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Mosque in Compact Cities: Impact of Urbanization on Planning and Design of Contemporary Mosques in Nusantara

Arman Sarram¹, Nangkula Utaberta^{1*} and Nayeem Asif¹

IJabatan Seni Bina, Fakulti Rekabentuk dan Seni Bina, UPM, Selangor 43400

**Corresponding author E-mail: nangkulautaberta@gmail.com*

Abstract

Thousands of years after the creation of Islam's place of worship, issues and problems of its continuous establishment stemming from complexity of modern living has forced urban planners and architecture to reconsider its planning and implementation, deviating from the usual architectural conventions and faced with the challenge of retaining the integrity of its fundamental functionality, purpose and appropriateness. This paper provides insight on the merits as well as the challenges of modern day planning, executing and building of mosque in urban areas by providing a comparative analysis on several mosques from different cities around the world. The paper adopts qualitative approach towards collecting and analyzing the data which primarily comes from review of literature. Outcome of this research's showed that a strong consideration for vertical development should be implemented to serve the needs of a growing population and fast dwindling resources and space. Additionally, results also found that vertical development and practical space usage in harmony with aesthetics and environment to achieve balance of both use and presentation.

Keywords: *Compact cities, Urban Mosque, Vertical Development*

1. Introduction

Mosques are vital part of every Islamic society and is primarily a place where spiritual and social connections among Muslims are expressed and established. In a historical context, mosque in a sizeable community have a significant influence beyond religious focus into most, if not all aspects of the life of the community. It is not solely a place of prayer but also a venue where the city's interaction takes place, it is a site for preaching and learning and a place of refuge where community work is also done (Morris, 2013). Architecturally, it is a structure uniquely Islamic which over time has evolved based on the socio-economic influences of eras, technological development and arising needs of the population and the environment.

Urban enclaves such as compact cities are prime examples that display the modern transformation in mosques, showing its adaptation with the environment, consideration of urban lifestyle changes, innovation of use of space, optimizing functionality and maintaining overall aesthetic presentation of the structure. The urban mosque is a fairly new concept, it is described as "a new type of institution that presents a particular image of urban design, spatial diversity and the use of public space" (Kahera, 2002).

According to Asoka, Thuo and Bunyasi, the rapid population growth of cities is often associated with population demands that outdo the infrastructure and service capacity thus leading to environmental degradation. Similarly, it also affect efficient management from the government, rising costs in building and maintenance and most importantly a far reaching impact to future generations to come (Asoka, Thuo, & Bunyasi, 2013).

The same consideration must be therefore applied to infrastructures vital to the community such as mosques. In a compact city setting, expansion must be considered in the context of a vertical development which is (1) within the boundaries of its intended capacity, (2) the needs of the population, and (3) serving and sustaining the function of the infrastructure whilst preserving the traditional and /or aesthetic style natural to the structure.

This study therefore attempts to evaluate modern urban mosque architecture in compact city setting in order to evaluate on the sensibility of its designs as well as address important issues relative to its purpose and how it can be improved for further optimal use.

2. Development Issues Within A Compact City

The definition of compact city is varied and defined more based on its characteristics by urban and environmental planners and organizations. The origin of the compact city is mentioned to date back during the fortress cities of the 16th century, which were made for protection from attack of a foreign enemy. The purpose of the compact city similarly varies from age to age (Kaji, Kanegae, Ishibashi, & Hara, 2003).

By modern times however, it is aimed at a sustainable society which are based on three principles. See Table 2.1 for (Dantzig & Saaty, 1978) idea on compact city:

Table 1 Dantzig and Saaty's Compact city characteristics

Urban Form	Spatial Characteristics	Social Functions
(1) High dense settlements	(4) Mixed land use	(7) Social fairness (high dense settlements)
(2) Less dependence on automobile (high density)	(5) Diversity of life (mixed-land use)	(8) Self-sufficiency of daily life
(3) Clear boundary from surrounding areas	(6) Clear identity	(9) Independence of government (clear boundary)

Modern life especially in urbanized areas is associated with the usual issues of congestion, space constraints and socio-economic problems which makes planning and design a vital aspect in developing compact urban areas. It should be viewed and approached with the perspective of sustainability within the context of a modern culture and lifestyle (Barrett, 2000; Shaari, Abdullah Mohd Asmoni, Afiq Lokman, Abdul Hamid, & Mohammed, 2015).

Religious buildings, including temples, churches, synagogues and mosques have always been one of the integral components of the urban layout (Ayhan & Mert Cubukcu, 2010). The Mosque as a vital part of a Muslim majority area therefore helps support the change process. Its existences as part of urban landscape (1) improves quality of life and (2) fosters growth within the community in the social, moral and even economic sense (Ziari, 2004).

3. Perspectives on Mosque and Urban Development

In recent years, the concept of urban development has led to sustainable urban growth, in both micro and macro levels. The quality of life is directly related to the quality of the environment and therefore space and its structures can change and transform the quality of life. It changes communication networks, social and economic development aspects of society and more importantly the influence the reaction of the population.

Religious buildings, including temples, churches, synagogues and mosques have always been one of the integral components of the urban layout (Ayhan & Mert Cubukcu, 2010). The Mosque as a vital part of a Muslim majority area therefore helps support the change process. Its existences as part of urban landscape (1) improves quality of life and (2) fosters growth within the community in the social, moral and even economic sense (Ziari, 2004). Religious scholars emphasized the presence of the mosque as a condition for a society to fulfil its Islamic way of life in the city. As (Hakim, 1989) noted from his study of the Islamic literature that the city should have a congregation mosque, masjid al-Jami, in which the Friday sermon was given and in which the city's residents and its surroundings were served (Al-Hathloul, 2004). This importance was first established by the construction of the Prophet's mosque in Madinah (Asif et al., 2015). The mosque served both as a place of worship and as a community center for the city, and thus played an important function in the formation of the new society.

4. Study on Selective Cases: Mosques in Compact Cities

In this section a brief discussion will be presented on selected mosques around the world. As this paper will focus on developing a framework for urban mosque in Nusantara context primarily, the selection of mosques follows several criteria.

1. To study mosque in Nusantara context, mosques within this region are chosen. (i.e. Indonesia, Honk Kong, Singapore)
2. Among the selected regions, cities with high density of population are chosen to ensure that the selected mosques are situated in compact urban settings.
3. Type and size of mosque and functionalities, spatial topology and architectural features/designs are considered to select cases.

Based on these criteria the selected mosques are (1) Istiqlal Mosque, Jakarta, (2) Kowloon Mosque & Islamic Centre, Hong Kong and (3) Masjid Al Islah Punggol, Singapore. Brief discussion on the cases are presented below.

Istiqlal Mosque, Jakarta

The largest mosque within Nusantara is Masjid Istiqlal or Independence Mosque. It is situated in the Indonesian capital city Jakarta. Istiqlal mosque is the national mosque of Indonesia which was built to memorialize the independence of Indonesia and the name of the mosque reflects the concept, Istiqlal, the Arabic word for Independence. Jakarta being a dense urban city, this mosque is position next to Merdeka Square and Jakarta Cathedral.

Kowloon Mosque & Islamic Centre, Hong Kong

In 1896, the Kowloon Mosque and Islamic Center was established in Singapore where Tsim Sha Tsui Police station is now situated. During the underground construction of Mass Transit Railway in late 70's, the mosque's structure was affected. So the MRT corporation gave compensation to the Kowloon mosque to be built on a new site at 105 Nathan Road. The compensation money and donation from the Muslim community was utilized to erect the new structure.

Masjid Al Islah Punggol, Singapore

Al-Islah mosque in Punggol, Singapore is a mosque with land constraints yet accommodating the needs of the community with an open style planning strategy. Within less than a year after its opening, this mosque has become the epicenter of Punggol's rapidly growing Muslim community.

5. Comparative Discussion on the Design and Function of the Selected Cases

This section presents discussion highlighting the design and functional aspects of Istiqlal mosque, Kowloon mosque and Al-Islah mosque. The key factors and information are first compiled in tabular form below.

Name of the Mosque	Location	Capacity per Land Area* (Person/Sqm)	Facilities	Programs
Istiqlal Mosque (1978)	Jakarta, Indonesia	(200000/90000) 2.22	<ul style="list-style-type: none"> • Main prayer hall • Classrooms • Resting areas • Plaza (multipurpose area) • Landscape garden • Office • Madrasa 	<ul style="list-style-type: none"> • Religious classes • Resting areas for the travelers • Conferences • Iftar and sahur programs • Casual markets (plaza area) • Hosting events for related institutions
Kowloon Mosque & Islamic Centre (1984)	Hong Kong	(3500/25200) 0.14	<ul style="list-style-type: none"> • Main prayer hall • Clinic • Daycare center • Community Center • A/V room • Market and food stall • Guest room • Staff dormitory • Kindergarten • Class room • Library • Exhibition • Office 	<ul style="list-style-type: none"> • Religious classes • Class for children • Group discussion • Seminars • Lecture sessions • Entertainment activity • Medical services • Daycare service • Tourist activities • Retail book shop • Food shops
Masjid Al Islah (2015)	Punggol, Singapore	(4500/3700) 1.21	<ul style="list-style-type: none"> • Main prayer hall • Education center • Administrative center • Plaza • Classrooms 	<ul style="list-style-type: none"> • Religious activity • Religious classes • Kindergarten • Lecture sessions • Public plaza (elevated) • Open 24 hour for prayer

*information related to the mosques are retrieved from (Ward, 2017), (Haroon, 1995) and (Asif & Utaberta, 2016)

From the above table, it is evident that the capacity usage of Istiqlal mosque is higher (2.22) than the other two mosques. While Kowloon mosque with its lower capacity has the most elaborate facilities and programs for the community. Considering the design characteristics, Istiqlal mosque and Al-Islah mosque have more contemporary design style and Kowloon mosque blends traditional elements with contemporary styles.

Part of the muslim community in Indonesia consider the architectural style of Istiqlal mosque more in harmony with the Arabic style. According to their opinion the Istiqlal mosque is unable to portray the Islamic culture and architecture of Indonesia. In response, former president Suharto began an initiative to construct more mosques of the Javanese triple-roofed design (Crossette, 1987). On the other hand, the Kowloon mosque, designed by architect I.M. Kadri, represents the unique identity of the Muslim community in Hong Kong. Decorated and elaborate, the traditional Muslim architecture of the mosque distinguished itself from the rational and modern architecture of the nearby commercial buildings (Haroon, 1995). Among all these three cases, Al-Islah mosque have the most distinguishable design characteristics. Noted from the designer of the mosque who commented, we seek the notion of an 'Open Mosque'. As an integral part of the Punggol community, the new mosque aspires to be a model of openness, reflective of contemporary Islamic aspirations in Singapore. The idea of openness extended beyond the formal manifestation of visual porosity, accessibility and climatic openness, to the embracing of different needs within the Muslim community. At the greater community level, in addressing the role of the mosque in promoting religious understanding (Asif & Utaberta, 2016).

Apart from the religious programs and additional communal activities, these three cases have one thing in common. All these mosques are used by the community as a recreation park with properly designed landscape features. Istiqlal mosque is situated within a large area having landscaping of its own while the Kowloon mosque is adjacent to a public park. Interestingly, Al-Islah mosque does not have the provision for a proper garden for its land constrains, so the architect created a landscape settings similar to a public park on the first floor of the mosque complex. The place is called elevated plaza and the nearby community uses this place quite frequently as reported by (Peterson, 2016) one of the community member said, "this mosque has something for everyone," congregant Noorain Ahmed said while waiting for a daughter one Saturday. Our neighborhood youth even come and do their homework here".

One of the significant aspects noted from the discussion is the use of vertical spaces within these mosques. Unlike the traditional style of horizontal or spread out design, these mosques tend to be developed in a vertical manner to accommodate its functions within the settings of compact neighborhood. The vertical arrangement of the spaces can be seen from the above drawings. Instead of a large prayer hall with high ceiling, which is a common practice for the traditional mosque designs, these mosques distribute their functions in a vertical manner above the prayer hall to fulfil their functional requirement within the limited land.

6. Conclusion

This paper has discussed the design aspects of contemporary mosques in compact cities of Nusantara region. It was found that design characteristics of these mosques play an important role in society and community service which includes social and even political purposes. The impact of urban mosque in compact cities were found to be phenomenal in some cities especially for countries where Muslims are minority because it becomes a representation of the Muslims there and signals social change and development in their society. As for Muslim majority societies in compact cities such as Hong Kong, it is more of a reflection of the "metamorphosis" not only of the Mosque architectural style but also of the country's historical and cultural evolution.

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