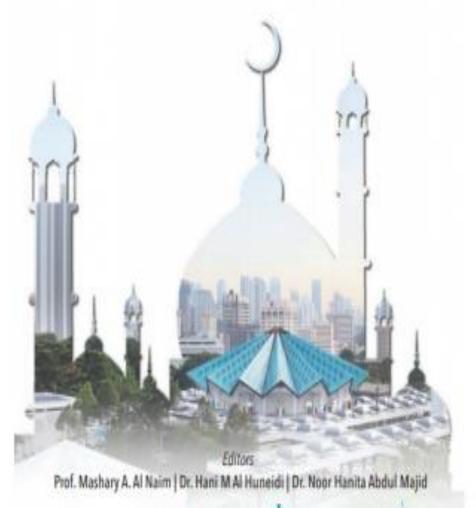
MOSQUE ARCHITECTURE

PRESENT ISSUES AND FUTURE IDEAS

عمارة المسجد:

قضايا الحاضر و أفكار المستقبل











MOSQUE ARCHITECTURE

PRESENT ISSUES AND FUTURE IDEAS

عمارة المسجد:

قضايا الحاضر و أفكار المستقبل









PRESENT ISSUES AND FUTURE IDEAS

ARCHITECTURE

عمارة المسجد

قضايا الحاضر و أفكار المستقبل

Editors

Prof. Mashary A. Al Naim | Dr Hani M Al Huneidi | Dr Noor Hanita Abdul Majid





Kuala Lumpur 2019





This book MOSQUE ARCHITECTURE: PRESENT ISSUES AND FUTURE IDEAS/ المستقبل is jointly published by the Abdullatif Al Fozan Award for Mosque Architecture and Institut Terjemahan & Buku Malaysia Berhad.

Jointly published by: ABDULLATIF AL FOZAN AWARD FOR MOSQUE ARCHITECTURE

Al Fozan Tower Prince Turki Bin Abdulaziz Street Corniche Road POBox 38 Al Khobar 31952 Kingdom of Saudi Arabia

Tel.: +966 (o) 13 895 9725

E-mail: info@alfozanaward.org Website: alfozanaward.org

and

INSTITUT TERJEMAHAN & BUKU MALAYSIA BERHAD

(Company No.: 276206-D) Wisma ITBM, No. 2, Jalan 2/27E Seksyen 10, Wangsa Maju 53300 Kuala Lumpur Malaysia

Tel.: 603-4145 1800 Fax: 603-4142 0753
E-mail: publishing@itbm.com.my Website: www.itbm.com.my

First Published in 2019 Publication © Abdullatif Al Fozan Award for Mosque Architecture Text © Original writers Photos/Illustrations © Original contributors

The publication of this book is sponsered by Al Fozan Social Foundation and Saleh Hamza Surafi Foundation.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, except brief extracts for the purpose of review, without the prior permission in writing of the publisher from Abdullatif Al Fozan Award for Mosque Architecture.

National Library of Malaysia

Cataloguing-in-Publication Data

Mosque architecture: present issues and future ideas / editor: Prof. Mashary A. Al Naim, Dr Hani M. Al Huneidi, Dr Noor Hanita Abdul Majid.

ISBN 978-967-460-840-8

- 1. Mosques.
- 2. Mosques--Design and construction. 3. Mosques--Designs and plans.
- 4. Islamic architecture.
- I. Mashary A. Al Naim, Prof.
- II. Hani M. Al Huneidi, Dr.
- III. Noor Hanita Abdul Majid, Dr. 726.2

Editors: Prof. Mashary A. Al Naim, Dr Hani M. Al Huneidi, Dr Noor Hanita Abdul Majid.

Cover design: Shamsul Ismin Tumin

Layout design: Suhaila Sobi

Printed in Malaysia by: Attin Press Sdn. Bhd. No. 8, Jalan Perindustrian PP4 Taman Perindustrian Putra Permai Bandar Putra Permai 43300 Seri Kembangan Selangor



Acknowledgment	xiii
Introduction	XV
FUTURE MOSQUE ARCHITECTURE DESIGN AND FUNCTION REGIONAL DESIGN OF MOSQUE	1
THE RELEVANCY OF MOSQUE ARCHITECTURE IN A MULTI-FAITH COUNTRY: CHINA AS A CASE Sumarni Ismail Liu Yuzhou Nayeem Asif Azmal bin Sabil	5
MOSQUE AS THE INTEGRAL PART OF THE CONTEXT AND NATURE: CULTURAL MAPPING OF SULTANATE PERIOD IN DELTA BENGAL Dr. Sajid Bin Doza	15
THE DIMINISHING OF INDIGENOUS ARTISTIC TRADITION IN THE DECORATIVE ARTS OF THE MOSQUES IN DUNIA MELAYU Harlina Md Sharif	23
SACRED COMMUNITY ASSETS: PLANNING FAITH SPACES FOR FUNCTIONAL, UNIVERSAL, AND FUTURE-READY MOSQUES IN SINGAPORE Muhammad Helmi Abdul Mutallif Syazwani Rauzan	45
THE MOSQUE OF TOMORROW Rafee Hakky, Ph.D	65

MOSQUE ARCHITECTURAL SPACE AND BOUNDARIES	83
THE REVIVAL OF COURTYARD CONSOLIDATION IN MOSQUE ARCHITECTURE Islam Elghonaimy Dalia Eldardiry	87
THE RAY OF LIGHT MOSQUE DESIGN OF A MOSQUE FOR MEN AND WOMEN Co Govers	105
AN EVALUATION OF PRAYING SPACES IN SHOPPING MALLS: THREE CASE STUDIES FROM RIYADH, SAUDI ARABIA Mayman Almayman	123
HAS MOSQUE DESIGN REALLY DEVELOPED? NOTES ON THE HIDDEN COMPLEXITIES OF MOSQUES' ARCHITECTURAL BRIEF Dr. Yasser Megahed	139
HOW CHILDREN USE SPACES IN THE MASJID? Aniza Abu Bakar Zur Atiqa Zulkifely Noor Hanita Abd Majid Mohd Burhan Ibrahim	155
PHYSICAL DIMENSION OF MASJID – TOWARDS CHILDREN FRIENDLY MASJID Aniza Abu Bakar Zur Atiqa Zulkifely Noor Hanita Abd Majid Mohd Burhan Ibrahim	175
SPATIAL PLANNING FOR NON-MUSLIM ACCESS IN A MASJID Maryam Ilhami Amran Asiah Abdul Rahim	189
THE CLEANLINESS AND PURITY OF ABLUTION AND TOILET AREA IN MASJID: AN ANALYSIS OF USERS' UNDERSTANDING AND BEHAVIOUR Siti Hanisah Abdullah Asiah Abdul Rahim	199

COMMUNITY MOSQUES IN URBAN CENTRES	211
GRAND MOSQUE AS A STRUCTURAL APPROACH TO URBAN TRANSFORMATION IN THE TRADITIONAL CITY CASE STUDY: BURAYDAH, QASSIM, KSA Moustafa Gh. Abdou	215
BRITISH MUSLIMS AND THE 21ST CENTURY MOSQUE Samie I. Kayani	237
دراسة تحليلية للدراسات المعنية بالضوابط الشرعية لعمارة المساجد أحمد بن رشدي طومان	247
MOSQUE AS A SOCIAL CULTURAL PLACE FROM WOMB TO TOMB	285
THE CHANGING ROLES OF THE FUTURE MOSQUES IN THE CONTEXT OF THE MUSLIM COMMUNITY IN MALAYSIA Azim A. Aziz Mohamad Haziq Zulkifli	289
GRAND MOSQUES IN ISLAMIC HISTORY: ARE THEY THE MODEL? Abeer Allahham	323
MOSQUES AS A LIVING ARCHITECTURE AND CULTURAL HERITAGE	339
MOSQUE DESIGN BETWEEN ICONICITY AND RECEPTIVENESS Marwa Kamal Doaa M. Helal Rania Ismail Ahmaad Eltaweel	343
ARCHITECTURE GALLERIES IN MUSEUMS: THE FUTURE Dr. Heba Nayel Barakat Nurul Iman Rusli Muhammad Syukri Mohd Shairi	361
MOSQUE AS "HOUSE OF GOD" AND AS "HOUSE OF COMMUNITY": AN INQUIRY INTO ADAPTIVE REUSE OF AN ABANDONED MOSQUE IN PAKISTAN Syed Hamid Akbar Koenraad Van Cleempoel	383

MOSQUE AS LIVING ARCHITECTURE AND CULTURAL HERITAGE Abdul-Malik Abdul-Azeez Abiodun	401
MOSQUE AND COMMERCIAL URBAN NEIGHBORHOOD	417
INTEGRATION, SEGREGATION, OR FRAGMENTATION? JEDDAH CONTEMPORARY MOSQUES IN THE CONTEXT OF PUBLIC PLACES Dr. Mona Helmy	421
UNIVERSAL DESIGN	439
NCLUSIVE BUILT ENVIRONMENT FOR MALAYSIAN HERITAGE MASJID Nur Amirah Abd Samad Izawati Tukiman Asiah Abdul Rahim Samini Omar	443
INNOVATIVE REHABILITATION OF OLD MOSQUES	459
GUIDELINES FOR THE MANAGEMENT OF HISTORIC MOSQUES Hossam Mahdy, Ph.D	463
INNOVATIVE TECHNOLOGIES IN SPIRITUAL CONTEMPLATION	479
MIZWALAH TAHA: TOWARDS THE REVITALIZATION OF TRADITIONAL MOSQUES ARTEFACTS Syed Kamarulzaman Ibnor Azli Ibrahim	483
APPROPRIATE DAYLIGHTING SOURCES DESIGN FOR SPIRITUAL SPACES IN SAUDI ARABIA Aisha Alabdulazeem Ahoud Al Bat'hi Reem Al Ba'adi Fuad H. Malick	503
S SERENITY THE SOULS OF MOSQUES? Ayman M Ismail Husam Bakr Khalil Aya Mostafa	523

4	

	CONTENTS
ACOUSTICAL PERFORMANCE IN MALAYSIAN MOSQUES: REVERBERATION TIME IN THE MAIN PRAYER HALLS Zufar Adzahan Nazli Che Din	539
SUGGESTED FRAMEWORK FOR NOISE ASSESSMENT IN MOSQUES Mostafa J. Sabbagh Ahmed Elkhateeb	549
DIGITAL MOSQUES AND ENVIRONMENT	561
REVIVING THE MISSING HISTORY OF MOSQUES USING THE VIRTUAL USER INTERFACE OF ISLAMIC CIVILIZATION-VUIIC Osama Elrawi	565
INNOVATIVE ISLAMIC AESTHETICS AND PATTERNS	593
ARCHITECTURAL ORNAMENT ON CONTEMPORARY MOSQUE IN MALAYSIA Siti Dalila Mohd Sojak Raja Nafida Raja Shahminan Fadhlina Ahmad @ Taufik	597
A STUDY TOWARDS THE ORIGIN OF TERRACOTTA DECORATION OF THE MOSQUE ARCHITECTURE IN BENGAL: AN ANALYSIS BASED ON SHAPE GRAMMAR PRINCIPALS Shafique Rahman Redowan Kabir Kaushik	609
USING REPERTORY GRID TECHNIQUE (RGT) TO ANALYZE THE AESTHETICS OF CONTEMPORARY ARCHITECTURAL IMAGES OF MOSQUES Ahmed Agiel Najeeba Kutty	625
THE AESTHETIC OF DECORATION IN MOSQUE: CASE STUDY OF MOSQUE IN MELAKA TOWARDS UNDERSTANDING ITS TRUE FUNCTIONS Norzalifah Zainal Abidin	659

BIOPHILIA FOR MOSQUES DESIGNS Mohamed Esmat ElAttar Zainab Nasr Tahoon Fatema Elzahraa Hany Abbas	693
INNOVATIVE CRAFTSMANSHIP IN CONSTRUCTION	717
READING GEOMETRY OF TRADITIONAL MOSQUES: SELF-SIMILARITY OF CENTRIC ORDER EMPHASIZING TAWHEED PRINCIPLE Hatem Abdelrahman Fayed	721
GREEN ARCHITECTURAL DESIGN STRATEGIES AND POLICIES FOR MOSQUES	737
ENERGY AUDIT FOR LOW ENERGY MOSQUE IN HOT ARID CLIMATE INSIDE ASSIUT UNIVERSITY CAMPUS Amr Sayed Hassan Abdallah	741
EVALUATION STUDY ON THE INSTALLED PHOTOVOLTAIC PANELS AND THEIR EFFECT ON THE AESTHETIC PERCEPTION AND EVALUATION OF MOSQUE ARCHITECTURE IN AMMAN; LOOKING FOR INTEGRATED SOLUTIONS Hikmat Ali Anwar F Ibrahim Wala'a Al-Qarra	753
REPLACING THE MOSQUE STEREOTYPE TO DISPLACE THE ISLAMOPHOBIA CONCEPT Ameera Jaleel Ban Mohammed Sultan	771
AN EMPIRICAL CLASSIFICATION OF COST OVERRUN IN INFRASTRUCTURE PROJECTS TO UNDERSTAND THE IMPACT OF SAUDI BUILDING CODE Fahad Saud Allahaim Li Liu	805
GREEN AND SUSTAINABLE STRUCTURES	835
GREEN AND SUSTAINABLE STRUCTURE OF THE MOSQUE OF AL-IRSYAD SATYA INDONESIA Dr. Ahmad Hairuddin Murtani Saefudin Sardi	839

URBAN ECOLOGY MATRIX TOWARDS SUSTAINABLE MOSQUE Ar. Shabab Raihan Kabir	857
VERTICAL GARDEN WALL FOR SUSTAINABLE MOSQUE BUILDING IN HOT DRY CLIMATE Aasem Alabdullatief Siddig Omer Sultan Alfraidi Faisal Alosaimi	887
COMMUNITIES AND SUSTAINABLE SYSTEM	899
TOWARDS A VISIBLE AND LOCALLY RELEVANT MOSQUE ARCHITECTURE IN FRANCE Fairouz Benatia Sabre Bougrine Meriem Chabani John Edom Rym Hanna Khedjari	903







Siti Hanisah Abdullah

Master Student, Department of Architecture, Kulliyyah of Architecture & Environmental Design (KAED), International Islamic University Malaysia (IIUM)

Asiah Abdul Rahim

Professor, Department of Architecture, Kulliyyah of Architecture & Environmental Design (KAED), International Islamic University Malaysia (IIUM)

INTRODUCTION

NE of the best good that a person can do is the upkeep and sustaining of masjid as bountiful in return are promised (Hasan Lam, 2018). Believers should exercise the above mentioned in accommodating "Allah's guest" as well as in enhancing the quality of *ibadah* (worship). As commanded by Allah SWT to Prophet Ibrahim in *Surah Al-Hajj*, verse 26: "Purify My House for those who circle around it, those who stand to pray, and those who bow and prostrate themselves".

An encryption of morals was scripted "under the guardianship of Prophet Muhammad, peace and blessings be upon him (PBUH), and divine revelation" (Omer, 2017). Omer explained that this scripture served as a guideline enhancing the development of *masjid* and the practices in it. Among which preservation of the cleanliness of *masjid* was detailed "for cleanliness is part of faith". Harmoniously, the requisite for one to prostrate before the Almighty, his figure, cloth, and space of worship must be pure (Baz, 2007).

Issue

The background of the study highlighted the importance of cleanliness and purification in Islamic context and its vital need to be preserved in *masjids*. On another note, the psychological and cultural influence in a space also has its part in justifying the pertaining issue (Johari *et al.*, 2013).

It is important to understand subject behaviour on site at specific time throughout the day, focusing on behaviour in the ablution and toilet areas of the *masjid* to provide a valid, acceptable, and reliable data in relation to human perception regarding the issue (Sarantakos, 2005).

A successful design and layout of the *masjid* includes the projection of human norm and culture into consideration (Johari *et al.*, 2013). Improper spatial layout of *masjid* can lead to disruption of the purity due to human behaviour (Nashirudin and Jasmi, 2008). The way the spaces are planned and designed can heavily influence the way people carry themselves in a *masjid* (Abd Hamid *et al.*, 2015). Poorly planned spaces can potentially affect the purity of the praying area.

Aim and Objective

The aim is to comprehend the *masjid's* users attitude towards developing a more holistic approach in planning the ablution and toilet area; with regards to safeguard its cleanliness and purity. Following suit, the objective of the study is to understand the users' level of sensitivity towards cleanliness and purity of the ablution and toilet area in *masjid*.

LITERATURE REVIEW

Cleanliness and Purity in Islam

"Taharah (purity)" in Islam is a fundamental concept pertaining to "physical" and "spiritual" part (Perlmutter, 2014). The first part involves observing of oneself, garments and environment from impurity and the later part refers to "tazkiyatun nafs" (purification of the soul)" where one leads a moral lifestyle. The rulings regarding impurity or pollution in Islam sets around the principle of two categories that is "hadath" and "khabath" (Gauvain, 2002). The first is described as "of a hukmiyah (legal/technical) or abstract kind" while the latter is mentioned by the term "najasah", referring to "physical" or "actual/tangible" impurity. The abstract impurity is also classified into "minor and major" forms.

A believer must not prostrate before God when they are in the state of minor hadath as mentioned in the Qur'an (5:6, 4:43). Minor hadath are purified by performing "minor ablution" called "wudhu" with "water which is pure and purifying". Purifying the second classification of hadath (major) requires Muslims to have a "ceremonial bath (ghusl)". In Islam, water that is "pure" and purifies includes "rain, snow/hail water, running water such

200

as rivers, springs, wells and seas, and distilled water" (Al-Fawzan, 2005). Water that is impure and does not purify refers to water which its "odour, taste, or colour" has been altered by an impurity. During travel, sickness (where liquid may cause further implication) or when water is hard to find, a Muslim can carry out "tayammum" to "lift his hadath".

Masjid

Numerous *hadiths* and Qur'anic verses stipulate indications for the approach of building such space for worship. In a nutshell, providing the area for prayer with convenience and specific amenities made available for all walks of life including travellers and disabled is very much sought after (Ahmad Sarkawi *et al.*, 2016). Key features suggested for "masjid and surau" as listed by Malaysian Standard (2014) includes "qiblah direction, prayer hall, mimbar, mihrab, dome/minaret, ablution, and toilet.

Spaces Design

Dr. Ahmed Mokhtar (2005) stressed on "the concept of *taher* (pure) zone". He placed emphasis on defining a clear boundary line of where the pure zone starts; differentiating it by the use of different material, a change in level, a sill or a door. This is to ensure the footwear of *jama'ah* (congregation) which may be contaminated by impurity does not cross over to the zone. Islam teachings also requires male and female to be segregated when in prayers. Mokhtar made clear that pathway connecting ablution area and praying area for both genders should not cross.

The concept of *aurah* (private parts) further necessitates the need of segregation for ablution and toilet area. This is agreed by a study recommending the separation in order to maintain the cleanliness and purity of the spaces (Nashirudin and Jasmi, 2008). When performing ablution, it is best orientated facing *qiblah* based on prophetic *sunnah*. According to Islamic teachings, the toilet neither face toward nor against the *qiblah* but rather it should face perpendicular to it either to the east or west (Sahih Bukhari, *Kitab al-Wudu*).

Generally, the spaces are to be adequately illuminated by both sunlight as well as light fixtures (MS2577:2014). Allow gradient on floor and furniture to channel water towards drainage in passively maintaining an area's dryness as suggested by Mokhtar (2005) and agreed by Nashirudin and Jasmi (2008). The area, furniture, and fittings should accommodate to users' needs in ensuring a user-friendly space (Rahim *et al.*, 2015).





Maintenance

According to the MS2015:2006 on *Public Toilet Code of Practice for Maintenance*, the cleaning of toilet is done based on daily, weekly, and fortnightly task. Best choice of materials are those that have high cleanability rate and are light-coloured for further easing the cleaning duty (MS2577:2014). Surfaces "colour and pattern" must ease user in detecting presence of water while "non-slippery, anti-fungi, and anti-bacteria" material is highly recommended for area most commonly in contact with water (Mokhtar, 2005). However, usage of carpet in praying area hinders the accessibility of wheelchair user and arise the concern of purity due to the possible contaminated wheels, suggesting floorings such as tiles as a solution (Abdul Rahim and Abd. Samad, 2014). "Individual" praying mats are best in perspective of maintenance and cleanliness of the praying area (MS2577:2014).

RESEARCH METHODOLOGY

This study employed a qualitative research and explored the role of triangulation in research. Triangulation strengthens the validity of data by obtaining it from two or more sources through several research methods (Honorene, 2017). This research carried out the "collective case study" approach to visually analyse the specific real-time scenarios at the different sites studied as suggested by Stake (1995) (as cited in Sarantakos, 2005).

Data was collected from four case studies of different towns, all under the classification of residential area *masjid*: Masjid Al-Hidayah, Taman Melawati (M1), Masjid Al-Azim, Pandan Indah (M2), Masjid Al-Ikhlas, Shah Alam (M3), and Masjid Al-Falah, Subang Jaya (M4). The findings are tabulated description of the relationship between space arrangement and users' behaviour. This research also carried out a semi-structured interview to obtain data related to the societal perception from the authority's point of view. Individual interviews were carried out with an authority representative of each *masjid* – Mohd Ruslan Sarib, Secretary (M1), Siti Rasyidah Md Nor, staff (M2); Ashraf Jazari, Imam 3 (M3); and Hafizal Harun, Bilal 2 (M4).

ANALYSIS AND FINDINGS

Identification of pure zones in a *masjid* may be grouped into three types, rather than encompassing the *masjid* ground as a whole. Firstly, there is the main pure zone which refers to the *masjid* floors itself, often with walkways

202







as the boundary or transition element as shown in Table 1. This zone necessitates for the removal of shoes by patrons. Secondly, the ablution pure zone; for ablution areas that are linked to toilets. It focusses on the demarcation of pure zone for the ablution area as shown in Table 2. It may include provision of designated slippers strictly for ablution purpose or prohibit usage of toilet slippers there.

Thirdly is the void pure zone; where it marks the area of pause in the concept of pure as shown in Table 3. These areas such like toilets, are highly likely to be tainted with impurities. Usually, users in this area are requested the wearing of slippers or/and washing of feet when stepping out of this zone. The description of the spaces and behaviour of users in it are recorded accordingly to evaluate the effectiveness in protecting the cleanliness and purity.

TABLE 1Main pure zone of *masjid*.

M1	M2	Мз	M4
Distinction of main pure zone by: • change of level and material; • boundary mark; • instructional signage.	Distinction of main pure zone by: • change of level and material; • instructional signage.	Distinction of main pure zone by: • change of level and material; • instructional signage.	Distinction of main pure zone by: • change of level; • instructional signage.
 Users abide by signage. Users less frequently arrange shoes on floor. 	 Users abide by signage. Users less frequently arrange shoes on floor. Shoe racks are moderately used daily but highly used during rainy days. 	 Users abide by signage. Users less frequently arrange shoes on floor. Shoe racks along the interior walkway are less frequently used as users are unaware of its presence and need to carry their shoes inside. 	 Users abide by signage. Users less frequently arrange shoes on floor. Shoe racks are moderately used as users need to carry their shoes inside.



203

TABLE 2 Ablution pure zone of *masjid*.

M1	M2	М3	M4
Distinction of ablution pure zone from linked adjacent toilet by: • change of level, material and doorway; • no clear instructional signage.	Distinction of ablution pure zone from linked adjacent toilet by: • change of level, material and doorway; • inadequate and poor placement of instructional signage; • pipe for washing of feet.	Distinction of ablution pure zone from adjacent toilet by: • change of level, material and doorway; • transition buffer zones; • no clear instructional signage.	Distinction of ablution pure zone from linked adjacent toilet by: • change of level and material; • large and repetitive display of instructional signage.
 Users often intentionally/ accidentally breach the pure zone with slippers due to lack of signage Users often intentionally/ accidentally breach the pure zone with slippers due to lack of signage 		Users often intentionally/ accidentally breach the pure zone with slippers due to lack of signage	Users abide by signage.

TABLE 3 Void pure zone of *masjid*.

M1	M2	M3	M4
Distinction of void pure zone by: • change of level and doorway; • usage of slippers easily understood without instructional signage.	Distinction of void pure zone by: • change of level, material, and doorway; • instructional signage.	Distinction of void pure zone by: • change of level, material, and doorway; • transition buffer zones; • instructional signage.	Distinction of void pure zone by: • change of level, material, and doorway; • instructional signage; • only the cubicle is set as the void pure zone; • usage of slippers limited only in the cubicle.
 Users abide by signage. 	Users abide by signage.	Users abide by signage.	 Users often accidentally breach the pure zone with slippers while getting accustomed to this system.





IMPROVEMENT AS PER REVIEWER COMMENTS

Evaluating the type of marking used for these zones is important in ensuring its effectiveness of space demarcation while still promoting accessibility and safety. A boundary mark, an archway/doorway, and change of material is seemed more universal friendly than change of level or presence of sill. The change of level could be improvised with providing ramp or having a sloped floor.

For the main ablution area, all *masjid* ablution areas are accessible from inside the pure zone but is separated from the prayer hall with a walkway. It eliminates the needs of providing slipper, dissipates the noise of *wudhu'* water from the praying area, and reduces the occurrence of humid prayer hall situation. However, as some ablution area are linked to the toilet within the main pure zone, these *masjids* had opted to the provision of slippers, protecting the cleanliness and purity of the space and its users.

Taps for washing of feet at the doorway of the void pure zone is recommended due to shortage of slippers during peak hours. M4 devised a clever alternative by limiting slipper usage in the cubicle only, whereas the rest of the entire toilet is considered as a pure zone. Apart from the effectiveness of design approach, users' degree of adherence to zone segregation could also be due to firstly, visibility and placement of signage to guide the people and secondly, their level of sensitivity towards this step of precaution.

On the other hand, the findings of the interview are summarized into five categories encompassing *masjid* organization, *masjid* attendance and activity, *masjid* maintenance, *masjid* cleanliness and lastly, comments and suggestions as shown in Table 4. It provided the management strategy in the context to preserving the cleanliness and purity of *masjid* and details the users' level of sensitivity towards it.





TABLE 4

Interview summary.

Masjid Organization

• All four *masjids* have dedicated division and appointed officer in the organization structure in charge for cleanliness.

Masjid Attendance and Activity

- The average crowd flow in all *masjids* would account for *jema'ah* (congregation) around two to three *saf* (rows). However, the total number of *jema'ah* differs as each *masjid*'s *saff* differ in length according to the *masjid*'s capacity.
- Each *masjid* carries out *kulliyyah* throughout the week, most uniformly during Maghrib. This can be seen as one of the peak hours of each *masjid* in terms of crowd attendance.

Masjid Maintenance

- Every *masjid* is led by the head of the bureau teamed with *siak* and general workers.
- All masjids follow a schedule for the task of cleaning and maintenance.
- All four *masjid* collectively believe that the task of upkeeping the *masjid*'s cleanliness lies in the hands of both *masjid* management and the community themselves.
- The view differs in community responding towards disruption of cleanliness or purity:
 - ~ Inform *masjid*'s keeper for further action; better safeguarding cleanliness and purity.
 - ~ Encouraged them to attend it themselves due to lack of manpower.

Masjid Cleanliness

- Cleaning: M1 and M4 based on particular guidelines or standard of procedure while M2 and M3 based on readily known knowledge pertaining to cleanliness and purity.
- Cleaning equipment: all masjids differentiate equipment base on different areas to
 uphold the cleanliness and purity of it. Generally, cleaning equipment are accessible
 by public upon request but some masjids discourage public use of it in avoiding
 tampering the purity.
- Provision of slippers issue could be solved by limiting usage of slippers only within the toilet cubicle itself while maintaining the rest of the space as pure zone.
- Supervision of children in ablution and toilet areas: highlighted issue of child's safety and their behaviour correlating to their level of knowledge regarding purity and safety.
- Universal design: all *masjids* agrees on the need of universal design approach in *masjid*.
- Facilitative features should be easily identified by people who are unfamiliar there.

Comments and Suggestions

- Users' attitude: M2 highlighted the prominent vandalism as well as M3 whose close distance with the stadium and bus terminal, received users with various mentality, treating the *masjid* as a public toilet resulting in frequent issue of damages and lost.
- Users' awareness toward cleanliness and purity: involved the heart of individuals and not by the community. Donation are entrusted to the committee in managing the operation.





- Community involvement: masjids welcomes involvement and emphasized on collective responsibility. They urged on implementation of early education in the society. Committee must be cleaver in planning activities to ensure it receives warm reception.
- Ideas and suggestions to improve the cleanliness and purity: requires intervention from local authority or government to address the matter and schools in implementing early childhood education regarding cleanliness placing emphasis on purity. Propagation of education to all walks of life by digital platforms; television, social media, and mobile applications. Encouraged generation of ideas to cultivate the sense of belonging in the *masjid* to the congregation. Lastly, starting small and develop into impactful efforts.

CONCLUSION

This research concluded that effective spatial planning of the ablution and toilet area in *masjid* plays a major role in influencing its users' attitude towards preserving the cleanliness and purity of *masjid*. It can also be perceived that the public awareness of the issue of cleanliness and purity is present but needs to be greatly improved. It needs to be propagated that the responsibility in protecting these aspects rests not only upon the *masjid* management, but also the shoulder of the Muslim community collectively. This effort is ultimately to strengthen the confidence of the congregation in respect with their *ibadah* (worship). The findings also act as a stimulant aiming towards modification of existing policies and guidelines such as MS2577 and MS1184.

REFERENCES

- Abd Hamid, A.B. *et al.*, 2015. "Ablution Design: The Concepts and Design Criteria" in *Proceedings of the 2nd International Colloquium of Art and Design Education Research (i-CADER 2015*), pp. 487–496. Available at https://doi.org/10.1007/978-981-10-0237-3_48.
- Abdul Rahim, A. and Abd. Samad, N.A., 2014. "Universal Design from Islamic Perspective: Malaysian *Masjid*". *Journal of Architecture, Planning and Construction Management*, Vol. 4, No. 2, pp. 1–13.
- Ahmad Sarkawi, A., et al., 2016. "Islamic Principles and Malaysian Guidelines Relating to the Provision of Surau at Petrol Station" in 3rd International Conference on Masjid, Zakat and Waqf (IMAF 2016), pp. 60–70. Retrieved from https://www.abc.se/home/m9783/ir/h/219.html.
- Al-Fawzan, S., 2005. A Summary of Islamic Jurisprudence, 1st Edition. Riyadh: Al-Maiman Publishing House. Retrieved from https://islamfuture.files.wordpress.com/2010/04/a-summary-of-islamic-jurisprudence-volume-1.pdf.





- Baz, A.-A. bin A., 2007. *The Nine Conditions for Prayer*. Retrieved from https://theclearsunnahh.wordpress.com/2007/02/22/the-nine-conditions-for-prayer/ on November 26, 2018.
- Department of Standard Malaysia, 2014. *Malaysian Standard* 2577:2014. Cyberjaya: SIRIM Berhad.
- Gauvain, R., 2002. An Analysis of the Sunni Islamic Concept of Ritual Pollution in Light of Previous Research into Pollution Ideas. University of Glasgow. Retrieved from http://theses.gla.ac.uk/1004/1/2002gauvainphd.pdf.
- Hasan Lam, 2018. "Cleanliness of Mosques". Retrieved from http://www.zhic.ae/en/Articles/ArticleDetails.aspx?Article=cleanliness.of.mosques on November 21, 2018.
- Honorene, J., 2017. "Understanding the Role of Triangulation in Research", *Scholarly Research Journal for Interdisciplinary Studies*, Vol. 4, No. 6, pp. 31. Retrieved from www.srjis.comwww.srjis.com.
- Johari, N.H., *et al.*, 2013. "A Behaviour Study on Ablution Ritual among Muslim in Malaysia" *Procedia: Social and Behavioral Sciences*. Vol. 106, pp. 6–9. Available at https://doi.org/10.1016/j.sbspro.2013.12.002.
- Mokhtar, A., 2005. *Design Guidelines for Ablution Spaces in Mosques and Islamic Praying Facilities*. Sharjah: American University of Sharjah. Retrieved from www.aus.edu.
- Nashirudin, M.A.S. and Jasmi, K.A., 2008. *Pengurusan Berkualiti Memacu Kecemerlangan Pengurusan Masjid*. Skudai: Penerbit UTM Press. Retrieved from https://www.researchgate.net/publication/293097655_Cadangan_Penyediaan_tempat_Wuduk_yang_Efisien.
- Omer, S., 2017. A Code of Conduct for Establishing and Using Mosques. Retrieved from http://aboutislam.net/reading-islam/research-studies/a-code-of-conduct-for-establishing-and-using-mosques/ on November 26, 2018.
- Perlmutter, D., 2014. "The Demand for Purity: The Nature of Islamist Symbolism, Protest, and Violence". *Anthropoetics* pp. 19. Retrieved from http://anthropoetics.ucla.edu/ap1902/1902Perlmutter/#b7.
- Abdul Rahim, A., et al., 2015. "Masjid for All: Access Audit on Masjid Sultan Idris Shah, Ipoh, Masjid Negeri, Seremban, and Masjid Tunku Mizan Putrajaya. Putrajaya, November 23rd & 24th, 2015. 4th International Conference on Universal Design in the Built Environment 2015.
- Sarantakos, S., 2005. Social Research. Third Edition. New York: Palgrave Macmillan.



AUTHORS

First Author: **SITI HANISAH ABDULLAH**, Master student, Department of Architecture, KAED, IIUM [e-mail: hanisah.abdullaho7@gmail.com].

Second Author: **ASIAH ABDUL RAHIM**, Professor, Department of Architecture, KAED, IIUM: [e-mail: address arasiah@iium.edu.my].



