

# MAISARAH BT ALI



- KULLIYAH OF ENGINEERING
- IIUM Gombak Campus
- Email address: [maisarah@iium.edu.my](mailto:maisarah@iium.edu.my)

## المؤهل العلمي

- Ph.D in Engineering
- Master in Engineering
- Bachelor in Civil Engineering
- Diploma in Civil Engineering

## مسؤوليات التدريس

BUILDING FACILITY MANAGEMENT	2018/2019 2019/2020
CIVIL ENGINEERING DESIGN LAB	2018/2019
ELECTIVE I-CIVIL ENGINEERING DESIGN LAB	2019/2020 2020/2021
INTERGRATED DESIGN PROJECT	2018/2019 2019/2020 2020/2021

## المشاريع البحثية

### In Progress

- 2019 - Present** Study on Rainfall Intensity Duration Threshold Induced Landslides Occurrence in Peninsular Malaysia
- 2019 - Present** Investigation on the Strength Improvement and Microstructure Analysis of Concrete Incorporated Manufactured Sand (M Sand) As Fine Aggregate Replacement
- 2016 - Present** Characterization of Malay Architectural Components through BIM-Based Modelling and Semantic Enrichment for Urban Buildings
- 2015 - Present** The Preparation of Feasibility Study for the Establishment of an International Islamic University in Afghanistan

### Completed

- 2016 - 2019** Tool for Engineering Laboratory Assessment in Malaysian Universities
- 2016 - 2016** Malaysian Carbon Reduction and Environmental Sustainability Tool (MYCREST) Assessor Refreshment Course
- 2016 - -1** Kajian Berkenaan Pelaksanaan Penilaian Mycrest Secara Mandatori Untuk Projek-Projek Bernilai RM100 Juta Dan Ke Atas

- 2015 - 2015** Perkhidmatan "Editing 4 Buah Buku Malaysian Carbon Reduction and Environmental Sustainability Tool (MyCREST) Setelah Pelaksanaan Proof Reading"
- 2013 - 2018** Virtual Kuala Lumpur Mosque Content Using Mixed Interactive Mobile Applications Platform
- 2012 - 2016** New Method of Quantity Measurement for Heritage Conservation Works
- 2012 - 2015** Numerical Model and Simulation of Thermal Characteristics in Hospitals and Its Impact to the Mould Growth, Concentration and Distribution
- 2010 - 2014** A New Method for Assessing Fire Risk of Heritage Building
- 2010 - 2011** Functionalities of 4D Virtual Construction Simulation Tool in Current Practices of Project Control in Malaysia.
- 2008 - 2012** Statistical Analysis of Cyclic Performance of Fire Resistant Doorset in Shopping Centre in Malaysia
- 2008 - 2013** Numerical Modeling of Thermal Load Characteristic of the Data Centre Room and Equipment and Optimization of the Performance of Cooling System
- 2007 - 2008** An Assessment of Recycled and Volatile Organic Compound (VOC) Content in Interior Construction Materials for Achieving Green Building in Malaysia
- 2007 - 2011** Optimization of the Cooling Systems for Data Centres for the Tropical Environments
- 2006 - 2014** A Thermal Performance Analysis and Storage Potential Study of A Proposed Waste Material Integrated Heat Sink Process in Ground Floor Slab and Outdoor Pavement For Residences In Malaysia
- 2006 - 2009** Integration of Environmental Simulation and Analysis in A Virtual Reality Framework: The Assessment of Urban Masterplan And Outdoor Spaces Based On Environmental Performance in A 3D Real-Time Visualisation In Hot, Humid And Hot, Arid Climates
- 2005 - 2010** An Assessment of The Zero Energy House - A Comparison of Energy Conservation Strategies and Bioclimatic Performances in The Temperate and Tropical Context
- 2004 - 2015** Study on the Influential Factors that Impart Efficient Response to the Structural Reliability and Sustainability

## المنشورات

### Article

- 2020** [A generic process of documentation and data management for historical Malay architecture using BIM.](#) Planning Malaysia Journal of the Malaysian Institute of Planners , 18 (2) pp.73-84
- 2020** [Recreating historical Malay architecture with BIM process.](#) International Journal of Built Environment and Sustainability , 7 (2) pp.79-89

- 2020** [The impact of manufactured sand \(M-Sand\) as partially and fully replacement of fine aggregate in concrete.](#) Advances in Science, Technology and Engineering Systems Journal , 5 (1) pp.302-306
- 2020** [The recycled polyethylene terephthalate \(PET\) bottles waste as a fine aggregate replacement in concrete.](#) TEST Engineering & Management magazine , 83 (May-June 2020) pp.1093-1096
- 2020** [3D geospatial technique in analysing the Malay heritage building structures.](#) Planning Malaysia , 18 (2) pp.85-96
- 2020** [The attributes of 'Papan Meleh' - roof eaves decoration in Baitul Rahmah \(Kuala Kangsar, Perak, Malaysia\) with the historic building information modelling \(HBIM\) application.](#) Planning Malaysia , 18 (2) pp.181-192
- 2019** [Spatial analysis on Malay buildings for categorization of Malay historic BIM library.](#) International Transaction Journal of Engineering, Management, & Applied Sciences & Technologies , 11 (2) pp.1-17
- 2019** [BIM backed decision support system in the management of heritage building.](#) International Journal of Built Environment and Sustainability , 6 (2) pp.71-79
- 2019** [The three layerings of Malay aristocratic ornamentations: survival of semantic categories amidst stylistic changes.](#) JOURNAL OF BUILT ENVIRONMENT, TECHNOLOGY AND ENGINEERING , 6 pp.1-12
- 2019** [Polyethylene Terephthalate \(PET\) bottles waste as fine aggregate in concrete.](#) International Journal of Innovative Technology and Exploring Engineering (IJITEE) , 8 (6S4) pp.1177-1180
- 2018** [Heritage building preservation through building information modelling: reviving cultural values through level of development exploration.](#) Planning Malaysia Journal of the Malaysian Institute of Planners , 16 (2) pp.62-72
- 2018** [Exploring the influence of architectural elements of Balai Besar Kedah on the Malay traditional architecture.](#) e-Bangi , 16 (8) pp.1-15
- 2018** [Heritage building preservation through building information modelling: reviving cultural values through level of development exploration.](#) Planning Malaysia Journal of the Malaysian Institute of Planners , 16 (2) pp.62 -72
- 2018** [Historic Building Information Modelling \(HBIM\) for Malaysian construction industry.](#) Planning Malaysia: Journal of the Malaysian Institute of Planners , 16 (3) pp.332-343
- 2018** [Analysis by means of surface response to chemical composition and pozzolanic reactivity of ultrafine treated rice husk ash \(UFTRHA\) as cementing additive material.](#) International Journal of Engineering and Technology(UAE) , 7 (4) pp.342-346
- 2018** [Heritage building preservation through building information modelling: reviving cultural values through level of development exploration.](#) Journal of the Malaysian Institute of Planners , 16 (2) pp.62-72
- 2018** [Physicochemical properties and pozzolanic performance of ultrafine treated rice husk ash \(uftrha\) as additive in concrete.](#) Planning Malaysia : Journal of the Malaysian Institute of Planners , 16 (2) pp.285-292

- 2017** [CFD investigation of indoor hygrothermal and airflow profile in academic research storage room: effect of Ima on thermohygric balance and mould growth.](#) ARPN Journal of Engineering and Applied Sciences , 12 (10) pp.3080-3087
- 2017** [Life cycle cost and performance assessment: comparison between reconstruction and cold-in-place recycling \(CIPR\) methods.](#) Malaysian Construction Research Journal (MCRJ) , 21 (1) pp.17-32
- 2017** [Indoor mould growth prediction using coupled computational fluid dynamics and mould growth model.](#) Building Simulation , 10 (4) pp.551-562
- 2017** [Exploring methods of quantity measurement for heritage conservation works.](#) Advanced Science Letters , 23 (7) pp.6277-6280
- 2017** [CFD investigation of indoor hygrothermal performance in academic research storage room: Measurement and validation.](#) ARPN Journal of Engineering and Applied Sciences , 12 (10) pp.3130-3136
- 2016** [Hygrothermal performance of building envelopes in the tropics under operative conditions: condensation and mould growth risk appraisal .](#) Jurnal Teknologi , 78 (5) pp.271-279
- 2016** [Effect of pretreatment soaking duration to characteristic of ultrafine treated rice husk ash \(UFTRHA\) as supplementary cementing material \(SCM\) .](#) ARPN Journal of Engineering and Applied Sciences , 11 (12) pp.7596-7600
- 2015** [Effect of rice husk ash \(RHA\) on physical property and mechanical strength of concrete .](#) Advanced Materials Research , 1115 pp.150-155
- 2015** [Physical and mechanical properties of concrete incorporating manufactured sand.](#) Advanced Materials Research , 1115 pp.160-165
- 2015** [Effect of tropical climate condition to compressive strength and microstructure properties of high performance fiber reinforced reinforced concrete \(HPFRC\).](#) Advanced Materials Research , 1115 pp.182-187
- 2015** [Mechanical Properties of Bamboo Fibre Composite Incorporating Pulverized Fuel Ash.](#) Advanced Materials Research , 1115 pp.270-274
- 2015** [Pozzolanic reaction mechanism of rice husk ash in concrete – a review.](#) Applied Mechanics and Materials , 773-774 pp.1143-1147
- 2015** [Characterization, microstructure properties and impurities removal of treated rice husk ash \(TRHA\) as supplementary cementing material \(SCM\) in concrete using hydrochloric acid pretreatment process.](#) Journal of Applied Science and Agriculture , 10 (3) pp.1-4
- 2015** [Effect of calcium carbonate replacement on workability and mechanical strength of Portland cement concrete .](#) Advanced Materials Research , 1115 pp.137-141
- 2015** [Effect of polycarboxylate ether \(PCE\) addition to physical and mechanical characteristics of high performance concrete .](#) Advanced Materials Research , 1115 pp.146-149
- 2012** [Optimization of a cooling system in data centers.](#) Wulfenia Journal , 19 (9) pp.196-214

- 2012 [Construction quality of school buildings using the Industrialised Building System \(IBS\).](#) Malaysian Construction Research Journal , 11 (2) pp.21-35
- 2010 [A simulation method to find the optimal design of photovoltaic home system in Malaysia, case study: a building integrated photovoltaic in Putra Jaya.](#) International Journal of Human and Social Sciences , 5 (2) pp.117-121
- 2009 [Audit assessment of the facilities maintenance management in a public hospital in Malaysia.](#) Journal of Facilities Management , 7 (2) pp.142 -158
- 2009 [A simulation method to find the optimal design of photovoltaic home system in Malaysia, case study: a building integrated photovoltaic in Putra Jaya.](#) World Academy of Science, Engineering and Technology , 53 pp.694-698
- 2009 [Assessment of mould growth on building materials using spatial and frequency domain analysis techniques.](#) International Journal of Computer Science and Network Security (IJCSNS) , 9 (7) pp.154-167
- 2007 [Protection of natural Wetland within development area: a case study of Tasik Melati.](#) International Journal of Energy and Environment , 1 (2) pp.122-126
- 2007 [Impact of Wetland urbanization in Kuala Lumpur, Malaysia.](#) International Journal of Energy and Environment , 1 (2) pp.127-132
- 1999 [Effect of fatigue loading on bonding shear strength at the interface between two layers concrete.](#) Journal of Structural Engineering , 45A pp.1157--1164

#### Conference or Workshop Item

- 2019 [A customized classification with codification of Malay architectural heritage:the Malay Palatial facades.](#) In: **Innovation And Technology Exposition InTEX19**
- 2019 [Polyethylene Terephthalate \(PET\) bottles waste as fine aggregate in concrete - a review.](#) In: **International Conference on Sustainable Urban Development Resource Conservation and Food Security**
- 2019 [Spatial analysis on Malay buildings for categorization of Malay historic BIM library.](#) In: **4th International Conference-Workshop on Sustainable Architecture and Urban Design (ICWSAUD) 2019**
- 2019 [The three layerings of Malay Aristocratic ornamentations: survival of semantic categories amidst stylistic changes.](#) In: **The 6th Putrajaya International Built Environment, Technology and Engineering Conference (PIBEC 6) 2019**
- 2019 [The application of CAP-SASW method in determination of sub-surface profile of flexible taxiway in the airport.](#) In: **10th Malaysian Road Conference & Exhibition 2018**
- 2019 [The effect of recycled Polyethylene Terephthalate \(PET\) bottles waste as a fine aggregate replacement in concrete.](#) In: **4th International Conference on Advances in Manufacturing and Materials Engineering (ICAMME) 2019**
- 2018 [Analysis by means of surface response to chemical composition and pozzolanic reactivity of Ultrafine Treated Rice Husk Ash \(UFTRHA\) as cementing additive material.](#) In: **International Graduate Conference on Energy, Engineering & Technology 2018 (iGRAD2018)**
- 2018 [Traditional Malay building as-built drawings reproduction using building information modelling.](#) In: **ASEAN Postgraduate Conference 2018**

- 2018 [Compositional-cultural evolutions as variations of Malay architectural and constructional vocabulary- a review.](#) In: **International Conference on Language, Culture and Society 2018 (2018)**
- 2016 [Experimental investigation of ventilation efficiency in a dentistry surgical room.](#) In: **The 4th International Building Control Conference 2016 (IBCC 2016)**
- 2016 [The effect of incineration temperature to the chemical and physical properties of Ultrafine Treated Rice Husk Ash \(UFTRHA\) as Supplementary Cementing Material \(SCM\).](#) In: **The 4th International Conference on Process Engineering and Advanced Materials (ICPEAM 2016)**
- 2016 [Milling time influence of ultrafine treated rice husk ash to pozzolanic reactivity in portlandite.](#) In: **3rd International Conference on Civil, offshore and Environmental Engineering, ICCOEE 2016; Kuala Lumpur; Malaysia**
- 2016 [Exploring methods of quantity measurement for heritage conservation works.](#) In: **International Conference on Architecture & Built Environment (ICABE 2016)**
- 2016 [Evoking Malaysian architecture cultural identity through development of parametric bim.](#) In: **16th International Conference on Construction Applications of Virtual Reality**
- 2016 [Moisture condensation on building envelopes in differential ventilated spaces in the tropics: quantitative assessment of influencing factors.](#) In: **The 4th International Building Control Conference 2016 (IBCC 2016)**
- 2015 [CFD investigation of indoor hygrothermal performance in academic research storage room: measurement and validation.](#) In: **International Conference on Computational Fluid Dynamics in Research and Industry 2015**
- 2015 [Ventilation performance assessment of an educational building in a hot and humid climate.](#) In: **International Civil and Infrastructure Engineering Conference 2014**
- 2015 [Indoor microbial growth prediction using coupled computational fluid dynamics and microbial growth models.](#) In: **The 13th Asia Pacific Conference on the Built Environment**
- 2015 [Comparative study of life cycle cost and pavement performance on road rehabilitation methods.](#) In: **14th Management in Construction Research's Association (MiCRA) Annual Conference and General Meeting**
- 2015 [Hygrothermal performance of building envelopes in the tropics under operative conditions: condensation and mould growth risk appraisal.](#) In: **International Conference On Science, Engineering, Built Environment And Social Science (ICSEBS 2015)**
- 2015 [An improved method to evaluate indoor microclimatic data: case study of a book archive in a hot and humid climate.](#) In: **The 13th International Conference on Indoor Air Quality and Climate**
- 2014 [An improved method to evaluate indoor microclimatic data: case study of a book archive in a hot and humid climate.](#) In: **International Research, Invention and Innovation Exhibition 2014 (IRIIE2014)**

- 2014 [Effect of tropical climate condition to compressive strength and microstructure properties of High Performance Fiber Reinforced Concrete \(HPFRC\).](#) In: **International Conference on Advances in Manufacturing and Materials Engineering 2014 (ICAMME 2014)**
- 2014 [Influence of indoor microclimate distribution on mould infestation in a university library.](#) In: **International Civil and Infrastructure Engineering Conference (InCIEC2014)**
- 2014 [Effect of calcium carbonate replacement on workability and mechanical strength of portland cement concrete.](#) In: **International Conference on Advances in Manufacturing and Materials Engineering 2014 (ICAMME 2014) 23-25 September 2014, Kuala Lumpur, Malaysia**
- 2014 [Effect of rice husk ash \(RHA\) on physical property and mechanical strength of concrete.](#) In: **2nd International Conference on Advances in Manufacturing and Materials Engineering 2014 (ICAMME 2014)**
- 2014 [Mechanical properties of bamboo fibre composite incorporating pulverized fuel ash.](#) In: **2nd International Conference on Advances in Manufacturing and Materials Engineering 2014 (ICAMME 2014)**
- 2014 [Evaluating life cycle cost and performance comparison between cold in place recycling and reconstruction method.](#) In: **Management Construction Researchers' Association Annual Conference and General Meeting (MiCRA 2014)**
- 2014 [Pozzolanic reaction mechanism of rice husk ash in concrete: a review.](#) In: **International Integrated Engineering Summit (IIES 2014)**
- 2013 [Fire risk assessment of heritage building - perspectives of building stakeholders.](#) In: **IRIIE 2013**
- 2013 [Fire risk assessment of heritage building: the influence of regulatory body and restorer's background on the assessment criteria.](#) In: **Seminar Hasil Penyelidikan Sektor Pengajian Tinggi Kementerian Pendidikan 2013**
- 2013 [Parametric study of earth-to-air heat exchanger in Malaysian climate.](#) In: **The Asian Conference on Sustainability, Energy and the Environment 2013**
- 2012 [Malaysian labour productivity for reinforced concrete structural frame: a case study .](#) In: **Malaysian Science Technology Congress**
- 2012 [Acceptability of Malaysian construction practitioners in adopting 4D.](#) In: **First International Conference on Islamic Built Environment**
- 2012 [Reliving the traditional masjid architecture in contemporary world : the case of Masjid Al Falah - KAED Community Project.](#) In: **IRIIE 2012**
- 2012 [Partnering between main contractors and sub-contractors in construction projects.](#) In: **first International Conference on Islamic Built Environment**
- 2011 [The acceptability of four dimension \(4D\) virtual construction in Malaysia.](#) In: **International Conference on Universal Design in Built Environment**
- 2010 [Investigate the influential factors that impart efficient responses to the structural reliability and sustainability.](#) In: **IIUM Research, Innovation & Invention Exhibition (IRIIE 2010)**

- 2010 [Assessment of mould growth in selected hospital : Air conditioning system aspect.](#) In: **30th International Seminar For Public Health Group of the Union of International Architects**
- 2010 [User-centered design and evaluation of e-heritage: a virtual reality prototype for learning architectural heritage in informal education.](#) In: **10th International Conference on Construction Applications of Virtual Reality (CONVR 2010)**
- 2009 [A new tool for assessment of mould growth on building materials.](#) In: **3rd International Conference on Modeling, Simulation, and Applied Optimization (ICMSAO 2009)**
- 2009 [Environmental impacts of ecotourism on mangrove: case study of Kuala Selangor Nature Park.](#) In: **6th Workshop on Sosial Capital and Development Trends in the Japanese and Swedish Countryside**
- 2009 [Optimization of cooling systems in data centre by computational fluid dynamics model and simulation.](#) In: **Conference on Innovative Technologies in Intelligent Systems and Industrial Applications (CITISIA 2009)**
- 2008 [Sustainable residential low density urban development: integrating sustainable consciousness with commercial viability.](#) In: **2008 World Sustainable Building Conference**
- 2008 [Proposed research for optimization of the performance of cooling system in data center facilities.](#) In: **7th Annual Conference Management in Construction Researchers' Associations MICRA 2008**
- 2008 [Integrating a computational fluid dynamics simulation and visualization with a 3D virtual walk through - a case study of Putrajaya .](#) In: **8th International Conference on Construction Applications of Virtual Reality (CONVR 2008)**
- 2008 [Integration of environmental performance in a virtual reality framework: case study of Putrajaya.](#) In: **8th International Conference on Construction Applications of Virtual Reality (CONVR 2008)**
- 2007 [Virtual reality in heritage studies and historical reconstruction through animation – A case study of a 16th century university complex in the Ottoman world.](#) In: **7th International Conference on Construction Applications of Virtual Reality: October 22-23, 2007**
- 2007 [Virtual reality in heritage studies and historical reconstruction through animation – A case study of a 16th century university complex in the Ottoman world.](#) In: **7th International Conference on Construction Applications of Virtual Reality:**

#### **Book**

- 2017 [Security determinants in building automation system.](#) IIUM Press . ISBN 978-967-418-549-7
- 2017 [A study on life cycle of maintenance during the in use phases of flexible pavement from Pagoh to Machap.](#) IIUM Press, International Islamic University Malaysia . ISBN 978-967-418-641-8

#### **Book Section**

- 2016 [Reminiscing traditional masjid architecture in a contemporary world: The making of Masjid Al-Falah.](#) In: **Dimensions of Masjid Architecture-Perspectives and Writings in Theory and Design** Kulliyah of Architecture and Environmental Design, IIUM . ISBN 978-983-3142-33-0 , pp.199-206



- 2016 [Passive design of two modern Masjids in Malaysia.](#) In: **Dimension of Masjid Architecture - Perspective and Writings in Theory and Design** Kulliyyah of Architecture & Al Bukhary Foundation . ISBN 978-983-3142-33-0 , pp.237-247
- 2015 [Measurement of quality in building constructed using Industrialised Building System \(IBS\) and conventional method.](#) In: **Methodologies in Architectural Research** IIUM Press . ISBN 978-967-418-331-8 , pp.65-85
- 2011 [Managing construction projects through shared online calendar .](#) In: **Readings In Contemporary Construction Technology and Management** IIUM Press . ISBN 9789674180515 , pp.30-39
- 2011 [Effectiveness of substation monitoring system.](#) In: **Readings In Contemporary Construction Technology and Management** IIUM Press . ISBN 9789674180515 , pp.168-184
- 2011 [Risk management in construction projects in Malaysia .](#) In: **Readings In Contemporary Construction Technology and Management** IIUM Press . ISBN 9789674180515 , pp.40-54
- 2011 [The acceptability of four dimension \(4D\) virtual construction in Malaysia .](#) In: **Green Architecture in Built Environment** IIUM Press . ISBN 9789674180393 , pp.53-69
- 2011 [Mould growth prevention in public hospitals: fundamentals, challenges and issues.](#) In: **Issues in facilities management and maintenance: a Malaysian perspective** IIUM Press . ISBN 9789674180355 , pp.1-39
- 2011 [Flat roof construction and systems principles and issues in maintenance management.](#) In: **Issues in facilities management and maintenance: a Malaysian perspective** IIUM Press . ISBN 9789674180355 , pp.77-94
- 2011 [Defects and deterioration of multi-storey building facades: issues and challenges.](#) In: **Issues in facilities management and maintenance: a Malaysian perspective** IIUM Press . ISBN 9789674180355 , pp.95-118
- 2011 [Fire safety in buildings and fire door assesment: principles and standards.](#) In: **Issues in facilities management and maintenance :a Malaysian perspective** IIUM Press . ISBN 9789674180355 , pp.119-139
- 2011 [Environmental impacts of ecotourism on mangrove : case study of Kuala Selangor Nature Park.](#) In: **Social capital and development trend in rural area** Marginal Areas Research Group . ISBN 9784907830076 , pp.101-111
- 2010 [Ministry of Energy, Water, Communication \(MEWC\) building Putrajaya, Malaysia.](#) In: **Sustainable buildings in practice** Routledge . ISBN 9780415399326 , pp.295-303
- 2006 [Integrating a computational fluid dynamics simulation and visualization with a 3D virtual walkthrough - a case study of Putrajaya.](#) In: **Innovations in 3D Geo Information Systems** Springer . ISBN 978-3-540-36997-4 , pp.599-614