



BUILT ENVIRONMENT JOURNAL

A faint, purple-tinted illustration of modern architectural structures, including a multi-story building with a grid facade and a more complex, angular structure, serves as a background for the journal title.

SPECIAL ISSUE 2025: SMART, SUSTAINABLE, AND RESILIENT URBAN AND BUILT ENVIRONMENTS: NAVIGATING THE FUTURE THROUGH INNOVATION AND DIGITAL TRANSFORMATION

The Built Environment Journal is pleased to present this special issue themed “Smart, Sustainable, and Resilient Urban and Built Environments: Navigating the Future through Innovation and Digital Transformation.” As the challenges facing cities and the built environment intensify—ranging from climate change and rapid urbanisation to societal resilience and the integration of emerging technologies—there is a growing imperative for innovative, cross-disciplinary research that shapes the future of our cities and communities.

This special issue brings together a diverse collection of original research articles, case studies, and conceptual papers that reflect the multifaceted nature of contemporary urban planning, construction, and engineering practice. Contributions span topics such as sustainable construction, smart city initiatives, urban and regional planning, disaster management, geospatial and artificial intelligence technologies, future mobility, landscape planning, and cultural heritage conservation.

In line with the themes of recent conferences and symposia, such as the Urban Planning Symposium 2024 and the International Conference on Built Environment and Engineering (IConBEE2024), this issue highlights papers that address:

- Smart Technologies for the Built Environment
- Sustainable Development and Societal Resilience
- Digitalisation and Intelligent Systems in Urban and Regional Planning
- Disaster Management and Future Mobility
- Landscape, Heritage, and Geospatial Solutions
- Governance, Management, and Policy for Urban Transformation

Our contributors present novel insights into policy frameworks, innovative design and planning practices, and advanced technological applications that support the transition towards smarter and more sustainable built environments. Selected papers also discuss the role of digital transformation and the integration of artificial intelligence and geospatial technologies in enhancing the resilience and adaptability of our urban systems.

By assembling this diverse body of work, we hope to inspire scholars, practitioners, and policymakers to engage with the pressing challenges and emerging opportunities within the built environment. We invite readers to explore these contributions, which collectively push the boundaries of knowledge and practice in creating cities and communities that are not only sustainable and smart but also resilient and inclusive.

GUEST EDITORS

Ts Dr Hafizah Mohd Latif

College of Built Environment, Universiti Teknologi MARA

Dr Iffah Farhana Abu Talib

College of Built Environment, Universiti Teknologi MARA

TPr Dr Noraini Omar Chong

College of Built Environment, Universiti Teknologi MARA

EDITORIAL BOARD

CHIEF EDITOR

Professor Sr Dr Zulkiflee Abd Latif

UiTM, Shah Alam, Selangor, Malaysia
zulki721@uitm.edu.my

MANAGING EDITOR

Sr Dr Mohd Azrai Azman

UiTM, Shah Alam, Selangor, Malaysia
mohdazrai@uitm.edu.my

SECTION EDITORS

Architecture, Design & Planning

Associate Professor LAr Ts Dr Alamah Misni

UiTM Selangor Branch, Puncak Alam Campus, Selangor, Malaysia
alama884@uitm.edu.my

Assoc. Prof. Wendy Guan Zhen Tan

Department of Civil Engineering and Environmental Sciences,
Western Norway University of Applied Sciences (*Høgskulen på Vestlandet*),
Bergen, Norway
wendy.guan.zhen.tan@hvl.no

Park & Amenity Management

Gs Ts Dr Rabiatal Adawiyah Nasir

UiTM, Shah Alam, Selangor, Malaysia
rabiatal9425@uitm.edu.my

Facility Management & Building Surveying

Sr Dr Nurul Nadiah Zainol

Faculty of Built Environment, UiTM, Shah Alam, Selangor, Malaysia
nadiahzainol@uitm.edu.my

Surveying Science & Geomatics

Associate Professor Sr Dr Aekbal Salleh

Faculty of Built Environment, UiTM, Shah Alam, Selangor, Malaysia
aekbal@uitm.edu.my

Gs Dr Nabilah Naharudin

Faculty of Built Environment, UiTM, Shah Alam, Selangor, Malaysia
nabilahnaharudin1290@uitm.edu.my

Construction Management

Assoc. Prof. Ts Dr Abdul Rahimi Abdul Rahman

Faculty of Civil Engineering and Technology, Universiti Malaysia Pahang Al-Sultan Abdullah, Kuantan, Pahang, Malaysia
arahimirahman@umpsa.edu.my

Ts Dr Shaza Rina Sahamir

Faculty of Built Environment, UiTM, Shah Alam, Selangor, Malaysia
shaza_rina@uitm.edu.my

Quantity Surveying

Sr Dr Noor Akmal Adillah Ismail

Faculty of Built Environment, UiTM, Shah Alam, Selangor, Malaysia
noorakmal@uitm.edu.my

Sr Dr Ahmad Faiz Abd Rashid

Faculty of Built Environment, UiTM Sarawak Branch, Samarahan Campus, Sarawak, Malaysia
afaiz@uitm.edu.my

Sr Dr Celine Lee

Faculty of Society & Design, Bond University, Robina, Australia
celee@bond.edu.au

Estate Management

Sr Dr Nor Nazihah Chuweni

Faculty of Built Environment, UiTM Perak Branch, Seri Iskandar Campus, Perak, Malaysia
norna692@uitm.edu.my

COPY EDITOR

Ts Dr Mariam Felani Shaari

UiTM Selangor Branch, Puncak Alam Campus, Selangor, Malaysia
mariamfelani@uitm.edu.my

ASSOCIATE SECTION EDITORS

Ts Dr Nurul Amira Abd Jalil

UiTM Selangor Branch, Puncak Alam Campus, Selangor, Malaysia

Dr Mohamad Hanif Abdul Wahab

UiTM Selangor Branch, Puncak Alam Campus, Selangor, Malaysia

Dr Muhammad Hakim Danial

UiTM Selangor Branch, Puncak Alam Campus, Selangor, Malaysia

Dr Che Bon Ahmad

UiTM, Shah Alam, Selangor, Malaysia

Dr Nadia Kamaruddin

UiTM, Shah Alam, Selangor, Malaysia

Dr Ani Maslina Saleh

UiTM, Shah Alam, Selangor, Malaysia

Sr Dr Hafiszah Ismail

UiTM, Shah Alam, Selangor, Malaysia

Dr Zalina Samadi

UiTM Selangor Branch, Puncak Alam Campus, Selangor, Malaysia

ASSOCIATE COPY EDITORS

Nor Hazirah Hasri

UiTM Selangor Branch, Puncak Alam Campus, Selangor, Malaysia

Rashidah Jimi Sham

UiTM Selangor Branch, Puncak Alam Campus, Selangor, Malaysia

Ts Muhammad Redza Rosman

UiTM Perak Branch, Seri Iskandar Campus, Perak, Malaysia

Ts Azlan Ariff Ali Ariff

UiTM Selangor Branch, Puncak Alam Campus, Selangor, Malaysia

Ts Liyana Mahfuzah Mohd For

UiTM Selangor Branch, Puncak Alam Campus, Selangor, Malaysia

Azri Ibrahim

UiTM Selangor Branch, Puncak Alam Campus, Selangor, Malaysia

Dzul Fadli Asraf Dzul-Kifli

UiTM Selangor Branch, Puncak Alam Campus, Selangor, Malaysia

Muhammad Firdaus bin Mohamed Rafie

UiTM Selangor Branch, Puncak Alam Campus, Selangor, Malaysia

Ts Kamal Mohd Idris

UiTM Selangor Branch, Puncak Alam Campus, Selangor, Malaysia

Ar Siti Hajar Mohd Shahrain

UiTM Selangor Branch, Puncak Alam Campus, Selangor, Malaysia

Abu Dzar Samsudin

UiTM Selangor Branch, Puncak Alam Campus, Selangor, Malaysia

INTERNATIONAL ADVISORY BOARD

Professor Dr. Low Sui Pheng

Department of The Built Environment, College of Design and Engineering,
National University of Singapore, Singapore

bdglowsp@nus.edu.sg

Professor Dr. Biswajeet Pradhan

School of Civil and Environmental Engineering,
University of Technology Sydney, Australia

Biswajeet.Pradhan@uts.edu.au

Professor Dr. Mehmet Çetin

Faculty of Architecture, Department of City and Regional Planning,
Ondokuz Mayıs University, Türkiye

mehmet.cetin@omu.edu.tr

Professor Dr. Clinton Aigbavboa

Department of Construction Management and Quantity Surveying,
University of Johannesburg, South Africa

caigbavboa@uj.ac.za

Professor Dr. Helmi Zulhaidi Mohd Shafri

Department of Civil Engineering, Faculty of Engineering,
Universiti Putra Malaysia, Malaysia

helmi@eng.upm.edu.my

Professor Sr Ts Dr Zulhabri Ismail

Universiti Teknologi MARA, Malaysia

zulhabri@uitm.edu.my

Professor Dr Mohamad Nidzam Rahmat

Universiti Teknologi MARA, Malaysia

mnidzam676@uitm.edu.my

Professor Sr Ts Dr Abdul Hadi Nawawi

Universiti Teknologi MARA, Malaysia

abdul274@uitm.edu.my

CURRENT ISSUE: Year 2025 Vol. 22 (Special Issue)
PUBLISHED DATE: 31 July 2025
PUBLICATION TYPE: Online
e-ISSN: 2637-0395

© Penerbit UiTM, UiTM 2025
<https://uitm.edu.my/index.php/en/disclaimer-copyright>

License



Built Environment Journal (BEJ) is licensed under a Creative Commons Attribution 4.0 International License
Permissions beyond the scope of this license may be available at creativecommons.org.

LIST OF ARTICLES

- | | |
|---|---------|
| THE DETERMINATION STRENGTH OF MARINE CLAY STABILISED WITH QUICKLIME | 1 - 14 |
| Ghazali Ismail*, Ismacahyadi Bagus Mohamed Jais, Harris Ramli, Mohd Khairolden Ghani
DOI: 10.24191/bej.v22iSI.6466 | |
| THE ELDERLY-FRIENDLY HOUSING NEIGHBOURHOOD PREFERRED FEATURES BY GENERATIONS IN MALAYSIA | 15 - 25 |
| Hafiszah Ismail*, Nur Lesya Firsya Johaimi Ling, Maszuwita Abdul Wahab
DOI: 10.24191/bej.v22iSI.6475 | |
| COMMUNITY PERSPECTIVE AND CHALLENGES OF HERITAGES BUILDINGS CONSERVATION IN URBAN MALAYSIA | 26 - 36 |
| Ezyana Anyzah Marmaya*, Rohana Mahbub, Faudzi Muhammad, Mas Ayu Mohd Tahir
DOI: 10.24191/bej.v22iSI.6476 | |
| A COMPARATIVE ANALYSIS OF RECONSTRUCTIVE CRIME SCENE | 37 - 53 |
| Muhamad Fuad Emri, Lau Chong Luh*, Mohamad Hezri Razali, Ahmad Norhisyam Idris, Saiful Aman Sulaiman, Khairulnizam M. Idris, Muhammad Nasri Abdul Ghani
DOI: 10.24191/bej.v22iSI.6478 | |
| DETERMINANT OF ESCALATING CONSTRUCTION MATERIAL COSTS IN THE POST-PANDEMIC PERIOD: CONTRACTOR'S PERSPECTIVE | 54 - 62 |
| Nuramira Farhana Azahar, Raja Rafidah Raja Muhammad Rooshdi*, Noor Akmal Adillah Ismail, Mohd Arif Marhani, Shaza Rina Sahamir, Wan Nur Aifa Wan Azahar, Rihana Mohd Yunus
DOI: 10.24191/bej.v22iSI.6484 | |

DETERMINING LAND SUITABILITY FOR NEW PRIMARY SCHOOLS IN SEREMBAN, MALAYSIA: AN EXPLORATORY STUDY WITH THE GIS-MCDA APPROACH 63 - 71

Amirul Asraf A Renzi, Abdul Rauf Abdul Rasam*, Saiful Anuar Jaafar @ Ibrahim, Daniel Ugih anak Echoh
DOI: 10.24191/bej.v22iSI.6480

CHALLENGES OF FACILITIES MANAGEMENT IN MANAGING INTENSIVE GREEN ROOFS IN HIGH-RISE RESIDENTIAL 72 – 89

Nurul Amirah Khairuddin, Wan Zuriea Wan Ismail*, Hikmah Kamarudin, Mohd Shahir Mohamad Yusof, Mohammad Zulfazdley Mohd Zulkifli Cheng
DOI: 10.24191/bej.v22iSI.6487

FACILITIES MANAGEMENT PRACTICE IN TRADITIONAL PONDOK INSTITUTION IN MALAYSIA 90 - 101

Muhammad Shahrol Hafiz Ibrahim, Yuhanis Abdul Talib*, Nor Aini Salleh, Mariah Awang, Pangiran Shafiq Pangiran Julaini
DOI: 10.24191/bej.v22iSI.6494

RIISING ABOVE THE WATERS: PIONEERING FLOOD RESILIENT HOUSING DEVELOPMENT STRATEGIES 102 - 121

Nur Khairiyah Mohammad*, Maryanti Mohd Raid, Robiah Suratman1, Zafirah AB Muin, Aminah Mohsin, Amirul Haffiz Ariff, Mariney Mohd Yusoff, Nor Shahida Azali
DOI: 10.24191/bej.v22iSI.6495

NATURAL AMENITIES PREFERENCE IN CONDOMINIUM SELECTION BASED ON REAL ESTATE AGENT’S PERSPECTIVE IN PENANG 122 - 134

Siti Maryam Abdul Wahab*, Ernieza Suhana Mokhtar, Mohd Hasrol Haffiz Aliasak, Noradila Rusli, Nur Fatin Mohd Yusoff
DOI: 10.24191/bej.v22iSI.6497

INTEGRATING BIOPHILIC DESIGN IN MULTI-GENERATIONAL HOUSING: A CONCEPTUAL FRAMEWORK FOR ENHANCING WELL-BEING AND QUALITY OF LIFE 135 - 153

Che Muhamad Hanif Che Wil @ Ismail, Hafiszah Ismail*

DOI: 10.24191/bej.v22iSl.6498

EVALUATION OF AIR QUALITY IN THE SURROUNDING COMMUNITY DUE TO LIMESTONE BLASTING 154 - 170

Emma Marinie Ahmad Zawawi*, Wan Hasmirah Wan Ibrahim, Naziah Muhammad Salleh, Badrul Hisham Daud

DOI: 10.24191/bej.v22iSl.6499

IDENTIFYING THE ACTIVITY – BASED HAZARDS INVOLVED IN THE TERRALINK CONSTRUCTION METHOD 171 - 183

Muhamad Afiq Al-Amin Mohd Kabri, Izatul Farrita Mohd Kamar*, Husrul Nizam Husin @ Husain, Wahyudi Putra Utama

DOI: 10.24191/bej.v22iSl.6500

MINIMISING RISKS OF WASTAGE IN MODULAR CONSTRUCTION 184 - 198

Siti Nurmarlina Kamaruddin, Farrah Zuhaira Ismail*, Md. Asrul Nasid Masrom, Muhammad Hanafi Zulkifli

DOI: 10.24191/bej.v22iSl.6504

ENVIRONMENTAL ISSUES AFFECTING SUSTAINABLE DEVELOPMENT IN THE CONSTRUCTION INDUSTRY 199 - 213

Nurul Huda Muhamad, Ani Saifuza Abd Shukor*, Mohammad Fadhil Mohammad

DOI: 10.24191/bej.v22iSl.6957

A NEW FRAMEWORK FOR CLASSIFYING MOSQUE ENERGY MODELS 214 - 226

Nurul Asra Abd Rahman*, Syahrul Nizam Kamaruzzaman, Farid Wajdi Akashah, Zainab Mohmad Zainordin, Zarina Alias

DOI: 10.24191/bej.v22iSl.6956

LOCAL COMMUNITY PERSPECTIVE ON AUTHENTICITY AT THE 'STREET OF HARMONY', GEORGE TOWNS WORLD HERITAGE SITE, PENANG 227 - 240

Aidatul Fadzlin Bakri*, Nurulhusna Qamaruz Zaman, Zalina Samadi

DOI: 10.24191/bej.v22iSl.5451

ASSESSING PUBLIC TRANSPORTATION ACCESSIBILITY FOR RURAL COMMUNITIES: THE CASE OF KAMPUNG JERAM, PASIR PUTEH, KELANTAN 241 - 252

Na'asah Nasarudin*, Raja Norashekin Raja Othman, Yusfida Ayu Abdullah, Marlyana Azzyati Marzukhi, Baizura Jamaluddin, Ishak Che Abdullah

DOI: 10.24191/bej.v22iSl.5453

MAINTENANCE PLANNING FOR MASJID KARIAH IN MALAYSIAN PERSPECTIVE: A SYSTEMATIC LITERATURE REVIEW AND PRISMA METHOD 253 - 265

Azhar Yusof*, Mohamad Ridzuan, Faridah Ismail, Siti Fatimah Hashim

DOI: 10.24191/bej.v22iSl.5454

A COMPARATIVE EVALUATION OF PEDESTRIAN FACILITIES OUTSIDE SCHOOLS: CURRENT CONDITIONS AGAINST DESIGN GUIDELINES 266 - 278

Naimah Osman*, Na'asah Nasrudin, Yusfida Ayu Abdullah

DOI: 10.24191/bej.v22iSl.5457

REPURPOSED NEGLECTED HERITAGE BUILDING INTERIOR ARCHITECTURE FOR COMMERCIALISATION: ISSUES AND CHALLENGES 279 - 295

Siti Nur Nabilah Sa'ari, Muhammad Adam Che Yusof*, Marina Mohd Nor

DOI: 10.24191/bej.v22iSl.5458

IMPLEMENTATION OF URBAN CATALYST INTO HERITAGE SPACE: CASE STUDY: SUNGAI LEMBING 296 - 308

Nur Qaisarah Zulaikah Mohd Nor, Mohamad Taufek Mohd Hanapiah*

DOI: 10.24191/bej.v22iSl.5459

DEVELOPMENT OF FRAMEWORK FOR MALAY RESERVED LAND IN MALAYSIA 309 - 324

Mohammad Firdaus Ishak*, Abdul Hadi Nawawi, Mohd Hasrol Haffiz Aliasak, Siti Hafsa Zulkarnain, Siti Fatimah Hashim
DOI: 10.24191/bej.v22iSl.5461

THE TOURISM VALUE OF ARCHEOTOURISM SITE AS BEING PERCEIVED BY THE LOCAL VISITORS AT GUA PASOH, NEGERI SEMBILAN 325 - 338

Ainna Syifaa Abu Khari, Nor Hanisah Mohd Hashim*
DOI: 10.24191/bej.v22iSl.5462

SHAPING FUTURE PLANNERS: INSIGHTS FROM SULAM'S ENGLISH TEACHING FOR ABORIGINAL SCHOOL CHILDREN IN KAMPUNG PUTRA 339 - 355

Mohamad Taufek Mohd Hanapiah, Raziah Ahmad*, Muhammad Adam Che Yusof, Eugenie Anyau
DOI: 10.24191/bej.v22iSl.5463

BENCHMARKING ANALYSIS FOR SUSTAINABILITY PRACTICES OF GREEN PORT INITIATIVES AT NORTHPORT (MALAYSIA) BERHAD WITH OTHER SELECTED PORT IN URBAN FUTURE DEVELOPMENT 356 - 371

Iznoorhakmal Ibrahim, Siti Ayu Jalil*, Abdul Rauf Abdul Rasam
DOI: 10.24191/bej.v22iSl.5470

THE ROLE OF TECHNOLOGY IN PROMOTING SUSTAINABLE CULTURE HERITAGE TOURISM IN JIANGXI, CHINA 372 - 385

Zhou Shiwan, Raja Norashekin Raja Othman*, Ahmad Nazrin Aris Anuar, Wong Tongyun
DOI: 10.24191/bej.v22iSl.5471

HOUSING PROVISION IN TRANSIT-ORIENTED DEVELOPMENT (TOD) FOR ADVANCING SUSTAINABLE DEVELOPMENT GOAL 386 - 398

Suraya Badaruddin, Marlyana Azyyati Marzukhi*, Siti Mazzuana Shamsuddin, Muhammad Hakim Danial, Hayati Sari Hasibun, Chrisna T Permana

DOI: 10.24191/bej.v22iSl.5561

EXPLORING URBAN LIVABILITY: THE KEY PERFORMANCE INDICATORS OF WALKABILITY 399 - 414

Siti Aisyah Zakaria, Marlyana Azyyati Marzukhi*, Aidatul Fadzlin Bakri

DOI: 10.24191/bej.v22iSl.5641

LOOPING SYSTEM THEORY IN LAND USE AND MENTAL HEALTH DURING A PANDEMIC OUTBREAK 415 - 427

Nur Masitah Ghazali, Marlyana Azyyati Marzukhi*, Oliver Ling Hoon Leh

DOI: 10.24191/bej.v22iSl.5651