

EXPLORING THE MOORISH AND MUGHAL STYLES OF COLONIAL BUILDINGS IN MALAYSIA

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ABSTRACT

Malaysian architecture has undergone significant changes over time, reflecting the diverse cultural influences that have shaped the country's rich cultural history. During the era of British Malaya, there was a convergence of diverse foreign architectural styles, including Moorish and Mughal architectural elements that are encompassed within Islamic architectural traditions. This evolution of influences significantly shaped the design of public structures, leaving a lasting and intricate imprint on the cultural heritage of the nation, albeit sometimes leading to a complex blend that could create confusion. The study aims to identify Moorish and Mughal architectural styles that influenced the design of colonial public buildings in Malaysia. To achieve this, a historical analysis approach has been employed as the research methodology. By delving into secondary sources, the initial phase of the research involves comprehending the history of Moorish and Mughal architecture and their specific adaptations to the design of public buildings. This is followed by a comparative investigation into the architectural components utilized within these buildings. The findings established a systematically comprehensive review, providing accurate insights into the architectural styles of the selected buildings. Through this research, it will be possible to discern the extent to which Moorish and Mughal architecture influenced most colonial buildings in Malaysia.

Keywords: *Colonial Buildings, Malaysian Colonial Era, Moorish Architecture, Mughal Architecture, , Public Buildings,*

Introduction

The colonial era in Malaysia was a crucial time in its history, one that saw foreign rule, economic exploitation,

architectural influences, cultural shifts, and the development of the nation's modern identity. Malaysia has piqued the interest of numerous European countries due to its abundant natural resources and strategic geographical location. The main colonial rulers who successively governed areas of what is now modern-day Malaysia, leaving permanent fingerprints on its socioeconomic and political landscape, were the Portuguese, Dutch, and British (Ali & Hassan, 2020). Malaysia, as a cultural melting pot, has a distinct landscape that blends history and the contemporary in many aspects, mainly architectural styles. Malaysia's architectural diversity reflects the country's diverse history, which includes periods of foreign influence and colonization as well as indigenous forms and Islamic influences.

Literature Review

There isn't much literature on the subject at hand, except for a few typological studies focusing on the types of mosque architecture that were affected by Mughal or North Indian architecture. The output of Abdul A. Ghafar Ahmad, Dr. Mohamad Tajuddin Mohamad, and Halim Nasir Rasdi is a well-known author on this topic, yet this material only contains the study of typography. Most of the research by Asif Ali and Sanusi Ahmad focuses on the topic of Mughal architecture, which influenced most of the mosque buildings that were constructed during the colonial period. According to Çelik (2011), the most popular methods for studying the history of architecture are based on factors such as style and time, geography and culture, biography, technique, typology, architectural styles, theme, and analogy. This study employs a method of reviewing five research papers, including investigating the effect of Moorish and Mughal architectures on Malaysian colonial buildings. This analysis includes a detailed examination to trace the special features of Moorish and Mughal styles adapted to the components of colonial buildings in Malaysia, with a focus on the era of British colonization. Based on Ahmad (2017), the era of British colonization is the peak of evolution, and the external architectural influence brought into Malaya at the time was at its peak. Five selected pieces of literature from the academicians were analyzed to highlight their historical approaches to the architectural elements based on Leach's proposal. The following texts consist of a collection of literature pertaining to the historical and architectural aspects of Moorish and Mughal influences on colonial buildings in Malaysia. (Table 1)

Table 1 – 4 Selected Literatures on Historical and Architectural Aspects of Moorish and Mughal Influences on Colonial Buildings in Malaysia. (Author)

No.	Author (Editor/Translator)	Year	Reference
1	Sumarni Ismail, Mohd Yazid Yunos, Nangkula Utaberta & Nor Atiah Ismail	2015	Application of Islamic Architecture at Sultan Abdul Samad Building, Kuala Lumpur
2	Maryam Khazae, Zuraini Md Ali & Naziaty Yaacob	2015	Mughal or Moorish architecture: The origin of Malaysian mosques during colonial period
3	Sharyzee mohmad shukri	2020	The Hybrid Moorish Style Characteristics in Malaysia: Istana Bandar Jugra
4	Nor Hafizah Anuar & Prof Dr M. Gul Akdeniz	2018	An Architectural Study on the Railway Station Buildings in Malaysia during British Era, 1885-1957
5	Asif Ali and Ahmad Sanusi Hassan	2018	Influence of the Mughal Architectural Style on Malaysian Mosques

These texts present varieties of classification on Moorish and Mughal architectural history and its elements in Malaysia's colonial buildings. The case study focuses on a selection of colonial buildings,

including mosques, administrative buildings, dwellings, and railway stations. These buildings were evaluated to identify and examine the architectural aspects that reflect the influence of Moorish and Mughal styles during the colonial period. The arrival of foreign invaders will inevitably have a lasting impact on the region they have successfully conquered.

Colonial Architecture

Based on Yaacob et al., (2015). Malaysia, a country in Southeast Asia, has a rich cultural heritage that is flawlessly woven from a variety of influences. Here, ancient traditions coexist with contemporary culture. The colonial architecture that still adorns Malaysia's landscape is one of the most fascinating chapters in the country's architectural history. Foreign powers significantly influenced the built environment of Malaysia from the 16th century, when Portuguese explorers first set foot on Malaysian territory, to the British Empire's strong presence in the 18th and 19th centuries. These conquerors' architectural designs, which incorporate Dutch, British, and even a faint touch of Portuguese and Indian influences, have left behind a distinctive and alluring legacy that continues to pique the interest of both residents and tourists (Daud et al., 2022). British colonial control in Malaysia from the late 18th to the mid-20th century produced several colonial buildings. British architecture impacted these administrative, residential, and commercial buildings. Wahid et al., (2021) also stated that these colonial structures, constructed when the British and Dutch ruled the nation, have withstood the test of time, and left a lasting impression on the nation's architectural, cultural, and historical history.

Origin of Moorish and Mughal Architecture

Moorish and Mughal architecture are indeed two distinct styles of Islamic design, each with its own unique characteristics and historical significance. These architectural styles emerged in different regions and time periods within the Islamic world, showcasing the diversity and richness of Islamic art and architecture. Based on Garcia, K. (2022) The Moors may be traced back to their Berber ancestry, and their expansion over North Africa took place between the 7th and 8th centuries. Subsequently, they successfully conquered the Iberian Peninsula in the 8th century. Their military campaigns expanded over southern Europe and the western Mediterranean, encompassing regions of Spain and Portugal. Upon their territorial conquests, the conquerors proceeded to disseminate Islam and Moorish cultural practices across the newly acquired regions while simultaneously assimilating certain local components they encountered. Despite the conclusion of Moorish control in the latter part of the 15th century, the enduring impact of their cultural influence remains evident in the present-day architectural elements found in residences, public edifices, mosques, and artistic expressions within these nations. The following table consist of a collection of literature pertaining to the history of Moorish and Mughal Architecture collected by 5 selected authors in their papers. (Table 2)

Table 2 – 4 Selected Literatures on The Origin of Moorish and Mughal Architecture (Author)

No.	Author (Editor/Translator)	Description		
		Moorish	Mughal	
	Sumarni	Ismail,	Mohd	Yazid
1	Yunos, Nangkula Utaberta & Nor Atiah Ismail	-	-	
2	Maryam Khazae, Zuraini Md Ali & Naziaty Yaacob	Architectural style that developed in Mughal architecture in the Indian the Iberian Peninsula (modern-day subcontinent encompassed a fusion of Spain and Portugal) during the period Islamic, Persian, and Indian of Moorish rule, which lasted from architectural styles. Mughal the 8th to the 15th centuries. architecture finds its origins in the Indian subcontinent, wherein it assimilated Western elements through the medium of Islamic planning, which was further developed through		

academic interactions.

3	Sharyzee Mohmad Shukri	One of numerous Islamic design styles. The Moors, a North African people, successfully colonized the Iberian Peninsula and Western Mediterranean islands during the Middle Ages. The Moorish, a term used to identify medieval Muslims in the 700s, were typically of Arab or African descent. Their conquests included the Pyrenees region of France, Portugal, Sicily, south of Italy, Spain, and many districts with an Islamic community.	-
4	Nor Hafizah Anuar & Prof Dr M. Gul Akdeniz		-
			Sambungan
5	Asif Ali and Ahmad Sanusi Hassan		-

Both Moorish and Mughal architecture are celebrated for their aesthetic beauty, attention to detail, and ability to blend artistic and architectural elements from various cultures. While Moorish architecture is primarily associated with Spain and Portugal, Mughal architecture represents the architectural achievements of the Mughal dynasty in the Indian subcontinent. These two styles are testaments to the versatility and adaptability of Islamic design across different regions and historical contexts.

Research Methodology

The chosen research approach is historical analysis. This approach involves a comprehensive examination of historical records and secondary sources to understand the historical context and the architectural styles that influenced colonial public buildings in Malaysia. This study employs a methodological approach to conduct a critical analysis of the literature review of five academic papers as stated below in table 6.

Table 6 – 5 Selected Academic Papers (Author)

No.	Author (Editor/Translator)	Year	Title
1	Sumarni Ismail, Mohd Yazid Yunos, Nangkula Utaberta & Nor Atiah Ismail	2015	Application of Islamic Architecture at Sultan Abdul Samad Building, Kuala Lumpur
2	Maryam Khazae, Zuraini Md Ali & Naziaty Yaacob	2015	Mughal or Moorish architecture: The origin of Malaysian mosques during colonial period

3	Sharyzee mohmad shukri	2020	The Hybrid Moorish Style Characteristics in Malaysia: Istana Bandar Jugra
4	Nor Hafizah Anuar & Prof Dr M. Gul Akdeniz	2018	An Architectural Study on the Railway Station Buildings in Malaysia during British Era, 1885-1957
5	Asif Ali and Ahmad Sanusi Hassan	2018	Influence of the Mughal Architectural Style on Malaysian Mosques

The research methodology known as the historical approach entails the examination and evaluation of previous events, advancements, and incidents to get a more profound comprehension of the past and its influence on the present. Historical research is a scholarly approach employed to elucidate and analyze historical facts and documents, predominantly depending on primary and secondary sources. Its objective is to derive conclusions on the historical setting and its ramifications. Scholars that apply the historical perspective frequently examine the origins, outcomes, and recurring patterns of events, utilizing this information to enhance contemporary comprehension and decision-making processes. Based on the aforementioned study articles stated in Table 6, all of the studies have focused on architectural styles on colonial buildings in Malaysia. This analysis involves a thorough examination with the objective of finding the unique attributes of Moorish and Mughal architectural styles as they were integrated into the components of colonial buildings in Malaysia, namely during the era of British colonization.

The Beginning of Moorish and Mughal Architectural Transfer to Malaya.

As mentioned in the Application of Islamic Architecture at Sultan Abdul Samad Building by Sumarni Ismail, Mohd Yazid Yunos, Nangkula Utaberta & Nor Atiah Ismail, the fact that the first building with this style, the Sultan Abdul Samad building in Kuala Lumpur, is a mix of Moorish and Mughal styles shows that it was done on purpose. According to Ali and Hassan (2020), upon the completion of this building in 1897, Charles Edwin Spooner, the state engineer of Selangor PWD, described the architectural style of the structure as "Mahometan" during a speech. The word "Muhammad," which means "the last Prophet in Islam," is where the name comes from. Researchers also called this style Indo-Saracenic, Indo-Islamic, Euro-Islamic, and Moorish style. Like in India, the first British buildings were made in the neoclassical style, and there was little interest in adding Mughal style at that time. But later, the style grew and became a part of the city's hybrid character. The utilization of a hybrid artistic style that combined elements of both Mughal and classical traditions within the Indian context facilitated the acceptance of the British presence by the local community during the transition of governance from the Mughal Empire. Shukri et al., (2020) stated that the adoption of the Moorish and Mughal style had a significant impact on the subsequent evolution of colonial architecture, particularly in places with a Muslim majority, such as British Malaya. The hybrid architecture found in numerous government and religious buildings in Malaya was intentionally designed by British colonial architects and engineers. This architectural style served as a significant representation of the British administration's presence in the region, signifying a departure from previous architectural norms. Within the field of architectural history research technique, case studies play a crucial role by providing a detailed and thorough understanding of certain architectural projects, trends, or periods. The analysis of previous scholarly literature that has effectively utilized case studies might shed light on the importance of this investigative methodology. Four colonial structures built by the British and influenced by Moorish and Mughal architecture have been chosen as their case study from previous research, as shown in Table 1. The following table lists the case study buildings. (Table 3)

Table 3 – 4 Selected Literatures on Example of Colonial Buildings influenced by Moorish and Mughal Architecture (Author)

Exploring The Moorish And Mughal Styles Of Colonial Buildings In Malaysia.
 Mohd Aliff Izuan Md Yasin, Nor Syahila Ab Rashid, Noor Hayati Ismail, Athika Norlaili Abdul Halim

No.	Author (Editor/Translator)	Year of Built	Case Study Building	Influence
1	Sumarni Ismail, Mohd Yazid Yunos, Nangkula Utaberta & Nor Atiah Ismail	1893	Sultan Abdul Samad Building, Kuala Lumpur	Moorish + Mughal
2	Maryam Khazae, Zuraini Md Ali & Naziaty Yaacob	1909	Kuala Lumpur Jamek Mosque	Mughal
3	Sharyzee mohmad shukri	1875	Istana Bandar Jugra	Moorish
4	Nor Hafizah Anuar & Prof Dr M. Gul Akdeniz	1910	Kuala Lumpur Railway Station Buildings	Mughal
5	Asif Ali and Ahmad Sanusi Hassan	1909	Kuala Lumpur Jamek Mosque	Mughal

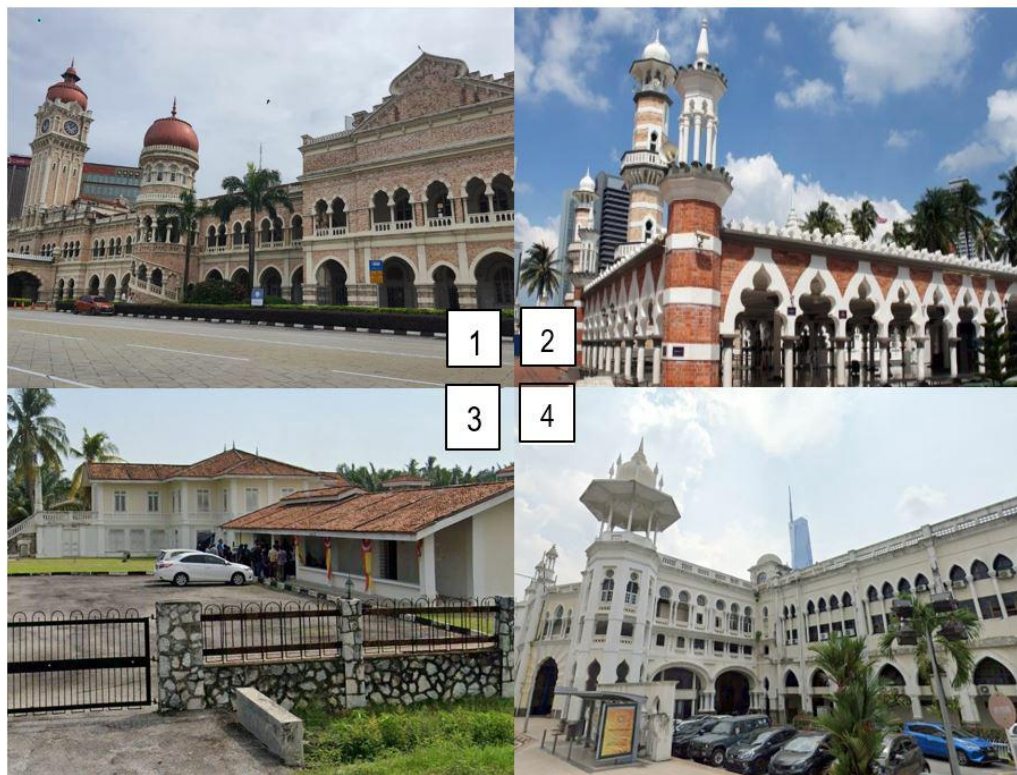


Figure 1. Case Study by the Selected Research Paper
 (Source : Author’s photo at fieldwork)

Comparative studies of the characteristics of Moorish and Mughal architectural styles in colonial buildings in Malaysia are of paramount importance in advancing the field of architectural research. By referring to the listed research papers, these comparative analyses enable a nuanced understanding of the

diverse influences that have shaped Malaysia's built environment since the colonial period, shedding light on the intricate interplay of history and design. The five chosen research papers serve as evidence for the present study's examination of the particular architectural character that represents the influence of Moorish and Mughal architecture. The investigation focuses on analyzing the components of the chosen building, which serves as a case study, in order to classify and elucidate the nuanced differences and the extent of Moorish and Mughal architectural elements in a comprehensive manner.

Analysis & Findings

Moorish Architectural Characteristics

Moorish design features seen in architecture have migrated to various areas of life, such as themes, decor, and art. Mosques are the most recognizable examples of Moorish architecture. They frequently contain finely carved arches that lead to vast domed halls; this helps direct visitors to important portions of the building, such as prayer spaces. These sculptures can also be found on the mihrab, a section of wall that denotes the direction of Mecca.

Islamic aesthetics and design principles heavily influence Moorish architecture. It echoes Islamic architectural traditions, with components such as horseshoe arches, muqarnas, dome, the central courtyard and significant use of calligraphy and vegetative design as ornamental elements. Khazae et al. (2015) and in their research paper stated that the lavish Alhambra palace and the mosques in Cordoba (Figure 2), which were constructed in the heyday of Moorish architecture between the 13th and 14th centuries, are the most well-known and notable structures that have survived to this day. Bangunan Sultan Abdul Samad, Kuala Lumpur, and the Istana Bandar Jugra (Figure 1), Selangor, have been identified as colonial structures showcasing Moorish architectural influence in a case study conducted by Khazae et al. (2015) and Utaberta et al. (2021)



Figure 2. The Moorish Architecture (Alhambra Palace, Granada and The Great Mosque, Cordoba)

Moorish Arch

The typical Moorish arch is circular, has various design features, and is constructed of either stone or brick. The horseshoe, polylobed, and lambrequin arches (Figure 1) are the three main varieties of these structures. A distinctive style of Moorish architecture is the horseshoe arch, commonly referred to as the keyhole arch. Horseshoe arches are one of the features that distinguish Moorish design. These arches have a horseshoe shape and are frequently adorned with intricate motifs. They are commonly found within doors, windows, and rooms. Many of the components in these arches are derived from Spanish Gothic architecture. Although it has been utilized since before the advent of Islam, it has evolved into the pinnacle of Islamic architecture and may be found in many old structures. Although the horseshoe arch is frequently rounded, it can also have carvings that are pointed or ornamental. In this design, the arch is wider than the columns it is supported on, which results in a large yet harmonious effect.

The polylobed arch exhibits a distinctive feature in the form of scalloped edges that closely resemble the contours of circular leaf structures. This architectural style also has its origins in Gothic architecture, albeit with a greater incorporation of lobes. This aesthetics employ meticulous arrangements to generate an ornamental yet harmonious allure.

Lambrequin or Ogee arches (Figure 3) exhibit a close affinity with the Muqarnas architectural style, which is characterized by using several intricate lobes and points in their design. The utilization of comparable sculptural techniques is frequently observed in regions characterized by the presence of muqarnas domes or alcoves. Lambrequin arches are frequently observed in prominent architectural structures, such as mosques. The Moorish arches, while bearing resemblance to Gothic architecture, have undergone a transformation to assimilate significant features that hold cultural significance in Islamic societies, including elaborate patterns and abstract forms. The exhibition effectively presents the extensive historical legacy of the Moors and the territories under their control.



Figure 3. Moorish Arch (Horseshoe and Ogee Arch at Bangunan Sultan Abdul Samad and Istana Jugra)
(Source : Author's photo at fieldwork)

Muqarnas

Moorish buildings frequently have muqarnas, or ornate honeycomb-style vaulting. This extremely beautiful motif is frequently employed in mosques and can be seen on ceilings, in alcoves, and as a component of arches. They stick out among otherwise straightforward constructions to highlight a significant space. (Figure 4)

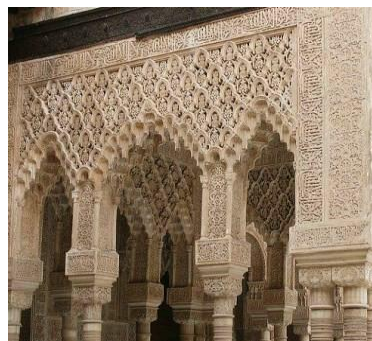


Figure 4. Example of Muqarnas at Alhambra Palace

Texture and Color

Moorish architecture employs a fusion of vivid hues and elaborate patterns to produce aesthetically captivating and culturally significant edifices. These features provide both aesthetic appeal and functional utility, as they contribute to temperature regulation and the establishment of comfortable and tranquil environments. (Figure 5).



Figure 5. Color and texture of Sultan Abdul Samad Building, Kuala Lumpur and Istana Bandar Jugra, Banting
(Source : Author's photo at fieldwork)

Central Courtyard

Moorish architecture frequently integrates central courtyards and gardens, commonly referred to as "patios" or "courts". These outdoor areas are specifically planned to offer shelter from the sun and lower temperatures in the arid Mediterranean region. Additionally, they are frequently embellished with decorative water features, such as fountains and pools, as well as abundant plant life. (Figure 6)



Figure 6. Courtyard area at Bangunan Sultan Abdul Samad.
(Source : Author's photo at fieldwork)

Ornamental elements

The decorative motifs of Moorish origin can be categorized into two main types: floral and vegetal motifs, as well as a motif known as the arabesque, characterized by interlacing patterns. Additionally, geometric patterns and Arabic calligraphy are also prominent features of Moorish decorative motifs. (Figure 7) Moorish ornamentation, particularly in the context of the architecture of the Bangunan Sultan Abdul Samad in Kuala Lumpur, Malaysia, is known for its intricate and decorative motifs. The use of Arabesque and floral motifs with flowing lines, scrolls, stylized flowers, and vines is indeed characteristic of Moorish architectural design. (Figure 8)



Figure 7. Example Moorish Ornamental Elements



Figure 8 . Courtroom doors at Bangunan Sultan Abdul Samad, decorated with local arabesque (featuring the national flower)
(Source : RoamThisWay. [https://www.roamthisway.com/post/Heritage Series - Bangunan Sultan Abdul Samad \(BSAS\)](https://www.roamthisway.com/post/Heritage Series - Bangunan Sultan Abdul Samad (BSAS))))

Roofing and Dome

Moorish domes were constructed as vaults with ribs. Instead of meeting in the center of the dome, the "ribs" intersect off-center, forming a square or an octagon in the middle. Domed ceilings with repetitive, abstract patterns are another characteristic of Moorish style (Figure 10). These domes assist in controlling temperature and are occasionally decorated with tinted glass, which has an intriguing effect on the room's lighting. Moorish design frequently includes elaborate arches that serve as transitional elements between different spaces. According to Khazae et al., (2015) in their paper, crenellated rooftops, frequently attributed to Moorish architectural style, exhibit distinct attributes such as an ornamental parapet or wall running along the roof's edge. This parapet is distinguished by the presence of alternating solid parts, known as merlons, and open areas, referred to as crenels. The crenellations commonly observed are characterized by their square or rectangular form, which imparts a unique design along the periphery of the roof. (Figure 11)



Figure 10. Example of Ribbed Dome and Roof design of Al Hambra Palace, Granada and The Great Mosque, Cordoba



Figure 11. Crenellated rooftops for Alhambra Palace Granada, Sultan Abdul Samad Building, Kuala Lumpur and Istana Bandar Jugra, Banting.
 (Source : Author's photo at fieldwork)

Table 4 – 4 Selected Literatures on Example of Colonial Buildings influenced by Moorish Architecture (Author) No.

(Editor/Translator)	Moorish Arch	Muqarnas	Central Courtvard	Texture & Color	Ornamental Element	Author Dome & Roofing
1 Sultan Abdul Samad Building, Kuala Lumpur	■		■	■	■	■
2 Kuala Lumpur Jamek Mosque			■	■		
3 Istana Bandar Jugra	■			■		■
4 Kuala Lumpur Railway Station Buildings	■					

Mughal Architectural Characteristics

Mughal architecture is an architecturally unique style that emerged and thrived in the Indian subcontinent during the reign of the Mughal Empire, spanning from the 16th to the 19th centuries. This architectural

style represents a synthesis of Islamic, Persian, and Indian architectural components and is renowned for its opulence, balance, and incorporation of elaborate ornamental features. Several notable characteristics may be identified within Mughal architecture that are worth mentioning. The Jama Masjid in Delhi, according to Khazaee et al. (2015) in their research paper, is the best mosque of Mughal architecture. The Jama Masjid, Delhi, which the Emperor Shah Jahan had constructed during the Mughal era, is a prime example of a masterpiece of Mughal architecture, displaying the complex features and opulence that characterize the era's architectural style. (Figure 12)



Figure 12. The Jama Masjid, Delhi

Mughal Arch

The introduction of Mughal arches in India can be attributed to the influence of the Muslim community. The structures were built with corbelled techniques and afterwards shaped into the form of an arch. Subsequently, they acquired knowledge of arch procedures and proceeded to refine its aesthetic and structural attributes. The influx of skilled craftsmen from Persia and Central Asia to India contributed significantly to the aesthetic refinement of arches. Humayun's protracted stay in Persia during the early Mughal period had a significant impact on the architectural style of the Mughals. The architectural feature known as the four-centered or pointed arch The salient characteristic of the Mughal arch is its quadrilateral or cusped arch form as designated in Jama Masjid, Delhi (Figure 13). The arch style under consideration is distinguished by the presence of two concave curves that intersect at a central point located at the apex of the arch. The architectural style of Mughal buildings is characterized by its exquisite and distinctive appearance. As stated by Anuar (2018), in her paper, *An Architectural Study on the Railway Station Buildings in Malaysia during British Era, 1885-1957*, the arch is a structural element that extends across an aperture, typically taking the form of a pointed arch, pointed horseshoe arch, horseshoe arch, ogee arch, Voussoir arch, or segmental arch. The construction of the Kuala Lumpur Station building involved the utilization of four distinct arch types related to Mughal architecture. (Figure 14)



Figure 13. Double-curved shape, with a pointed or cusped top and concave curve on the inside, Jama Masjid, Delhi



Figure 14. Pointed Mughal arches dominated along the colonnaded corridor of the building at Kuala Lumpur Railway Station Buildings and Kuala Lumpur Jamek Mosque
(Source : Author's photo at fieldwork)

Minaret

A minaret is a vertically elevated structure characterized by many balconies situated at various elevations, typically featuring a polygonal foundation, commonly found in conjunction with mosques. In Mughal mosques, minarets are occasionally constructed at various locations, including the corners, as well as both inside and outside the premises. To preserve the structural symmetry, pairs of these elements were created on both sides of the building. The primary purpose of a minaret was to serve as a means of summoning the faithful to prayer. However, it is worth noting that certain minarets, such as the Qutub Minar in Delhi, also served as symbols of victory. Based on Khazaee et al. (2015), The Masjid Jamek of Kuala Lumpur features two prominent minarets that exhibit a significant influence from foreign architectural components, including the amalgamation of Moorish and Moghul styles. The minarets of the Kuala Lumpur Jamek Mosque have an octagonal structure and are constructed using contemporary materials, specifically a combination of concrete, brick, and white banding for decorative purposes. Furthermore, several miniature minarets were used as roofing elements for the prayer rooms and corners of the courtyards, resembling the architectural style seen in several Mughal mosques. (Figure 15)



Figure 15. Mughal Minaret at Jamek Mosque, Kuala Lumpur, KTM Station Kuala Lumpur and Jama Masjid in Delhi.
(Source : Author's photo at fieldwork)

Finial

Within the realm of Mughal architecture, a finial serves as an ornamental architectural component, generally situated atop a dome, minaret, or other notable edifice. Finials are decorative elements that fulfill both aesthetic and utilitarian functions. Architectural elements are frequently crafted with the intention of enhancing the aesthetic appeal and magnificence of a structure, while simultaneously serving the practical function of redirecting precipitation away from the building's exterior. (Figure 16)



Figure 16. Mughal Finial at KTM Station Kuala Lumpur, Jamek Mosque, Kuala Lumpur and Jama Masjid in Delhi.
(Source : Author's photo at fieldwork)

Dome

Mughal architecture is renowned for its characteristic and refined domes, which serve as a prominent element in numerous Mughal structures, including mosques, tombs, and palaces. The defining features of Mughal domes encompass a distinctive bulbous shape, wherein these domes commonly exhibit a profile resembling that of a bulb or an onion. The unique form of these structures distinguishes them from other architectural types and enhances their visual attractiveness.

Early Indian domes were corbelled like Jain temples. Later dome designs included shallow, multicentre domes on elevated platforms. The bulbous double-shell dome became a major component of early Mughal architecture. The first twin domes date from 11th-century Persia, influencing this change (Ashkan, Ahmad, and Arbi 2012).

According to Ali and Hassan (2020), later bulbous domes became onion-shaped with a narrow neck. Squinches were used in the Sultanate period to convert square to circular bases, whereas muqarnas were popular in the Mughal era. The inverted lotus with a finial became a signature dome decoration over time. The dome, originally designed for roofing, became a major feature of Indian Islamic architecture. Khazae et al. (2015) assert that the Kuala Lumpur Jamek Mosque features three bulbous domes on its roof, which display evident influences derived from Mughal architectural traditions. (Figure 17) It is important to acknowledge that the domes possess an octagonal base because of variations in their construction periods. The construction of the dome incorporated a novel material, namely steel, to provide structural reinforcement.



Figure 17. Mughal Dome at Jamek Mosque, Kuala Lumpur and Jama Masjid in Delhi
(Source : Author's photo at fieldwork)

Turrets

Turrets are often small, decorative towers or pavilions that can be seen on the corners or along the walls of Mughal structures, including palaces, forts, and tombs. These turrets have both practical and ornamental uses. Turrets are decorative components that frequently have elaborate carvings, geometric designs, and other artistic embellishments. They enhance the Mughal constructions' overall grandeur and artistic attractiveness. Their architecture and ornamentation are excellent examples of Mughal artistry.

Turrets are utilized in Mughal architecture to produce a sense of harmony and balance for aesthetic equilibrium. They provide a pleasing aesthetic contrast by adding vertical components to buildings' horizontal layouts. The whole composition of the architectural structure depends on this balance. Some turrets may have also had tactical functions, according to strategy. They might have contained tiny cannons or rifles for defense, or they might have served as lookout positions for guards to keep an eye on the area. (Figure 18).



Figure 18. Turrets at Jamek Mosque, Kuala Lumpur and KTM Station Kuala Lumpur and Jama Masjid in Delhi
(Source : Author's photo at fieldwork)

Chhatris

According to Ali and Hassan (2020), the chhatris were originally constructed with a primary focus on security. The rooftop kiosks in palaces, initially intended as rest areas for guards, eventually found a new purpose in enhancing the architectural beauty of the buildings. These kiosks take the form of polygonal structures, featuring columns at their corners, all under the shelter of a small dome topped with a finial. The position and form of this element in Kuala Lumpur Jamek Mosque and is similar to Indian mosques but is only used for the top of minarets. Based on Khazae et al., (2015), Kuala Lumpur KTM Station also had staircases tower whereby an octagonal tower that contains stairwell mounted with chhatris. (Figure 19)



Figure 19. Chhatris at Jamek Mosque, Kuala Lumpur and KTM Station Kuala Lumpur and Jama Masjid in Delhi
 (Source : Author’s photo at fieldwork)

Table 5 – 4 Selected Literatures on Example of Colonial Buildings influenced by Mughal Architecture
 (Author)

No.	Author (Editor/Translator)	Mughal Arch	Minaret	Finial	Mughal Dome	Turrets	Chhatris
1	Sultan Abdul Samad Building, Kuala Lumpur	■		■	■	■	
2	Kuala Lumpur Jamek Mosque	■	■	■	■	■	■
3	Istana Bandar Jugra						
4	Kuala Lumpur Railway Station Buildings	■	■	■	■	■	■

Conclusion

The conclusion derived from a comprehensive examination of the four selected case study building from five scholarly articles in this research indicate a consensus among them on the significant architectural influence exerted by the British invaders in Malaysia. The incorporation of exterior architectural styles, such as Moorish and Mughal, emerged as a significant factor in the design and construction of colonial buildings that were erected and introduced throughout the period of British colonization. The utilization of Mughal characters and Moorish arches, elaborate Mughal motifs, and elegant domes inside colonial edifices not only serves as a manifestation of the historical convergence of diverse civilizations but also emphasizes the capacity for architectural traditions to adapt and assimilate. The incorporation of diverse architectural styles in these buildings not only enhances their visual attractiveness but also serves as a representation of Malaysia's multicultural fabric. This exemplifies the ability of architectural features to transcend temporal and political limitations, effectively narrating the intricate history of a nation.

Conflicts Of Interest

The manuscript has not been published elsewhere and is not under consideration by other journals. All authors have approved the review, agree with its submission and declare no conflict of interest on the manuscript.

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