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Sustainable Mosque Designs from the Perspectives of Social Inclusion: Comparisons of Four Mosques in Kuala Lumpur, Malaysia

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Abstract: One of the major conflicts continuously occurring in Malaysia is the issue of race and religious relationships. Today, houses of worship in Malaysia have always been seen as isolated entities that can add to race relations and nation-building conflicts. This issue has led to the planning of houses of worship as nation-building elements in forging social inclusion among the different religious buildings of other faiths. Therefore, this research aims to evaluate mosques' social inclusion characteristics, which can contribute to the more extensive framing of Malaysian planning policy on the sustainable design of houses of worship. To reflect the ideal of SDG 11, Sustainable cities and communities and SDG 16, Peace, justice and strong institutions, it is essential to identify social inclusivity as one of the primary design approaches for any Islamic institutions and mosques designs. Should the mosques be part of the nation-building entities and not just community centres for each faith? This research covers selected case studies mainly in Kuala Lumpur, representing the city with the most educated and diverse multi-faith context. Four significant mosques were selected and studied through observations and interviews data collection approach. The research findings indicate that elements such as scale, massing, permeability, visibility, territoriality, and iconic imagery are essential to design criteria for mosques. Significantly, this research provides suggestions and guidelines for designers and committee leaders of all religions in Malaysia to re-look at the activities and planning aspects of their houses of worship. Furthermore, it helps to promote inclusive elements such as social interaction, tolerance, and understanding of different religious beliefs. Hence, accepting these multi-faith centres will create a more integrated, harmonious and sustainable community.

Keywords: Mosques, sustainable designs, social inclusions

1. Introduction

For the past few years, there have been lots of racial conflicts and religious intolerance incidents in Malaysia, such as the attempt of bible burning, the Low-Yat fighting and beatings, the Taman Austin Friday Prayers incident, and a lot more. These few unacceptable incidents require our attention to these religious mistrusts among the Malaysian

community. Many have raised that these issues are due to today's educational system and irresponsible political opportunism. However, very few have pointed out that mosques, temples, churches, and other religious buildings play significant roles in destroying or restoring harmony in Malaysia.

As an extension to the typical communal facilities in a city or neighbourhood, a religious centre is one of the third places where social interaction, sharing of knowledge, community assembly and engagement, and expression of feelings could strengthen the communal bond (Jeffres et al., 2009). One key element of forging a better relationship among the Malaysians is when they are no longer feared to attend activities and use specific spaces in a house of worship, not of their own faiths only. As most mosques in the United States of America welcome non-Muslims to show signs of openness to the rest of the community, Malaysia should also have a policy of space sharing imposed on all houses of worship to bring the various communities together (Utaberta et al., 2021).

This research is focused on the mosque as chosen religious place to evaluate its significance from the perspective of social inclusion. Previous scholars have highlighted that mosques should be an ideal space for Muslim and non-Muslim communities to engage in social and communal activities (Najafi & Shariff, 2011). Thus, the question arises whether the current mosques in Kuala Lumpur portray inclusive quality and imageability. Or are the present mosques exclusively for the Muslim community? Therefore, this research aims to evaluate a mosque's social inclusion character, which leads to the larger framework in designing the houses of worship as not solely meant for worshipping but also as part of the community centres. Incorporating social inclusivity as a primary design approach for any Islamic institutions and mosques aligns with the ideals of both SDG 11 (Sustainable cities and communities) and SDG 16 (Peace, justice, and strong institutions). By fostering an inclusive environment, these institutions can contribute to creating more sustainable and harmonious communities while promoting peace and strong social connections (Sobri et al., 2021).

2. Literature Review

2.1 Religious Tension in A Multi-Faith Country

In Malaysia, there has been a rise in this religious tension in the last twenty years. One of the controversial issues was the use of the word 'Allah' in the Malay translation of the Bible, especially in Sabah and Sarawak regions. The Bibles were confiscated in Peninsular Malaysia, which later caused the church to take the Selangor Religious Department to court. Unfortunately, it led to another issue: some Malay activist groups started to protest and threatened to burn the Bibles (Malay Mail, 2014). Even though they did not carry out the threat, they did vandalise several churches with arson and paint smears. Besides that, another incident suspected to be the work of agent provocateurs was the suspicious tragedy of a pig head wrapped and thrown into the mosque. Lastly, demolishing a Hindu Shrine in the Kedah area created tensions and dissatisfaction among the Indian communities and political parties (Malaysiakini, 2020). Eventually, these lead to whether we are now living harmoniously without riots based on religious mistrust and tensions.

2.2 Research on Mosque

The word "mosque" is derived from the Arabic word "sajada", which means "prostrate", where it refers to the place for sujud. Mosques have always been considered the hub for the Muslim community, where communal activities and integration transpired. Today, mosques have been the focal hub for the Muslim community to perform their religious, political, social, and educational activities (Rudner et al., 2020).

Mosque architecture generally falls into four main categories in any academic writing. The first is typology which focuses on the design issues relating to identity and aesthetic aspects (Mazloomi et al., 2014). The second depicts mosques as community centres which help create a socially conscious society (Najafi & Shariff, 2014). The third issue of the mosques focuses on the technological issues and sustainability of light or water usage and other aspects of utilities (Asif et al., 2018). The final contemporary issue highlights the potential of mosques being a centre to unite all the communities and offer a sense of harmony among all the different races and faiths (Rasdi, 2017).

Therefore, this research is conducted to gather the related data to cater for the fourth research category in evaluating the friendliness of the mosque's designs through various building elements and principles applications. These friendly elements should be implemented in all future mosques, while the unfriendly ones shall be optional for designers.

3. Methodology

The research was based on the qualitative case study method, which covers interviews, structured surveys, observations, and document reviews. The main methods used by the researchers are observation and structured interviews. Four significant mosques in the Kuala Lumpur area were selected for the comparative sampling. These samplings were based on a few selection criteria, such as the demography favouring no race and religious adherents. In addition, the inhabitants are generally middle to high levels of educated groups with moderate to high-income earners. The case studies chosen should also be allocated within the diverse urban areas. The mosques are primarily used for religious functions and have been operating for the last ten years.

3.1 Observations

The observation was executed by evaluating the mosques' spaces, forms, and other architectural elements based on architectural drawings and photographs.

The following are the evaluation criteria includes:

- Perception: The Scale and massing should be proportionally related to the surrounding buildings to present a friendlier image.
- Visual Permeability: Community activities and building elements, especially the main entrance, should be obvious to users and the public to create the message of 'welcoming' and 'sharing' with outsiders.
- Visibility: Gates and fence designs, such as height and material, should be considered to provide better visual access and a sense of publicness.
- Territoriality: Furniture such as seating, planter boxes and gazebos in the area suggests a more public space instead of just pavements. Users can freely use outdoor spaces and furniture to conduct their activities.
- Perception: Iconic imagery provides a reminder of conflicts between historical religions. The less the building defends its historical identity, the more friendly it becomes.

3.2 Structured Interviews

These structured interviews were held with the mosque committee members. Besides that, interpretive analysis was executed based on the social media postings of the events and activities in the mosques. The interviews with the mosque committee were conducted based on the following structured set of questions:

- Are there any spaces that someone of different faiths can use without asking special permission, e.g., cafeteria, parking, playground, shops, toilet, shelter, food aid store?
- Are there any spaces that a different faith can use with permission given?
- Are there any spaces other faith cannot enter unless under conditions such as wearing a robe, using special mats, or covering the head?
- What social activities have been organised that invite other faiths to come? In which space do they occur?
- What kind of educational activities are open for other faiths to attend? In which space do they occur?
- What kind of special events and activities has been done that allow other faiths to attend? In which space do they occur?
- What kind of religious celebrations does the mosque/church organise for other faiths? In which space do they occur?
- What kind of religious celebrations of the religion allows other faiths to attend? In which space do they occur?

3.3 Case Studies

3.3.1 Sultan Abu Bakar Mosque, Bangsar

Sultan Abu Bakar Mosque (Figure 1) is located at Jalan Ara, Bangsar Baru, Wilayah Persekutuan Kuala Lumpur which was designed by Datuk Hajeedar Abdul Malik. It was constructed in 1979 and completed in 1982. The mosque is surrounded by landed houses near the renowned Bangsar Village Shopping Mall. A bus station 200 metres away from the mosque offers visitors an option of public transport.

The mosque consists of three levels. The mosque's ground floor has classrooms for religious classes, office space, and a public library. A multipurpose hall that can accommodate up to 200 people with an adjustable wall partition is for conferences, religious classes, a public canteen, a public toilet, and places for ablution. Whereas the first floor houses the main praying space for daily use for up to 1,000 people, the other spaces have a maximum capacity to accommodate 4,000 people during Friday prayers. The second floor consists of additional space for Friday prayers and special occasions. The west side of the building is attached to classrooms and offices for the young religious school, Sekolah Rendah Agama Abu Bakar Al-Siddiq. The east side of the mosque comes with accommodation to house the Imam and multilevel parking spaces dedicated to the administration.

Fig.1 - Front view of the Sultan Abu Bakar Mosque
(http://2010694046.blogspot.com/2011/02/sejarah-dan-kegiatan-masjid-saidina-abu.html)

3.3.2 Alam Shah Jamek Mosque, Pudu

Alam Shah Jamek Mosque (Figure 2) is a well-known Islamic architectural structure in Pudu, Kuala Lumpur. The mosque is located nearby IKEA Cheras, MY TOWN Shopping Mall and the Cochrane MRT station. Alam Shah Jamek Mosque was built in 1951 and temporarily closed in 2015 for renovation purposes. The original Alam Shah Jamek Mosque was previously a one-story building. However, the building was demolished and rebuilt as a two-story height with more extensive areas with new facilities such as classrooms, wedding halls, a funeral management room and more parking spaces. Previously, users' major issues were the hall's small size, less parking space and flooding issues during the rainy season. Therefore, restructuring the mosque included relocating all other spaces such as the hall, prayer space, office and classroom located at the upper level to prevent the flood from damaging furniture and documents.

Fig.1 - Entrance view of the Alam Shah Jamek Mosque
(https://www.bharian.com.my/bhplus-old/2017/03/255262/transformasi-masjid-jamek-alam-shah)

3.3.3 Al-Mujahideen Mosque, Damansara Utama

Al-Mujahideen Mosque (Figure 3) is located near the roundabout of Damansara Utama and intersects with the Damansara Uptown area. The Al-Mujahideen Mosque is surrounded by more than two shopping malls and many retail shops. Two bus stations near the mosque allow the public to walk to the mosque for prayer and other activities. The mosque is surrounded by residential houses, particularly at the rear of the mosque. The main gate is on the front side of the mosque and is open to all for prayers and visiting. The second entrance is from the school, which is only open a few times for the kids and parents to enter for class attendance. This school entrance also leads to the mosque. The third entrance is at the mosque's rear, with an existing gate serving the residents. The rear of the mosque has a small park and seating area with few parking spaces providing an open area for the public, especially Muslims who live around the mosque, to come and relax and use the area at any time.

Fig. 3 - Entrance view of the Al-Mujahideen Mosque
(https://pay.infaqyide.com.my/institusi/masjid-al-mujahideen--damansara-utama)

3.3.4 Federal Territory Mosque, Segambut

The Federal Territory Mosque (Figure 4) is located near Matrade Complex and the Federal Government Complex off Jalan Duta in the Segambut District. It is influenced by the 16th-century Ottoman Blue Mosque in Istanbul, Turkey, incorporating Islamic and Malay architectural elements. The design of the Federal Territory Mosque is based on primary geometric forms with natural earth tones. Numerous entrances and guiding signs provide optimum accessibility and convenience for all visitors. The mosque has facilities such as the grand prayer hall, multipurpose hall, banquet hall, wedding hall, seminar rooms, library, computer labs, students' accommodations, and guest rooms. These all-inclusive facilities are ideal for hosting both large and small events. All the facilities cater to the needs of various activities such as praying, gaining knowledge and socialising.

Fig. 4 - Entrance view of the Federal Territory Mosque
("Photo by CEphoto, Uwe Aranas")

4. Findings and Discussions

4.1 The Architectural Elements of Studied Mosques in Affecting The Less Isolationist Image Within A Multi-Faith Community Urban Context

Table 1 below shows the comparisons among the four mosques in Kuala Lumpur subjected to the evaluations of five architectural elements: scale and massing, permeability, visibility, territoriality, and iconic historic imagery (Kanesh, Rasdi, Jean, & alDarahirst, 2018).

Table 1 - The Comparisons of Architectural Elements in Studied Mosques

CRITERIA	Sultan Abu Bakar Mosque	Jamek Alam Shah Mosque	Al-Mujahideen Mosque	Federal Territory Mosque
1)Scale and Massing	Scale is in the context of a two-story building only (not monumental) *Friendly*	Scale is monumental, with a single mass *Unfriendly*	Domestic scale (not monumental) *Friendly*	Monumental and single mass *Unfriendly*
2)Permeability	Can see through all the compounds, allowed access *Friendly*	Unable to see into the compound with high fences *Unfriendly*	Can see through the fences *Friendly*	Good visual access into the mosque building *Friendly*
3)Visibility	Low and transparent fences can see through the main prayer space: *Friendly*	High Fences and no visual access *Unfriendly*	Unable to see clear through to the prayer space *Unfriendly*	Good visual access into the compound *Friendly*
4)Territoriality	Planter boxes around the fences for seating and softness: *Friendly*	Planter boxes and stairs to seat on one side only *Unfriendly*	No furniture or planter boxes *Unfriendly*	No landscape furniture *Unfriendly*
5)Iconic Imagery	The dome and minaret do not overpower the modern features: *Friendly*	The strong dome and ornamentation alienate the building from the context *Unfriendly*	Two domes and solid Islamic patterns on the wall *Unfriendly*	Complete imitation of iconic historic imagery *Unfriendly*

Regarding scale and massing issues, both the Federal Territory Mosque and Alam Shah Jamek Mosque express monumental presence that alienates the surrounding urban and social contexts. The other two mosques (Sultan Abu Bakar Mosque and Al-Mujahideen Mosque) are more to a scale of the urban's three-storey heights, which reduces the monumental outlook and results to be more friendly design. Besides that, it is noticeable that mosques using literal

iconic historical imagery of the past traditional mosques would have to follow the scale and massing of those mosques, which leads to an unfriendly outlook (Kanesh et al., 2018).

All these mosques, except for Alam Shah Jamek Mosque, have excellent quality in both their permeability and visual access to the main compound of the mosques, which brings in a more friendly posture (Jaffar et al., 2020). Alam Shah Jamek Mosque and those other mosques without visual access are considered less friendly and more private.

Significantly, those mosques without strong territoriality sense make the users 'own' the mosque within their neighbourhood (Ng et al., 2022). These mosques were designed without fences, and landscape furniture was considered thoroughly to avoid encroaching onto the municipality areas. Thus, considerations of providing seating and planter boxes for seating as part of the initial design of these mosques rather than constructing fences around the site.

In conclusion, Sultan Abu Bakar Mosque is considered the friendliest design of mosques with the view from an urban context, whilst the others are more exclusive and reserved.

4.2 The Spatial Characteristics of Studied Mosques in Encouraging Multi-Faith Communities To Visit and Use

Structured interviews were conducted with the mosque committee members and can be summarised in Table 2 below.

Table 2 - The Comparisons of Spatial Characteristics in Studied Mosques

CRITERIA	Sultan Abu Bakar Mosque	Jamek Alam Shah Mosque	Al-Mujahideen Mosque	Federal Territory Mosque
1) Designated Spaces	Warung/ Stalls Toilets	None	Toilets	Multipurpose Hall, Toilets
2) Approved Spaces	Parking Area Lecture Halls	None	Seminar Rooms	Seminar Rooms, Banquet Hall
3) Restricted Spaces	Dress Codes Required	Dress Codes Required	Dress Codes Required	Dress Codes Required

All the mosques are open to visitors using facilities such as toilets, parking areas and halls. The Sultan Abu Bakar Mosque allows the public with its spaces for parking, toilet, and accessible Charity Storage Room that allows anyone to take food provisions. The Federal Territory Mosque also allow halls to be used by others within the moral code of Islam. Most mosques require some dress code for the others to traverse through all the spaces. Even though most mosques are quite reserved in allowing public access to the various spaces, these two mosques, the Sultan Abu Bakar and Federal Territory Mosque have begun a new tradition for others to be inspired by them.

4.3 The Activities Conducted in the Studied Mosques in Encouraging Multi-Faith Communities to Participate

It is also heartening to see that three of the mosques, except for Alam Shah Jamek Mosque, have some activities for the community at large. The 'Zero Hunger Kitchen' or free drinks have almost become a norm, which are excellent services provided to all humankind. Education for children and adults is also a good indication of forging a communal brotherhood among all the mosques except one. Based on Table 3, Sultan Abu Bakar Mosque stands out more than the rest since it also organises other faith celebrations, such as the Chinese New Year and Deepavali celebrations.

Table 3 - The Comparisons of Conducted Activities in Studied Mosques

CRITERIA	Sultan Abu Bakar Mosque	Alam Shah Jamek Mosque	Al-Mujahideen Mosque	Federal Territory Mosque
1)Social Activities	Family Day, Drive-Thru Drinks, Zero Hungry Kitchen	None	Health Screening and Food Bank	Mosque Tour
2)Education Activities	Tuition	None	Fire Safety	Calligraphy
3)Special Activities	Motivation Camp	None	Marriage	Open Day, Dialogues Harmony, and Martial Arts

4) All Faiths Celebrations	Chinese New Year and Deepavali	None	None	None
5)Religious Celebrations	Eid Celebration and Prophet's Birthday	None	Eid Celebration and Prophet's Birthday	Eid Celebration and Ramadhan

5. Conclusion

Based on the studies of the four mosques, Sultan Abu Bakar Mosque in Bangsar expresses the ideals of social inclusion adopted in sustainable mosque designs (Sobri et al., 2021). It is reflected through the friendliness of the Sultan Abu Bakar Mosque's architectural elements, suggesting acceptance of visitors even to the non-Muslim communities. In the context of multi-faith community participation, Sultan Abu Bakar Mosque is open to hosting non-Muslim festival celebrations, such as Chinese New Year and Deepavali, which is an ideal mosque that functions as the focal multi-faith community centre. These activities indirectly can attract non-Muslims to visit the mosque more frequently and perhaps actively participates in the mosque's activities in the future.

Significantly, architects and designers should pay attention, especially to the aspects of territoriality and iconic imagery for any mosque's designs. It is essential to create an approachable image with a sense of belonging. For example, the landscape furniture for seating can be incorporated within the compound to act as mosque fencing. It will simultaneously function as a seating area and invisible fence, attracting more multi-faith visitors instead of a rigid and solid fence that will portray the exclusivity image of the mosque to only Muslim visitors. Besides that, the use of modern architectural language in the regional style is encouraged to avoid the monumental and flashy images of a sacred building. The design of mosques can now be broken up in their massing and scale, thus making them more in context with the urban and sub-urban levels and settings. Finally, the mosque committee needs to address the importance of non-Muslim participation in the activities and events conducted by the mosque by organising more activities which require multi-faith communities' involvement.

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Figure 1. Front view of the Sultan Abu Bakar Mosque. (http://2010694046.blogspot.com/2011/02/sejarah-dan-kegiatan-masjid-saidina-abu.html)

Figure 2. Entrance view of the Alam Shah Jamek Mosque.

(https://www.bharian.com.my/bhplus-old/2017/03/255262/transformasi-masjid-jamek-alam-shah)

Figure 3. Entrance view of the Al-Mujahideen Mosque

(https://pay.infaqyide.com.my/institusi/masjid-al-mujahideen--damansara-utama)

Figure 4. Entrance view of the Federal Territory Mosque.

("Photo by CEphoto, Uwe Aranas")

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