ASLI QoL 2025 Annual Serial Landmark International Conference on QoL 2025 Indexed in Clarivate Analytics WoS



$oldsymbol{A}$ QoL2025Cherating



https://www.amerabra.org/

09th Asia-Pacific International Conference on Quality of LifeHoliday Villa Beach Resort & Spa, Cherating, Malaysia, 17-18 Oct 2025

Evolving Heritage: Alteration trends in Selangor's pre-independence mosques

Khairin Izzatul Nabila Khairil¹, Shahrul Yani Said^{2*}, Nik Farhanah Nik Azhari³, Jonny Wongso⁴
*Corresponding Author

¹ IPSis, Faculty of Built Environment, Universiti Teknologi MARA, Shah Alam, Selangor, Malaysia
 ² Institut Seni Kreatif Nusantara (INSAN), Universiti Teknologi MARA, Shah Alam, Selangor, Malaysia
 ³ Centre of Studies for Architecture, Faculty of Built Environment, Universiti Teknologi MARA, Kampus Puncak Alam, Malaysia
 ⁴ Fakultas Teknik Sipil dan Perencanaan, Universitas Bung Hatta, Padang, Sumatera Barat, Indonesia

2021722953@student.uitm.edu.my, shahrulyani@uitm.edu.my, nikfarhanah@uitm.edu.my, jonnywongso@bunghatta.ac.id Tel: +603-5544 8119

Abstract

This study investigates the architectural significance of Selangor's pre-independence mosques, focusing on how alteration trends respond to contemporary needs while sustaining Islamic practices. Many heritage mosques have transformed, risking the loss of their historical value. Through qualitative visual analysis and literature review, the research highlights the challenge of balancing functional adaptation with heritage preservation. Conservation efforts, including gazetting under the National Heritage Act (Act 645), aim to protect these irreplaceable cultural assets. The findings contribute to heritage discourse by proposing a framework that reconciles historical integrity with modern usage demands.

Keywords: Pre-independence mosques; Alteration trends; Architectural significance; Selangor and Kuala Lumpur

eISSN: 2398-4287 © 2025. The Authors. Published for AMER by e-International Publishing House, Ltd., UK. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/). Peer–review under responsibility of AMER (Association of Malaysian Environment-Behaviour Researchers). DOI: https://doi.org/10.21834/e-bpj.v10i34.7362

1.0 Introduction

Most heritage mosques, each with a unique historical background, reflect deeply rooted cultural and religious beliefs. They were constructed during significant historical periods, influenced by the wisdom of rulers in promoting Islamic teachings. A heritage building can be identified by its architectural style, characterised by features that reflect its heritage, either in the building materials or construction methods, highlighted through elements or forms that give character to a place.

In Selangor, the evolution of the State Mosque reflects both historical continuity and demographic change. The first State Mosque of Selangor was the Bandar Mosque, now known as the Masjid Diraja Sultan Alaeddin, built in Kuala Langat during the reign of Sultan Ala'uddin Suleiman Shah. The status shifted to the Masjid Diraja Sultan Suleiman in Klang and subsequently to the Sultan Salahuddin Abdul Aziz Shah Mosque in Shah Alam, completed in 1988. Chronologically, these mosques reflect the increasing population and changes in administrative areas. The Sultan Alaeddin Mosque initially could accommodate 500 congregants. Similarly, the Sultan Suleiman Mosque before expansion of the prayer space from the early 1950s to the 1980s. The modern State Mosque of Selangor can accommodate an estimated 24,000 congregants in the Shah Alam area at a time (Permodalan Negeri Selangor, 1993), which is approximately 48 times the capacity of the heritage mosques.

Constructing sustainable buildings requires skilled and experienced workmanship (Baharudin & Ismail, 2014), especially in existing buildings. Modern interventions, if conducted without regard for historical and architectural value, risk accelerating or worsening the

eISSN: 2398-4287 © 2025. The Authors. Published for AMER by e-International Publishing House, Ltd., UK. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/). Peer–review under responsibility of AMER (Association of Malaysian Environment-Behaviour Researchers). DOI: https://doi.org/10.21834/e-bpj.v10i34.7362

deterioration of these structures. Therefore, to sustain a place's identity through heritage mosques, it is essential to understand their significance through architectural evidence. At the very least, this aspect can still be preserved without disregarding the evolving concept of the mosque, which has seen changes in design and function to accommodate larger congregations and modern amenities. This study aims to provide valuable insights for decision-making regarding any proposed alterations during the conservation of heritage mosques.

2.0 Literature Review

2.1 The concept of mosque

A mosque is an Islamic building dedicated to the worship of Allah. Regardless of its architectural style and socio-cultural background, the siting and allocation of space must fulfil religious needs, ensuring nothing deviates from the concept of the mosque and its relation to Islamic principles. The mosque is also a centre of Islamic teaching and a symbol of Islam's greatness (Abdul Halim Nasir, 1995). Asif et al. (2019) also mentioned that the term "mosque" fundamentally refers to an institution that serves as the house of Allah, where believers prostrate in worship as an expression of their faith.

In Malaysia, the term "masjid" refers to a building where Friday prayers are held. Buildings used for daily prayers but not Friday prayers are called "surau," or sometimes "langgar" by Peninsular Malays of Javanese descent. Regardless of pronunciation, "masjid" is a commonly used word among Malaysian Muslims, especially in the Peninsula (Abdul Halim Nasir, 1995). According to Kahera et al. (2007), the term masjid (mosque) means "a place of prostration." Unlike churches or synagogues, the mosque does not adhere to a predetermined architectural style or form; the act of prostration itself fundamentally shapes its spatial identity. This is particularly significant because Islamic worship (*ibadah*) is not confined to a specific architectural setting, whether enclosed or open, but is instead bound to designated times of prayer. Central to the concept of the mosque is the *qibla*, the spiritual axis that orients both the worshipper and the structure toward Makkah (Mecca). This orientation is a universal, outward expression of faith observed in mosques worldwide. The *qibla* is typically marked by the *mihrab*, the niche indicating the direction from which the imam leads the congregation in prayer.

2.2 Mosque styles and characteristics in Malaysia

Malaysia is one of the countries actively involved in preserving and conserving heritage buildings, including places of worship such as mosques with unique designs and high historical heritage value. Muslims build mosques for performing prayers and other activities related to Islamic interests; hence, their architectural style must meet these needs. Other factors influencing the architectural style include climate, topography, environment, and the way of life of the society, each with its cultural patterns. In Peninsular Malaysia, mosques fall into two categories based on architectural style: those influenced by traditional and regional styles and those influenced by styles from outside the region, such as Middle-Eastern and Indian Muslim styles (Abdul Halim Nasir, 1995)

The earliest mosques in Malaysia were likely timber structures similar to traditional Malay houses. Unlike these residential forms, which were predominantly rectangular until the early 20th century, mosques began adopting a square layout with tiered roofs as early as the 18th century, a trend that continued into the 19th century. The 15th-century Agung Mosque inspired this architectural style in Demak, northern Java. Reflecting the timber construction traditions of Malay houses and palaces, these mosques were elevated above ground to protect against insect damage and flooding. Around the same period, a distinctive Melakan-style mosque emerged. Also built on a square plan but directly on the ground, these mosques were initially wooden and later constructed with masonry. They featured curved eaves with *sulur bayur*, pagoda-like minarets, and stylised Oriental ornamentation (Chen, 1998).

Similar to Negeri Sembilan, mosques often reflect the socio-cultural identity of their region. For example, in Negeri Sembilan, particularly in the Kuala Pilah district, the influence of Minangkabau culture is evident in the upward-slanting *mihrab* roof design. The design is featured in Masjid Kuala Serdang, Masjid Parit Istana, and other mosques in the region. According to A. G. Ahmad (1999), mosque architecture in Malaysia can be classified into three main styles based on historical periods: the Vernacular, Colonial, and Modern. In contrast, other researchers such as Tajuddin and Utaberta proposed a more detailed classification system for mosque architecture in the Malay Archipelago, identifying seven distinct styles: Traditional Vernacular, Sino-Eclectic, Colonial, North Indian, Modern Vernacular, Modernistic Expressionism, and Post-Modern Revivalism.

The architectural styles identified by previous researchers may serve as valuable indicators. They can be cross-referenced on site to identify stylistic similarities in mosques built in Selangor during the post-independence period. As a result, mosques have different architectural styles, each with distinctive features.

2.3 Islam's influence on mosques in Selangor and Kuala Lumpur during the pre-independence era

The state of Selangor Darul Ehsan is one of the 13 states and federal territories that form Malaysia. It is located in the central region of Peninsular Malaysia's west coast and surrounds the Federal Territories of Kuala Lumpur and Putrajaya. Selangor shares borders with Perak to the north, Negeri Sembilan to the south, Pahang to the east, and the Strait of Malacca to the west. The state has a long-standing tradition of practising a constitutional monarchy (Abdullah & Md. Yatim, 2012).

The acceptance of Islam in Selangor is believed to have taken root as early as the 15th century, which aligns with the Islamization activities in Melaka. At that time, several old regions in Selangor, such as Jeram, Permatang, and Klang, were under the rule of Melaka. However, the arrival of Islam in Selangor coincided with the broader wave of Islamization in the Malay Archipelago, Abdullah & Md. Yatim (2012) mentioned that the rapid development of Islam in Selangor may have occurred around the 17th and 18th centuries, during the mass migration of people from Java and Sumatra to the west coast of the Peninsula, particularly to Johor and Selangor.

Selangor, a state in Malaysia, is closely associated with mosques built during the sultanate's reign. Although the first mosque from

the time of the state's founder, HRH Sultan Salehuddin, in 1766 was not recorded, the earliest documented mosque was built in 1876 in Klang, one of Selangor's earliest administrative centres during the reign of Sultan Abdul Samad, the fourth Sultan of Selangor from 1857 to 1898 and the crown prince, Sultan Ala'uddin Suleiman Shah.

Sultan Ala'uddin Suleiman Shah, the fifth Sultan of Selangor, successfully promoted mosque building (Kadir & Mothar Rijan, 2018) (Abd Jalil, 2021). For Muslim communities, constructing a mosque is both a spiritual and practical achievement. Villages initially had small prayer houses (surau) and grew until they needed a mosque for a congregation of 40. Fundraising was necessary and could take years, with money often kept in the local treasury (Gullick, 2022). When Malays converted to Islam in the 15th century, they did not immediately adopt Middle-Eastern mosque designs. They used the same materials as their houses, often building wooden mosques on stilts with openings for air circulation, similar to traditional heritage mosques seen today (Gullick, 2022).

As for a mosque built of brick, it usually kept the same design with a tiered roof. Only in modern times have large mosques been constructed in the traditional Middle Eastern style, featuring domes and minarets. The first such mosque in Selangor is the Jamek Mosque in Kuala Lumpur, designed by Arthur Hubback, who also designed the Sultan Abdul Samad Building and Kuala Lumpur Railway Station. Sultan Ala'uddin Suleiman Shah helped fund it, and it opened in 1909 (Abd Jalil, 2021).

The British ruled Malaya for 160 years. Since 1896, Kuala Lumpur has served as the administrative headquarters and capital of the Federated Malay States. Strategically located in the Peninsula, it is well connected to Malacca, Penang, and the coastal port of Klang. The British constructed numerous buildings in Kuala Lumpur, which are easily recognisable by their distinct 'English' character (Ng, 2022). These buildings reflect the skills and traditions of British architects and builders, as many architects who designed public buildings during the British colonial period were influenced by Mughal architecture due to their extended stay in India (Ali & Hassan, 2018). The designs combine textures and technologies that the British had experimented with in other parts of their empire.

However, this does not imply that local contributions were absent. Gullick (2022) mentioned that Sultan Ala'uddin Suleiman Shah also organised the construction of a new mosque at Bandar Langat, completed in 1926. He contributed to the design and woodworking, including the carving of the pulpit's chair, moulding of the pillars, stained glass windows, and cement floor. An inscription on the exterior wall recorded these contributions and the mosque's opening by the Sultan (Chin et al., 2003).

2.4 The relationship between mosque space and architecture in pre-independence Selangor and Kuala Lumpur Generally, an old mosque in this region, including those in Selangor, can be divided into several main spaces: the main prayer hall, the women's prayer area, and the ablution area. The main prayer hall typically includes the *mihrab*, a small niche that may be curved, elongated, or rectangular, which marks the place where the imam leads the prayer. This area also usually contains the *mimbar*, a raised platform from which the imam delivers the sermon while facing the congregation (Abdullah & Md. Yatim, 2012).

The women's prayer area is usually designed to be enclosed or separated from the men's prayer area, typically located at the rear left section of the mosque. In some mosques, this separation is made using a temporary curtain, which can be removed during certain occasions, such as Friday prayer, to accommodate more male worshippers at a time. In older mosques, the ablution area often features a *kolah* or large water pool, which is still commonly used in many old mosques today (Abdullah & Md. Yatim, 2012). These features are also present and preserved in Selangor's old mosques.

The architecture of pre-independence mosques in Selangor and Kuala Lumpur reflects a distinctive spatial character shaped by regional and historical influences.

2.5 Alterations in pre-independence mosques

Discussing heritage monuments, it is important to recognise that, in efforts to preserve their original state, one must also understand that such structures have existed for decades and undergone various transformations. Irene A. Bierman (1995) presents a case study of a mosque in Cairo, illustrating how architecture reflects social change. These buildings are not static; however, they evolve. This architectural evolution is known as historical layering, where different historical periods leave their mark on a structure.

Irene A. Bierman through Bacharach (1995), identifies two components of a building that evolve in distinct yet interconnected ways: the exterior façade and the interior space. These elements are semi-autonomous, meaning they can change independently of one another. While the exterior often remains unchanged for symbolic or aesthetic reasons, the interior is more likely to be adapted to meet new functional needs. This duality enables buildings to endure across centuries, accommodating new uses while preserving the place's identity.

Architectural conservation refers to the action taken to prevent the deterioration of a building structure's physical condition due to various factors. The specific approach adopted depends on the building's current state and the level of intervention deemed appropriate. Common conservation strategies include preservation, consolidation, restoration, rehabilitation, and reconstruction. Buildings may deteriorate for numerous reasons, including human neglect, vandalism, natural disasters, climatic conditions, biological growth, and insect attacks (Baharudin & Ismail, 2014).

In the context of Selangor, according to a previous study by Abdullah & Md. Yatim (2012), in the book Warisan Masjid-Masjid Lama di Selangor (Heritage of Old Mosques in Selangor), published in 2012, found that among 380 mosques in Selangor recorded by the Jabatan Agama Islam Selangor, 46 mosques were built before independence (1957). However, after observation was conducted, only 34 old mosque buildings were found to still exist, while the rest had been demolished and replaced with new mosques. Among those that remain, a large number have undergone restoration, and a small portion have been completely altered in terms of their structural form and decorative style.

Regarding the concept of the mosque, Islam does not prescribe specific requirements concerning the size, whether large or small, of a mosque, nor does it set standards for the beauty or aesthetics of its structure. However, a mosque should provide comfort and

accommodate the number of congregants in a given area at a time during Friday prayers. The fundamental spatial needs discussed previously may require adequate facilities, such as the number of ablution taps, based on capacity.

A study by Alnajjar and Erdil (2024) noted that transformations, such as formal, functional, and structural changes, material use, and decorative techniques, reflect how mosque architecture has adapted to technological advancements, cultural and regional influences, evolving social functions, and environmental and sustainability concerns. It was mentioned that a previous study by Utaberta and Haraty (2021) on ablution spaces facing design and hygiene challenges identified a need for better ventilation, spatial planning, and user management.

Some mosques have had their interior spaces upgraded, especially when the original layout no longer aligns with current requirements—for example, the qibla direction. With the advancement of modern technology, the *qibla* direction can now be determined more accurately, specifically at an azimuth of 292° in some parts of West Malaysia. A study by M. R. Ahmad et al. (2021) on the *qibla* orientation of mosques over 50 years old in Melaka found discrepancies in azimuth alignment.

Although many researchers have explored management alterations for heritage buildings, a gap remains in the literature, especially in the documentation and analysis of architectural alterations, particularly concerning pre-independence era mosques, such as those in Selangor and Kuala Lumpur. This study aims to fill that gap by identifying and analysing trends in alterations to selected pre-independence mosques, thereby contributing to a better understanding of heritage conservation in the context of evolving religious and community needs.

3.0 Methodology

This study employs a qualitative approach, utilising secondary data sources to chronologically trace the construction of mosques built prior to the independence of Malaya. The secondary data consists of archival materials, books, and scholarly literature on heritage mosques in Selangor. The list of mosques registered and documented by the Jabatan Agama Islam Selangor provides evidence of their construction and the years they were built. Among the 432 mosques recorded as of 2023, only 54 are believed to have been built before 1957. However, since the data on heritage mosques were collected after Kuala Lumpur's separation as a Federal Territory, this study also aims to include older mosques in Kuala Lumpur. The classification of mosques by district helps to understand architectural influences, as Selangor is known for its rich socio-cultural history, including Javanese, Banjares, and colonial influences. Site observations were conducted in each district of Selangor and Kuala Lumpur. The criteria for selecting mosques for this documentation include the preservation of original structural elements, particularly, but not limited to, the *tiang seri* (central column), beams, walls, and openings, as these features significantly influence mosque design. Jabatan Warisan Negara (2017) mentioned that authenticity includes building materials, design, craftsmanship, and layouts, which serve as indicators of the variables involved in alterations. This paper serves as an initial step in identifying alteration trends in architectural elements of pre-independence mosques in Selangor and Kuala Lumpur.

Table 1. The influen	ce of Sultan of Sela	angor or	n mosq	ue built	in pre-i	ndeper	dence	Selang	or and I	Kuala L	umpur	
Sultan of Selangor	State Capital	KUL	KS	KL	KG	HS	HL	GK	SG	SB	PG	Total
Sultan Ala'uddin Suleiman Shah (1898-1938)	Kuala Langat (Bandar), Klang	1	4	8	6	2	3	1	3	10	-	38
Sultan Hisamuddin Alam Shah (1938-1942 & 1945-1960)	Klang	1	4	3	1	2	1	1	1	7	-	21
Sultan Abdul Samad (1857-1898)	Kuala Langat (Bandar)	2	-	-	1	-	-	-	-	-	-	3
Total		1	ρ	11	Q	1	1	2	1	17		62

Legend: Kuala Lumpur (KUL), Klang (KG), Sabak Bernam (SB), Kuala Selangor (KS), Kuala Langat (KL), Hulu Langat (HL), Hulu Selangor (HS), Sepang (SG), Gombak (GK), Petaling (PG) (Source: Authors)

Pre-visits to the total of 62 old mosques, some of which had been fully renovated into a new modern mosque, and rebuilt on a larger scale than the previous mosque (Post-Modern Revivalism). The scope of this architectural conservation effort will focus on selected mosque types that have retained their original elements. Heritage mosques that fall outside this category will not be included. However, their conservation remains a long-term goal. It will be pursued in future research initiatives, aiming to preserve not only the architectural style of Selangor's mosques but also those across Malaysia. For heritage mosque buildings, a comprehensive investigation will be conducted, covering both interior and exterior aspects. The architectural elements considered should possess outstanding value or significance to the overall character and identity of the mosque. This paper focuses on a selection of mosques that hold significant architectural value in the context of Selangor's heritage. Mosques coded MS1 to MS9 are listed by the Jabatan Warisan Negara (Department of National Heritage). MS1 to MS3 are gazetted under the National Act (Act 645), and MS4 to MS8 are listed in the Inventory. MS10 is designated by the Jabatan Agama Islam Selangor (JAIS) as a Masjid Diraja (Royal Mosque). Table 1 lists all selected mosques that were constructed before Malaysia's independence.

Table 2. Selected of pre-independence mosques for this study								
Code	Mosque	Year	District	Main Structure	Architectural	Status		
					influence			

MS1	Masjid Diraja Sultan Suleiman	1933	Klang	Reinforced Concrete	Byzantine	Warisan Kebangsaan
MS2	Masjid Jamek Kuala Lumpur	1909	Kuala Lumpur	Brickwork	Mughal	Warisan Kebangsaan
MS3	Masjid Diraja Sultan Alaeddin	1926	Kuala Langat	Brickwork	Deli	Warisan
MS4	Masjid Raja Alang Pekan Beranang	1928	Hulu Langat	Brickwork	Deli	Inventory JWN
MS5	Masjid Peket 100, Sungai Besar	1952	Sabak Bernam	Wood	Javanese	Inventory JWN
MS6	Masjid An-Nur, Kpg Sg Hj Dorani	1949	Sabak Bernam	Wood	Javanese	Inventory JWN
MS7	Masjid Kpg Tebuk Mufrad	1932	Sabak Bernam	Wood	Javanese	Inventory JWN
MS8	Masjid Al-Muhsinin, Kpg Sg Kandis	1906	Klang	Wood	Javanese, TMH	Inventory JWN
MS9	Masjid Kpg Dato' Dagang, Jalan Kota Raja	1876	Klang	Brickwork	Javanese	Inventory JWN
MS10	Masjid Jamek Jamaiyah Morib	1957	Kuala Langat	Brickwork, Reinforce concrete	Geometrical	Masjid Pengurusan JAIS

(Source: Jabatan Agama Islam Selangor & Jabatan Warisan Negara)

4.0 Findings

Based on Table 1, the majority of mosques built in Selangor before independence were constructed during the reign of Sultan Ala'uddin Suleiman Shah. Most of these mosques exhibit British architectural influences, as British architects were predominantly responsible for the design during that period. These elements also influenced the design of the later rebuilt mosque. This influence is evident in the architecture of Masjid Diraja Sultan Alaeddin in Kampung Bandar, Kuala Langat, and Masjid Raja Alang in Pekan Beranang, Hulu Langat. The original structure of Masjid Raja Alang is believed to have been built of wood before it was later rebuilt in brickwork (Pejabat Setiausaha Kerajaan Negeri Selangor, 1903). The following Figures (1-9) illustrate common alterations to selected pre-independence mosques in Selangor and Kuala Lumpur. Table 3 summarises the following alteration trends.

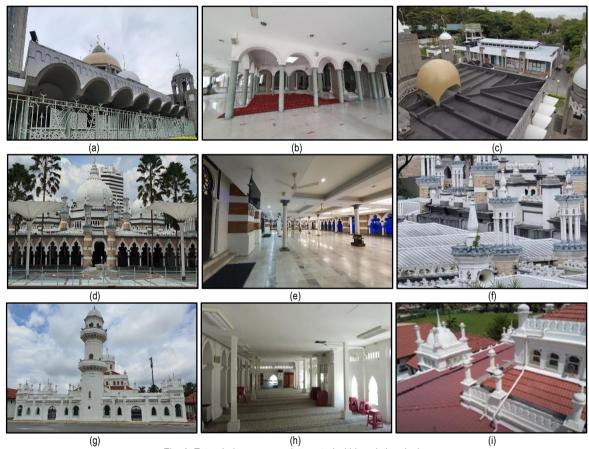


Fig. 1. Extended prayer area integrated within existing design

(a) MS1 - External; (b) MS1 - Internal; (c) MS1 - Flat roof and parachute-like dome structure

(d) MS2 - External; (e) MS2 - Internal; (f) MS2 - Hipped-M-roof design

(g) MS3 - External; (h) MS3 - Internal; (i) MS3 - Butterfly-roof design

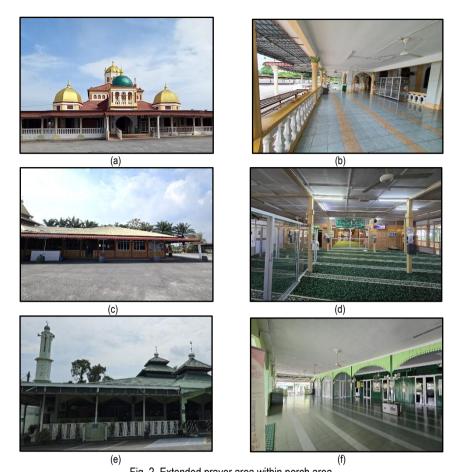
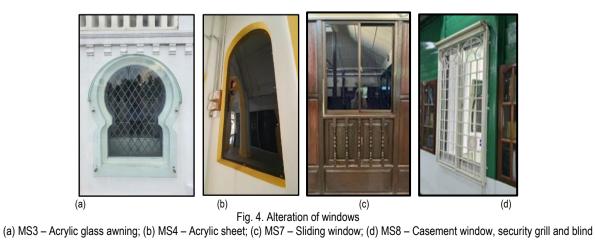


Fig. 2. Extended prayer area within porch area (a) MS4 - External; (b) MS4 - Internal; (c) MS5 - External; (d) MS5 - Internal; (e) MS8 - External; (f) MS8 - Internal



Fig. 3. Extended elevated prayer area
(a) MS9 – A view from staircase; (b) MS9 – A view from upper floor (atrium)





(a) MS4 – Security grill; (b) MS7 – Sliding door and box-up door framing; (c) MS8 – Sliding door and existing door; (d) MS9 – Sliding door



Fig. 6. Additional roof structure
(a) MS1 – Glass roof; (b) MS10 – Metal decking roof



Fig. 7. Alteration to *qibla* direction. This is more common in the Sabak Bernam district.

(a) MS5 – Main prayer hall; (b) MS5 – Placement of *Mimbar* in *Mihrab*; (c) MS7 – Main prayer hall; (d) MS7 - Placement of *Mimbar* in *Mihrab*

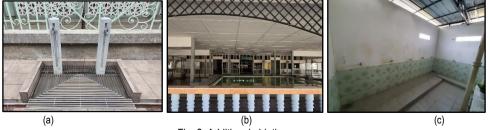


Fig. 8. Additional ablution area (a) MS1 – Ablution tap; (b) MS6 – Covered ablutions pool (*kolah*); (c) MS10 – Covered ablution tap area







Fig. 9. Ramp for Accessibility

(a) MS1 – Tiles, tactile paving and handrail; (b) MS2 – Tiles and handrail; (c) MS10 – Pebble-wash and handrail

Table 3. Alteration trends in Selangor and Kuala Lumpur's pre-independence mosques Mosques Alterations elements Extended Window Additional Qibla Ablution Ramp for direction Accessibility praver area roof area MS1 Present Present Present Present None Present Present MS2 Present None None Present None Present Present MS3 Present Present Present Present Present None Present MS4 Present Present Present Present None Present Present MS5 Present Present Present Present Present Present Present MS6 Present Present Present Present None Present None MS7 Present Present Present Present Present Present Present MS8 Present Present Present Present None Present Present MS9 Present Present Present Present None Present Present MS10 Present Present Present Present None Present Present

(Source: Authors)

5.0 Discussion

Although the list of mosques dates back to before 1957, most mosques in Selangor have since undergone major renovations or been completely rebuilt in brick and concrete, resulting in modern structures and designs. This mirrors the structural transformation described in Alnajjar and Erdil's (2024) study, in which traditional materials such as wood and stone are replaced or supplemented with reinforced concrete, steel, and glass to support larger, more durable structures. Many of the mosques studied have undergone extensions to their prayer areas. Examples of these expansions can be seen as designed to integrate seamlessly within the mosque's original architectural plan or utilise available open spaces. Notable examples include Masjid Diraja Sultan Suleiman (1933), Masjid Jamek Kuala Lumpur (1909), and Masjid Diraja Sultan Alaeddin (1926). The architectural design of these mosques reflects the influence of British architects as well as the vision of the then Sultan of Selangor, Sultan Ala'uddin Suleiman Shah. All three mosques have been gazetted under the Act 645 and have previously undergone conservation.

Most of the mosques visited in this study have expanded their prayer areas to accommodate larger congregations during Friday prayers. The following examples are just a few of the many that incorporate modern designs and structural elements. The figures presented illustrate examples of these expansions, highlighting new roofing systems, updated finishing materials, and mechanical appliances for comfort. These changes align with the documented shift in mosque design, integrating modern materials and technologies while preserving traditional identity (Alnajjar & Erdil, 2024).

Most of the mosques studied align with Utaberta and Haraty's (2021) investigation into the design and hygiene of ablution spaces in Malaysian mosques. The addition of water taps, reconfiguration of ablution spaces, and integration of accessibility features reflect a broader trend of functional transformation. However, as Utaberta and Haraty argue, such modifications must be guided by clear design frameworks to avoid compromising spatial hygiene and user experience.

Other frequent alterations observed in these mosques involve the integration of mechanical appliances to improve thermal comfort for occupants during prayer. As a result, some openings had to be closed. The findings of alteration trends in Selangor independence mosques reflect the concept of historical layering, as proposed by Bierman (1995), where architectural elements evolve to meet contemporary needs while preserving symbolic identity. The observed alterations, such as extended prayer areas and updated ablution facilities, demonstrate the dynamic nature of mosque architecture, consistent with Islamic principles outlined by Kahera et al. (2007). Although these alterations were made, the community still recognised the importance of preserving the original design and responded by installing a secondary door over the existing one to maintain its authenticity.

The findings of this study have significant implications for heritage conservation policy and mosque management practices in Malaysia. The observed alteration trends in pre-independence mosques highlight the urgent need for a comprehensive policy framework that balances functional upgrades with the preservation of architectural authenticity.

6.0 Conclusion

This paper's findings aim to identify the evolving heritage through alteration trends in the architectural elements of pre-independence

mosques in Selangor and Kuala Lumpur. As the first phase in developing an architectural conservation framework, it is crucial to develop a thorough understanding of each building before any alterations are undertaken. Many old mosques in Selangor still retain their original features and elements, reflecting the community's awareness and appreciation of their architectural roots while also embracing the evolving concept of the mosque. Ongoing programs and upgrades are anticipated to continue in both Selangor and Kuala Lumpur's mosques to meet evolving community needs. However, despite their historical and architectural significance, these changes risk compromising the buildings' heritage value, potentially leading to the loss of defining heritage elements. Therefore, a clear set of guidelines is necessary to manage future interventions and prevent inappropriate alterations that could diminish their cultural importance. This research is limited to observing mosques in Selangor and Kuala Lumpur that have retained original architectural elements for a specific period during the research, and we believe that the evolution could occur in the near future to enhance comfort in the mosques. It is recommended that follow-up studies be conducted to determine additional variables in alteration trends, especially in mosques, so that design guidelines can be developed to protect this architectural heritage. This study serves as a humble initiative to inform such efforts, ensuring that the defining features of these heritage mosques are preserved before any change in status or function occurs.

Acknowledgements

The authors would like to acknowledge the Bahagian Arkitek Jabatan Kerja Raya Selangor, Bahagian Kepakaran Konservasi Cawangan Arkitek, Jabatan Agama Islam Selangor, mosque managers, and the individuals who, directly or indirectly, contributed by sharing genuine insights on the heritage mosques of Selangor and Kuala Lumpur.

Paper Contribution to the Related Field of Study

This paper contributes to the field of architectural heritage that caters to the conservation efforts of heritage mosques in Selangor and Kuala Lumpur.

References

Abd Jalil, M. A. (2021). Sultan 'Ala'uddin Suleiman Shah: payung kesentosaan Negeri Selangor. Akademi Jawi Malaysia.

Abdul Halim Nasir. (1995). Seni bina masjid di dunia Melayu-Nusantara. Penerbit Universiti Kebangsaan Malaysia.

Abdullah, M. Z., & Md. Yatim, N. (2012). Warisan Masjid Masjid Lama di Selangor (Cetakan Pertama 2012). Unit Arkib dan Penerbitan Perbadanan Adat Melayu dan Warisan Negeri Selangor.

Ahmad, A. G. (1999). The Architectural Styles of Mosques in Malaysia: From Vernacular to Modern Structures. *Proceedings of the Symposium on Mosque Architecture: The Historic and Urban Developments of Mosque Architecture.*, Vol.2, 1999(31 Jan-3 Feb), 147–163.

Ahmad, M. R., Nordin, R., & Razali, N. N. (2021). Semakan arah kiblat masjid-masjid warisan: kajian di Negeri Melaka. Jumal'Ulwan.

Ali, A., & Hassan, A. S. (2018). Influence of the Mughal Architectural Style on Malaysian Mosques.

Alnajjar, A., & Dinçel, E. (2024). Changing Forms And Functions: The Transformation Of Mosque Architecture From The Early Islamic Period To The Present.

Asif, N., Utaberta, N., & Sarram, A. (2019). Architectural Styles of Malaysian Mosque: Suitability In Compact Urban Settings. MATEC Web of Conferences IConBEE2018. https://doi.org/10.1051/matecconf/2019

Bacharach, J. L. (1995). The Restoration and Conservation of Islamic Monuments in Egypts (Jere L. Bacharach, Ed.). The American University in Cairo Press.

Baharudin, N. 'Athiqah, & Ismail, A. S. (2014). Communal Mosques: Design Functionality towards the Development of Sustainability for Community. *Procedia - Social and Behavioral Sciences*, 153, 106–120. https://doi.org/10.1016/j.sbspro.2014.10.046

Chen, V. F. (1998). The Encyclopedia of Malaysia: Architecture (Vol. 5). Archipelago Press.

Chin, K. Yit., Chen, V. Fee., & Gullick, J. M. (2003). Landmarks of Selangor. Jugra Publications.

Gullick, J. M. . (2022). Sejarah Selangor 1766-1939. IBDE Ilham.

Jabatan Warisan Negara. (2017). Garis Panduan Pemuliharaan Bangunan Warisan. Kementerian Pelancongan dan Kebudayaan Malaysia. Retrieved from heritage.gov.my

Kadir, M. N., & Mothar Rijan, M. H. (2018). Sumbangan Sultan Alaeddin Sulaiman Dalam Institusi Agama Islam. 4th INTERNATIONAL CONFERENCE ON ISLAMIYYAT STUDIES 2018. https://ms.wikipedia.org/wiki/Sultan_Abdul_Samad

Kahera, A. Ismail., Abdulmalik, Latif., & Anz, Craig. (2007). Design criteria for mosques and Islamic centers: art, architecture, and worship. Routledge, Taylor & Francis Group.

Mohamad Rasdi, M. T. (2007). Mosque architecture in Malaysia: Classification of styles and possible influence. Jurnal Alam Bina, 9(3), 1-37.

Ng, V. F. Peng. (2022). Kuala Lumpur & Masjid Jamek: a timeless estuary, a landmark mosque, a unique history. Pertubuhan Arkitek Malaysia.

Pejabat Setiausaha Kerajaan Negeri Selangor. (1903, November 5). Beranang Mosque - Application for government assistance in building. Arkib Negara Malaysia.

Permodalan Negeri Selangor. (1993). Selangor maju bersama negara. Permodalan Negeri Selangor Berhad.

Utaberta, N., & Shakir, H. J. (2021). DESIGN FRAMEWORK FOR ABLUTION SPACES OF ICONIC MOSQUES IN MALAYSIA. Journal of Islamic Architecture, 6(4), 251–263. https://doi.org/10.18860/jia.v6i4.11702