

# Table of Contents

## Preface

## Chapter 1: Architecture and Urban Planning in the Context of Built Environment

<b>Challenges of Green Highway Concept towards Implementation of Green Highway</b> F. Najwa Mohd Nusa, I.R. Endut and S.Z. Ishak	3
<b>The Application of Principles of Green Building in Traditional Housing in Iraq</b> M. Qays Oleiwi, A. Ali, N. Utaberta and M. Surat	7
<b>Green Facade (Vertical Greening): Benefits and Threats</b> M. Rakhshandehroo, M.J. Mohd Yusof and M. Deghati Najd	12
<b>Living Wall (Vertical Greening): Benefits and Threats</b> M. Rakhshandehroo, M.J. Mohd Yusof and R. Arabi	16
<b>Parametric Visualization Tools for Land Use Planning towards Improved Green City</b> F.U. Sjarifudin	20
<b>Green Architecture and Islamic Architecture: The Islamic Arabic City and the Traditional Islamic House</b> A. Ali, N. Utaberta, M. Surat and M. Qays Oleiwi	24
<b>The Genius Idea of Using Local Material on Javanese House Architecture</b> Hardiyati, J. Prijotomo and M. Rachmawati	28
<b>Green Agenda: A Socio-Cultural Response to Sick Building Syndrom (SBS) and Building Related Illness (BRI) in African Domestic Architecture</b> E. Eghosa Noel and A.A. Babajide	32
<b>A Critical Analysis of 20<sup>th</sup> Century Modern Terrace Housing in Malaysia</b> N. Utaberta, N.F. Elina, M.T. Mohd Rasdi and M.A. Othuman Mydin	36
<b>Kuala Lumpur Chinatown Pre-War Shophouses (Adaptive Re-Use) and City Image</b> Y.S. Toong and N. Utaberta	40
<b>Opportunity for New Entrepreneurial Ventures from Sustainable Public Open Space Adaptive Used Implementation (Case Study: Taman Fatahillah, Jakarta Old City)</b> W. Hary Susilo	44
<b>Post Modern Cross Comparative Analysis on the Mosque Ornamentation in Malaysia: (A Case Study of Charles Jencks)</b> N. Utaberta, A.N. Handryant and M.A.O. Mydin	48
<b>Understanding the Potential of Modern Community Center as Social Architectural Spaces in Malaysia</b> N. Utaberta and N. Spalie	52
<b>Evaluating the Customs and Rituals of the Malay Culture and its Contribution on Space Design in Modern Terrace House</b> N. Utaberta, N.F. Elina and M.T. Mohd Rasdi	56
<b>Heritage Buildings Conservation Issues of Shophouses in Kuala Lumpur Chinatown</b> Y.S. Toong and N. Utaberta	60
<b>Changing Transportation System in University Campus by Cycling and its Impact on Socio-Cultural Characteristics</b> S. Vosoughi, M.J. Mohd Yusof and N. Baharuddin	64
<b>The Transformation of the Traditional Balinese House in Tourist Villages: Maintaining the Culture and Obtaining Economic Benefit</b> I.D.G.A.D. Putra, M. Lozanovska and R. Fuller	68
<b>Significance of the Application of Universal Design in Mosque Buildings in Malaysia</b> M. Dabbagh Niya, N. Utaberta and S. Maulan	72
<b>Unique Elements of the Traditional and Vernacular Masjids in Malaysia; Traditional Elements Acquainting Practical Sustainability</b> R. binti Othman, L.H. Mahamod and S. Aripin	76

<b>Value-Based Architectural Conservation Practice as an Alternative Solution to Sustainability Problems</b> P. Praptidita Suratman and Denny	80
<b>The Conservation of Balinese Traditional Architecture: The Integration of Village Pattern and Housing Pattern in Indigenous Villages</b> N.M. Yudiantini and D. Jones	84
<b>The Aspects of Visual Privacy and Interior Design Elements of Malay Dwelling (MD) in Melaka</b> N.H. binti Mohd Razali and A. bin Talib	88
<b>Historic Urban Areas in Heritage Tourism: Kuala Lumpur Historic City Centre, a Potential Asset</b> M. Deghati Najd, N.A. Ismail, M.Y. Mohd Yunos and S. Maulan	93
<b>Post Occupancy Evaluation of Putra Perdana Park</b> N. Talib, N. Mohamed, M.K. Hussein and S.F. Abd Shukor	97
<b>Measuring Ecological Values of Green Open Space Using Normalized Different Vegetation Index Parameter</b> R.B. Budiyaniti	101
<b>The Characteristics of Residents at Low Cost Housing in Jakarta - Indonesia and their Culture to Green Principles</b> N. Nurdiani	105
<b>Visual Landscape Management of Scenic Peucang Island and Ujung Kulon Peninsula in Ujung Kulon National Park, Indonesia</b> I. Krisantia and N.I. Mangunsong	109
<b>Transport Policy in the Klang Valley, Malaysia: The Sustainability Agenda</b> R.N. Raja Ariffin, R. Khairi Zahari and M. Tumin	123
<b>Green Infrastructure Development in Sustainable Water Resources Management System</b> Q. Uniaty	127
<b>Attributes and Characteristics of Place Attachment</b> B. Karsono and J. Wahid	132
<b>Brigdeheader Space for Dwell in Jakarta</b> Deni and Salwin	136
<b>Identifying Functional Factor for Developing the Community Centre in Kuala Lumpur</b> N. Jafari and N. Utaberta	141
<b>Sustainability is Important Part of the Identity in the Dimension of Regionalism Architecture</b> M.I. Hidayatun, J. Prijotomo and M. Rachmawati	145
<b>The Integration of Universal Design in Interior Design as a Green Design Approach for Diverse Users in Malaysia</b> N. Mansor, R. Ibrahim and A.R. Awang	149
<b>Importance of Preserving the Non-Use Value of the Cultural Heritage: Case Study of George Town, Penang World Heritage Site</b> N.F. Mohd Ariffin, Y. Ahmad and A. Alias	153
<b>A Study on African Vernacular Mosque: A Lesson from Tradition</b> M.M. Osman, B. Hassanpour and N. Utaberta	157
<b>Perceived Pedestrian Environment Functional Factors which are Associated with Walking in Tropical University Campus</b> B. Afsar, M.Y. Mohd Yunos, M.A. Othuman Mydin and M.J. Mohd Yusof	161
<b>Preference on Social Spaces in High Density Condominiums in Malaysia</b> P. Amini Fard, M.K. Mohd Shariff, M.Y. Mohd Yunos and M.A. Othuman Mydin	165
<b>Spiritual Values in Urban Residential Garden: A Mitos or Reality?</b> N.A. Ismail and M.Y. Mohd Yunos	168
<b>Cross-Cultural Ethnic Identity in Urban Residential Area: An Epistemology</b> N.A. Ismail and M.Y. Mohd Yunos	172
<b>Evaluating Mobility in Marketing Places for Entrepreneurial Disabled, Case Study: Central Market Area Kuala Lumpur</b> B. Fardnia, N. Abdul Rahman, M.Y. Mohd Yunos and M.A. Othuman Mydin	176
<b>Assessing the Residents' Preference of Awareness Regarding Urban Agriculture at Rooftop Garden</b> N. Jafari, M.Y. Mohd Yunos, M.A.O. Mydin and O. Mohd Tahir	180

<b>Landscape Architects' Perspective on Public Participation Technique in Landscape Planning and Design: A Case Study of Kuala Lumpur</b> M.Y. Mohd Yunos, N.K. Mohd Isa, J. Hillier and N.A. Ismail	184
<b>Non-Structural Elements of the Traditional Malay Houses in the East Coast and Northern Peninsular Malaysia: Similarities and Differences</b> M. Ismail, A.H. Abu Bakar, N.F. Abas, R. Roosli and S. Abdullah	188
<b>Considering Ephemeral Monuments: Towards a Greener Architectural Theory</b> R. Budi Santosa, J. Prijotomo and M. Rachmawati	192
<b>Legal Provision Allied to Conservation of Heritage Buildings in Penang</b> M.A. Othuman Mydin, S. Jasme, M.N. Mohd Nawi, N. Utaberta and M.Y. Mohd Yunos	198
<b>Landscape Heritage Conservation along Sanur Beach Borderline in Bali: Perspectives of the Local Government and Visitors</b> T. Anggraini Prajnowrdhi, S. Karuppannan and A. Sivam	202

## **Chapter 2: Green Building Materials**

<b>Appraisal of Thermal Comfort of Paper Waste as Wall Element in Building</b> A. Fikriarini Muchlis, A.D. Aziiz, M. Ishomuddin and A. Barata	209
<b>Residual Compressive Strength of Lightweight Foamed Concrete after Exposure to High Temperatures</b> M.A. Othuman Mydin, M.Y. Mohd Yunos, M.N. Mohd Nawi and A.I. Che Ani	213
<b>Durability Performance of Oil Palm Shell Lightweight Concrete as Insulation Concrete</b> E. Serri, M.Z. Sulieman and M.A. Othuman Mydin	217
<b>Green Materials Comparison of Sawdust and Coconut Fiber Acoustical Waffle Panel</b> E. Setyowati, G. Hardiman and S.T. Atmaja	221
<b>The Influence of Compressive Strength of EPS Concrete Using Fiberglass with Curing and Non Curing Treatment</b> I. Hidayat and J.D. Halim	226
<b>Thermal Properties of Foamed Concrete with Various Densities and Additives at Ambient Temperature</b> S. Ganesan, M.A. Othuman Mydin, M.Y. Mohd Yunos and M.N. Mohd Nawi	230
<b>The Mechanical Performance of Waste Concrete Ash as Cement Replacement Materials in Concrete</b> A.H. Husain and N.F. Abas	234
<b>Polyacrylate Modified Binder for Sustainable Asphalt Pavement Performances Using Superpave Mix Design</b> W.A. Ismail, I.R. Endut and S.Z. Ishak	238
<b>Compressive Strength Improvement of Stabilized Peat Soil by Pond Ash - Hydrated Lime Admixture</b> Z. Md Yusof, S.N. Mohd Harris and K. Mohamed	242
<b>The Potency of Waste Paper "Egg Tray" as a Noise-Reduction Material</b> E. Setiyowati and I. Nasrullah	246
<b>Prefab Materials for Self Build Housing System in Malaysia</b> W.S. Wan Mohamed, Y. Ahmad, N.F. Nik Mat and A. Azlan	250

## **Chapter 3: Technologies and Decisions for Providing of Environmental Sustainability**

<b>Affordable Onsite <i>E. coli</i> Testing Device for Community Engagement</b> A. Kikuchi, M. Syafinas, Romaidi, A.M. Mahmood, W.E. Putra, B. Muchtaromah, E.S. Savitri, I.A.I. Nangkula Uaberta, M.I. bin Abd Aziz and M. Musa	257
<b>Preliminary Study on Climate Change Biomitigation by Improving CO<sub>2</sub> Removal and CO<sub>2</sub> Utilization Efficiency Using Microalgae Culture in Photobioreactor</b> A. Nugroho, E. Kardena, D.I. Astuti and K. Dewi	261
<b>Developing Low-Carbon Awareness and Low-Carbon Behavior Framework for Tackling CO<sub>2</sub> Emission in a City</b> N.J. Abdul Aziz, M.Y. Mohd Yunos, N.A. Ismail and M.A. Othuman Mydin	265

<b>To Develop a Greener Recycled Paper Production by Determining Potential Environmental Impacts through Life Cycle Perspective</b> N.F. Mohd Ghazali, S.Y. Wong and A. Hamzah Sharaai	269
<b>Facilitate Recycle Activities via ICT and Physical Approach</b> W.N. Wan Ab Rahman and J. Ng Yi Shien	273
<b>Optimizing Multi Response Green Machining Using Taguchi Method Based on Grey Relational Analysis</b> M.I. Mustajib, T. Prasetyo, H.A. Ilhamsah, R. Soenoko and Sugiono	277
<b>Towards a Green Quail Meat Production through Life Cycle Perspective</b> A. Hamzah Sharaai, M.Z. Mat Zainol and K.I. bin Muhammad	282
<b>Preparation Model of Allergen Inhalant Reduction Level on House Dust in the Rural Based Built Environment Using Structural Equation Modeling Technique</b> A. Rofieq	286
<b>Carbon-Capability Framework for Malaysia: Towards Encouraging Low-Carbon Community Lifestyles</b> A.S. Abas, M.Y. Mohd Yunos, N.K. Mohd Isa, N.A. Ismail and F. Abdul Aziz	290
<b>Fish Distribution and Composition of Kelantan River Systems, Kelantan, Malaysia</b> R. Hashim, M.R.P. Azlan, W.M.A. Mohd Zainuddin, S.A. Jusoh and A.S.R. Md Sah	294
<b>The Influence of Land Use in Controlling Potential Damage of the Upper Brantas River Basin</b> S. Harini	298
<b>Community Participation in Management of Mangrove Villages with Renewable Energy in Teluk Naga District of Tangerang</b> A. Gunarsa, I. Krisantia and N.I. Mangunsong	302
<b>Traditional and Local Ecological Knowledge for Land Use Mapping</b> N. Mohd Ayob, N. Ismail and T. Masron	306
<b>Land Use Diversion in the Tourism Area at Sub Watershed Konto Hulu</b> T. Kusumadewi	310
<b>An Analysis of Grey Water Treatment System in the National University of Malaysia Mosque</b> N. Utaberta, A.N. Handryant and M.A. Othuman Mydin	313
<b>The Application of Rain Water Harvesting Method on a Low Income Flat in Cengkareng, Jakarta</b> Y. Mariana, J. Ngadinata, R. Katili and R. Hendarti	317
<b>Maintenance Performance Quadrant for Rainwater Harvesting System</b> H. Yahaya, I. Ismail, A.I. Che Ani, S. Johar and M. Surat	321
<b>Green Renewable Energy – Risk Need to Be Tackled in Going Green for Air Transportation</b> H. Mohd Noh, G.A. Rodrigues and N.A. Abdul Rahman	325
<b>Daylighting Strategies in Iranian Vernacular Residential Buildings in Hot and Dry Climate</b> E. Maghsoudi Nia, T. Hajihasani, M.Y. Mohd Yunos and N. Abdul Rahman	329
<b>A Biomimicry Approach on an Architectural Design and Planning Case Study: The Application of Photovoltaic and Green Roof Technologies</b> R. Hendarti and Y. Mariana	333
<b>Integration PV and Wind into the Grid to Supply Electricity in Palu (Indonesia)</b> S. Dewi	337
<b>Soil Arthropods Diversity in Manggis Natural Reserve and Coffee Agroforestry System Kediri Regency, Indonesia</b> D. Suheriyanto, Soemarno, B. Yanuwadi and A.S. Leksono	341

## **Chapter 4: Monitoring and Assessment of Facilities, Disaster Prevention**

<b>Condition Survey Protocol: A System for Building Condition Assessment</b> A.I. Che-Ani, I. Ismail, S. Johar, M.Z. Abd-Razak and N. Hamzah	347
<b>Flat Roof Defect: Preliminary Condition Survey for Water Ponding Monitoring</b> A.E. Hashim, M.I.F. Maruzuki, N. Mohd Tawil, M.Z. Abd-Razak and A.I. Che-Ani	351
<b>Building Defects or Building Failures: Misconception and Understanding</b> S. Abdullah, E. Iskandar and A. Abdul Razak	355

<b>Common Defects on Floating Mosque: Tengku Tengah Zaharah Mosque, Kuala Ibai, Kuala Terengganu</b>	
E.M. Mazlan, A.I. Che-Ani, A. Mohd Sarman, M.A. Othuman Mydin and I.M.S. Usman	359
<b>The Conceptual Framework of Building Performance-Risk Indicators (PRI) for Buildings Users in Higher Education Institutions</b>	
N. Khalil, S.N. Kamaruzzaman, A.H. Nawawi, H.N. Husin and A.E. Hashim	363
<b>Well-Being of Malaysia's Disaster-Affected Coastal Communities</b>	
R.K. Zahari, R.N. Raja Ariffin, M.Z. Asmawi and A.N. Ibrahim	367
<b>Sustainable Urban Drainage System to Land Use/ Land Cover Change in Samarinda, Indonesia</b>	
E.S. Butar Butar, A. Sabar and M. Handajani	371
<b>Dynamic Analysis on PCI Girder Bridge</b>	
M. Suangga and Santi	375
<b>Development of Microcontroller Based Potentiometric Transduction Circuit for a Continuous Fluid Level Sensor</b>	
F.N. Mohd Nusa, M.F. Abdullah, S. Setumin, S. Mohd Firdaus, A.I. Che Ani and N. Mohd Tawil	379