Badir	Florida Gulf Coast University, USA
Prof. Salvatore Leonardi	University of Catania, Italy
Dr. Liyaning (Maggie) Tang	University of Newcastle, Australia
Prof. Aldo Renato Daniele Accardi	University of Palermo, Italy
Prof. Muhammad Saleem	University of Dammam, Saudi Arabia
Prof. Alope Kumar Datta	National Institute of Technology, India
Prof. Behzad Sodagar	University of Lincoln, UK
Prof. Rosa Maria Vitrano	University of Palermo, Italy
Prof. Antonio Formisano	University of Naples "Federico II", Italy
Prof. SALVATORE ANTONIO BIANCARDO	University of Naples Federico II, Italy
Prof. Maurizio Nicolella	University of Naples Federico II, Italy
Prof. Giuseppe Lacidogna	Polytechnic University of Turin, Turin, Italy
Prof. Stefano Dal Pont	Université Grenoble Alpes (UGA), France
Prof. Mario Grosso	Independent Researcher, Italy
Prof. H. Murat Celik	Istanbul Technical University, Turkey
Prof. Luigi Alini	University of Catania, Italy
Prof. Hakim S. Abdelgader	University of Tripoli, Libya
Prof. Jacob Oludoye Oluwoye	Alabama A&M University, USA
Prof. Ahmed Senouci	University of Houston, USA
Dr. Chia-Hui Lin	National Taiwan University, Taiwan
Dr. Santina Di Salvo	University of Palermo, Italy
Dr. Hongyuan Liu	University of Tasmania, Australia

Manuscripts Submission

Manuscripts to be considered for publication have to be submitted by Online Manuscript Tracking System(<http://www.hrpub.org/submission.php>). If you are experiencing difficulties during the submission process, please feel free to contact the editor at submission@hrpub.org.



Contact Us

Horizon Research Publishing
2880 ZANKER RD STE 203
SAN JOSE, CA 95134
USA
Email: editor@hrpub.org

Submit your paper at http://www.hrpub.org/journals/jour_submitmanuscript.php?id=48

Available Online http://www.hrpub.org/journals/jour_info.php?id=48

Horizon Research Publishing

<http://www.hrpub.org>