ISSN 2332-1091

Volume 11 Number 6 2023

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. Adel Francis — University of Quebec, Canada

Prof. Muhammad Saleem — University of Dammam, Saudi Arabia

Prof. Aloke 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. Giuseppe Lacidogna — Polytechnic University of Turin, Turin, Italy

Prof. Stefano Dal Pont — Université Grenoble Alpes (UGA), France

Prof. H. Murat Celik — Istanbul Technical University, Turkey

Prof. Luigi Alini — University of Catania, Italy

Dr. Chia-Hui Lin — National Taiwan University, Taiwan

Dr. Engin Eroglu — Duzce University, Turkey

Dr. Santina Di Salvo — University of Palermo, Italy

Dr. Hongyuan Liu — University of Tasmania, Australia

Dr. Amira Elnokaly — University of Lincoln, United Kingdom

Dr. Damian Beben — Opole University of Technology, Poland

Dr. Ying Wang — Deakin University, Australia

Dr. Daniela Jurasova — University of Zilina, Slovakia

Dr. George Vasdravellis — Heriot-Watt University, United Kingdom

Dr. Lee Pugalis — Northumbria University, United Kingdom

Dr. Maurizio Francesco Errigo — Kore University of Enna, Italy

Dr. Luisa Maria Calabrese — Delft University of Technology, Netherlands

Dr. Masa Noguchi — University of Melbourne, Australia

Dr. Alessandro De Masi — University of Trento, Italy

ISSN 2332-1091

Table of Contents

Civil Engineering and Architecture

Volume 11 Number 6 2023

The Effect of Calcium Alginate Capsule on Resilience Modulus of Buton Rock Asphalt-Based Self-Healing Mixtures
(https://www.doi.org/10.13189/cea.2023.110601)
Muhammad Syarif Prasetia, Ludfi Djakfar, Wisnumurti, Akhmad Sabarudin 3249

Using Sustainble Architectural Wind-Driven Tubes Roof-Pond to Save Energy on Roof Cooling Loads in Tropical Climate: CFD Modeling and Experimental Investigations
(https://www.doi.org/10.13189/cea.2023.110602)
Danny Santoso Mintorogo 3260

Model Making as a Creative Skill and Tool for Teaching-Learning Process in Architecture and Product Design
(https://www.doi.org/10.13189/cea.2023.110603)
Rupesh Surwade, Kanwaljit Singh Khas, Smruti Raghani, Mohammad Arif Kamal 3278

Influence of Application of Tuned Liquid Dampers to Enhance Building Resistance to Earthquake
(https://www.doi.org/10.13189/cea.2023.110604)
Tavio, Ali Markiswah 3285

Typification of Facades in Historical Housing in Los Mochis, Sinaloa, Mexico
(https://www.doi.org/10.13189/cea.2023.110605)
Maria Loya-Montiel, Marco Varela-Tovar, Karla Andrade-Rubio, Esperanza Conradi-Galnares 3293

Experimental Investigation and Numerical Simulations of Sandwich Wall Panel with RC Frames under Static Loading
(https://www.doi.org/10.13189/cea.2023.110606)
S. Syed Abdul Rahman, K. S. Satyanarayanan, C. Daniel 3305

Dolomite Powder in Concrete: A Review of Mechanical Properties and Microstructural Characterization
(https://www.doi.org/10.13189/cea.2023.110607)
Rahul Shivaji Divekar, R. M. Sawant 3314

The Effect of Car and Motorcycle Ownership on Traffic Flow in Tourism Area in Kuta Bali
(https://www.doi.org/10.13189/cea.2023.110608)
Ida Bagus Wirahaji, Putu Alit Suthanaya, Dewa Made Priyantha Wedagama,
Anak Agung Gde Agung Yana 3322

Correlation of Mineralogical and Geotechnical Properties of Laterite Soils of Coastal Karnataka, India
(https://www.doi.org/10.13189/cea.2023.110609)
Bhagyashree, H. N. Udayashankar, Purushotham Sarvade, Kavyashree 3334

Prospects for the Development of University Campuses Integrated into Urban Environment in Russia and Kazakhstan
(https://www.doi.org/10.13189/cea.2023.110610)
Irina Gladilina, Svetlana Sergeeva, Nataly Deputatova, Marina Skvortsova, Vladimir Bereznyakovskiy, Anna Silaeva, Gani Karabayev, Seimur Mamedov 3347

Rheological Behavior of Modified Asphalt Binders Using Pre-vulcanized Latex with Dynamic Shear Rheometer Testing
(https://www.doi.org/10.13189/cea.2023.110611)
Ramadhani, Joni Arliansyah, Edi Kadarsa 3355

Scour Prediction in Boulder Beds (Special Reference to Doodh Ganga) Budgam, JK, India
(https://www.doi.org/10.13189/cea.2023.110612)
Muzamil Ahmad Rafiqui, M. A. Lone, M. A. Tantray 3370

The Production of Mingling Spaces as a Form of Children's Mobility
(https://www.doi.org/10.13189/cea.2023.110613)
Dhini Dewiyanti, Andiyan Andiyan, Dianna Astrid Hertoety, Tri Widianti Natalia 3389

Chinese Eclectic Architecture of Kapitan Village Palembang, South Sumatra, Indonesia
(https://www.doi.org/10.13189/cea.2023.110614)
Ahmad Malik Abdul Aziz, Ibnu Aziz, Zuber Angkasa 3414

Optimizing Seismic Bracing Systems for Reinforced Concrete Buildings Based on Height and Seismic Zone
(https://www.doi.org/10.13189/cea.2023.110615)
Yassine Razzouk, Mohamed Ahatri, Khadija Baba, Ahlam El Majid 3430

Thermal Behaviour Assessment of a New Local Clay-Based Building Material and Peanut Shell Waste: Experimental and Numerical Approaches
(https://www.doi.org/10.13189/cea.2023.110616)
Mohamed Lamrani, Ahmed Lkouen, Najma Laaroussi, Mohamed Ouakarrouch 3451

Effect of Recycled Brick Mixture on Energy Efficiency in Building Exteriors
(https://www.doi.org/10.13189/cea.2023.110617)
Mohamed Abohelal, Walaa Nour, Ingy Eldarwish, Hosny Dewer 3471

Properties of Concrete and Mortar Containing Locust Bean Pod Ash as Cement Replacement: A Review
(https://www.doi.org/10.13189/cea.2023.110618)
Felix Nkapheeyan Isa, Megat Azmi Megat Johari, Iorwuese Anum, Solomon Maxwell Soji, Changlia Hassan Salihu, Julius Lananzakan Agabus 3479

Self-Built Houses in a Peruvian Andean City: Seismic Vulnerability and Seismic Behavior
(https://www.doi.org/10.13189/cea.2023.110619)
Jordan Peter Romero Huaman, Flores Rojas David Anderson, Jose Luis Nizama Mallqui, Albert Jorddy Valenzuela Inga, Juan Gabriel Benito Zuñiga, Franz Emmanuel Estrada Porras 3488

Analysis on the Behaviour of Hybrid Outrigger System in Relation to the Frequency Content of Earthquakes
(https://www.doi.org/10.13189/cea.2023.110620)
Neethu Elizabeth John, Kiran Kamath 3505

Optimizing Fiber Reinforced Geopolymer Concrete: Investigating Alkaline-Activator Liquid to Fly Ash and Sodium Silicate to Sodium Hydroxide Ratio
(https://www.doi.org/10.13189/cea.2023.110621)
Greg Blasiak, Yureana Wijayanti, Martin Anda 3520

Dynamic SSI of Regular and Stiffness Irregular Buildings Supported on Pile in Soft Clay
(https://www.doi.org/10.13189/cea.2023.110622)
Subramanya K. G., L Govindaraju, R. Ramesh Babu 3527

Predicting and Optimizing the Energy Efficiency of Sustainable Residential Buildings Using Machine Learning Method
(https://www.doi.org/10.13189/cea.2023.110623)
Dareen Qashmar, Dema Khraisat, Hadeel Tariq Obeidat 3538

A Sustainable Strategy for Rainwater Harvesting through AFLAJ System on the Main Streets: A Case Study in Egypt – MOKATTAM Street
(https://www.doi.org/10.13189/cea.2023.110624)
Marwa Mohamed Abbas, Doaa Abd El Latif Mohammed 3552

The Performance of Stone Mastic Asphalt Incorporating Iron Ore
(https://www.doi.org/10.13189/cea.2023.110625)
Salem Mohammed Salem Aljariri, Abdullah Omar Abdullah Baqadeem, Lee Pei Moon, Mazlan Abu Seman, Khairil Azman Masri 3571

The Potential of Dynamic Structures of Production of Space in Response to Socio-Cultural Context: Lessons from Mamboleo "B" Informal Settlement, Tanzania
(https://www.doi.org/10.13189/cea.2023.110626)
Emmanuel Liombo, Fortunatus Bahendwa, Livin Mosha 3577

Influence of Using Expanded Polystyrene Beads on the Density and Compressive Strength of Hardened Concrete
(https://www.doi.org/10.13189/cea.2023.110627)
Mu'tasime Abdel-Jaber, Nasim Shatarat, Rola El-Nimri 3599

Characterization of Geogenic Raw Materials Used in Handmade Athangudi Tile Making in Tamilnadu, India
(https://www.doi.org/10.13189/cea.2023.110628)
Raammnath Ramanathan, Jayanthi Dhakshinamoorthi 3612

Performance of Clay Roofing Tile Waste as A Coarse Aggregate in Self Compacting Concrete
(https://www.doi.org/10.13189/cea.2023.110629)
Lekshmy Raghavan P., Nalanth N. 3632

Suitability of the Bioclimatic Architectural Design Concept and the Achievement of Thermal Comfort in the Building (Case Study of Baitul Musyahadah Mosque in Banda Aceh City)
(https://www.doi.org/10.13189/cea.2023.110630)
Mirza Fuady, Rizal Munadi, M. Andrian Kevin 3642

Spirit of Place toward Tourist Attraction at Maimun Palace
(https://www.doi.org/10.13189/cea.2023.110631)
Andalucia Andalucia, Nurlisa Ginting, Dwira N. Aulia, Dwi Lindarto H. 3651

Optimizing Phase Change Material on Opaque Building Envelope to Reach nZEB
(https://www.doi.org/10.13189/cea.2023.110632)
Mennatallah Hassan, Khaled Dewidar, Mostafa Ismail, Ashraf Nessim, Aly Abdelalim 3667

Smart Furniture Technologies Supporting Functional Employees' Needs in Workspace: A Case Study of Office Building in Egypt
(https://www.doi.org/10.13189/cea.2023.110633)
Aliaa A. yassin, Nanees El-Sayyad, Lamis ElGizawi 3681

Prediction of Bearing Strength for Cold-formed Steel Bolted Connection Using Artificial Neural Network
(https://www.doi.org/10.13189/cea.2023.110634)
Charles Norez S. Martir, Gilford B. Estores 3702

A Study of Permeability within Historical Area of Parakan Wetan, Central Java, Indonesia
(https://www.doi.org/10.13189/cea.2023.110635)
Ari Widyati Purwantiasning, Saeful Bahri, Zainal Mustapha, Raihan Nur Said 3723

The Semiotics Analysis on Crossroad and Grid System of Cakranegara City Indonesia
(https://www.doi.org/10.13189/cea.2023.110636)
Lalu Mulyadi, Lalu Achmad Juniarta 3739

Performance of Bacillus Subtilis Based Microbial Concrete in Acidic Environment
(https://www.doi.org/10.13189/cea.2023.110637)
Kunwar Dipendraditya, B.K Singh 3754

Navigating Environmental Risks: Exploring the Effects of Flood Hydrographs and Probable Maximum Floods in a Series Cascade Reservoir System - A Case Study
(https://www.doi.org/10.13189/cea.2023.110638)
Empung, I Gusti Bagus Sila Dharma, Mawiti Infantri Yekti, I Gusti Agung Adnyana Putera 3763

Comparing between the Flexible Pavement Design Methods Based on Durability and Cost-Effectiveness
(https://www.doi.org/10.13189/cea.2023.110639)
Salma Al Maghawri, Osama Ragab Ibrahim, Yara Gamil, Ruqaya Al Sheikh 3775

Use of Passive Cooling Strategies in Selected Mega-Churches within Lagos-Ogun Megacity, Nigeria
(https://www.doi.org/10.13189/cea.2023.110640)
I. C. Ezema, P. A. Ajanaku, O. A. Fulani, O. P. Johnson, M. U. Eyo 3789

Appraisal of Lighting Strategies for Achieving Environmental Sustainability in Selected Art Museums and Galleries in Nigeria
(https://www.doi.org/10.13189/cea.2023.110641)
A. B. Sholanke, F. J. Oyeyipo 3811

The Case Study of Using Geotextiles Reinforced Structure to Repair Mountain Road Landslide in Toraja - Indonesia
(https://www.doi.org/10.13189/cea.2023.110642)
Andri Irfan Rifai, Surya Kencana Bhakti, Susanty Handayani 3826

Java's South Beach Sand as a Noise-Absorbing Material Innovation
(https://www.doi.org/10.13189/cea.2023.110643)
Nur Rahmawati Syamsiyah, Rini Hidayati, Dhani Mutiari, Wisnu Setiawan, Afizah Ayob 3837

Mechanical Properties of Recycled Aggregate Concrete Affected by Chloride Diffusion in Submerged Condition
(https://www.doi.org/10.13189/cea.2023.110644)
Yeni Sesti Ariningsih, Devi Nuralinah, Eva Arifi 3849

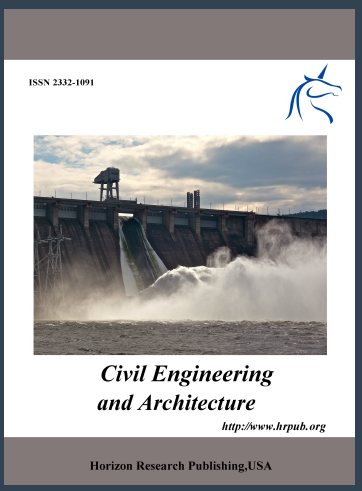
Towards Sustainable Mobility: A Focus on MaaS Adoption in Suburbs/Rural Areas and Cities
(https://www.doi.org/10.13189/cea.2023.110645)
Agbe Orva Stephen 3863

Efficiency in Design and Stability Assessment of Rigid and Semi-Rigid Reticulated Dome Structures
(https://www.doi.org/10.13189/cea.2023.110646)
Guy Oyéniran ADEOTI, Peace Sèna HOUNKPE, Ernesto Cabral HOUEHANOU, Omar Farouk DJIBRIL, Éric Adéchina ALAMOU 3877

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. Adel Francis	University of Quebec, Canada
Prof. Muhammad Saleem	University of Dammam, Saudi Arabia
Prof. Aloke 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. Giuseppe Lacidogna	Polytechnic University of Turin, Turin, Italy
Prof. Stefano Dal Pont	Université Grenoble Alpes (UGA), France
Prof. H. Murat Celik	Istanbul Technical University, Turkey
Prof. Luigi Alini	University of Catania, Italy
Dr. Chia-Hui Lin	National Taiwan University, Taiwan
Dr. Engin Eroglu	Duzce University, Turkey
Dr. Santina Di Salvo	University of Palermo, Italy
Dr. Hongyuan Liu	University of Tasmania, Australia
Dr. Amira Elnokaly	University of Lincoln, United Kingdom
Dr. Damian Beben	Opole University of Technology, Poland
Dr. Ying Wang	Deakin University, Australia
Dr. Daniela Jurasova	University of Zilina, Slovakia

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