



Architecture of the Jawa Mosque in Bangkok and Its Javanese Style

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Abstract

Jawa mosque is a 116-year-old mosque in the CBD of Bangkok. It is the center of the Thai-Muslim community of Javanese origin. The mosque needs to be conserved to keep the community's identity and heritage, as a symbol of the existence of this ethnic minority in Thailand. This paper demonstrates how the style of the mosque is Javanese. The methodology is qualitative including ground research coupled with a literature review. First, ground research and site measurements are carried out to collect critical information for further analysis. Second, a literature review focuses on the theories on the origin of mosques in Java. Next, a comparative analysis between the Jawa mosque and the Javanese style mosque is carried out, followed by a result and discussion. Last, a conservation approach is discussed based on the significance of the building. The results of the comparative analysis show that the Jawa mosque meets 5 out of 6 distinct characteristics of the Javanese mosque as described in 1947 by Prof. G.F. Pijper, a Dutch historian from Leiden University: 1) the ground floor is square, 2) the roof is a pyramidal tiered-roof, 3) the platform is elevated, 4) there is a *mihrab* (niche) for prayer towards the Mecca city, and 5) there is a *pendopo/serambi* (front veranda) in the front and the *balae* (side veranda) for community gathering. This confirmation along with an analysis of the conservation approach based on the significance of the building - can be useful for further architectural conservation projects of the Jawa mosque. It can serve as a guideline or important architectural aspects to consider for further renovation and construction projects of the mosque.

Keywords: Jawa mosque, Javanese style, Architectural conservation

1. Introduction

The Jawa Mosque (or in Indonesian: Masjid Jawa) is a 116-year-old Javanese style mosque, located on Soi Charoen Rat 1/9, near South Sathorn Road, the CBD of Bangkok. As indicated on the building's historical plate, the construction began during June and August 1905, during the reign of King Rama V.

1.1 Specific factors of the Jawa Mosque

Specific factors of the Jawa Mosque can be described as follows (Sumali, 1998):

1.1.1 history of community: Even though the reference to the Javanese Muslims in Siam was first found in the literature since the Ayutthaya period, an important migration of the group is from the reign of King Rama V. The King was so impressed with the Javanese style garden, during his third visit in 1901 (Figure 1), imported Javanese gardeners to the Siamese Kingdom. The community of the Javanese origin Thai-Muslims has grown ever since.



Figure 1 King Rama V was received by Pakubuwono X during his third visit to Java in 1901 (Juthamas, 2018)



1.1.2 ethnic group: People in the community are not only Javanese-Indonesian Muslims, but also Malaysian Muslims (Bayan). The succession of the Jawa mosque's imams shows that they were of Javanese origin and Malay origin interchangeably. The Javanese of the Jawa community have been mixing with the Malays to the point that no one is a pure Javanese anymore. However, they were able to keep the Jawa mosque until today as proof of the existence of this minority group in Thailand.

1.1.3 role of Muslims in society: in the old days, under Dutch colonization during 1599 and 1945 the Javanese people migrated to Thailand because of some political, economic, and social problems, especially levy and enforcement planting, that occurred on the Java island. They expected to make a better living in Thailand, where there were no religious, racial, and cultural barriers, and save some money for the pilgrimage to the holy city of Mecca in Saudi Arabia. They had all kinds of professions, such as merchants, Arabic teachers, and oiling technicians, and have accumulated enough wealth to buy lands. Today, they are comfortable with the way of life in Thailand and have become active members of the society: constructors, doctors, and professors to name a few.

1.1.4 way of life: Their identity, such as the language, the way they dress, and the food, is unique. Today, members of the community cannot speak Javanese anymore; only some old people know Javanese vocabulary in everyday life (how to call relatives, objects, and food). They called their community area *Sugei Baru*, which means "the new canal" or Sathorn canal. As for the food, there are unique menus such as *lontong* (elongated rice cake cooked in banana leaf), *petjel* (traditional Javanese salad with peanut sauce), and *nasi ambeng* (fragrant rice dish).

1.1.5 religious beliefs: Jawa community's religion is Islam. However, they live peacefully with neighbors of different ethnicities and religions: Buddhist, Christian, Teochew Chinese, and Hinduism.

1.2 The architectural value of the Jawa mosque

Jawa Mosque has become the center of religious and cultural activities, not only of the Thai-Javanese (Indonesian origin) but also the Thai-Malayu (Malaysian origin). It is also an attraction for tourists from Indonesia. The mosque needs to be conserved to keep the community's identity and heritage, as a symbol of the existence of this ethnic minority in Thailand.

1.3 The scope of studying and conserving of the building

In 2020, the Faculty of Architecture, Rangsit University is commissioned to renovate the school building and design a new multi-purpose building, within the land plots of the mosque – without touching the mosque itself. For the integrity of the project, it is important to study the history of the mosque as well as its architectural style, which claims to be of a Javanese style. As a result, the renovation becomes relevant and has a meaningful reference to its historical context. The scope of the study is, therefore, to focus on the architectural aspect of the Jawa mosque and try to understand how it is similar to the Javanese mosques in Indonesia. Moreover, we propose an architectural conservation approach for this current design project as well as future constructions of the mosque.

2. Objectives and Research Question

2.1 Objectives

The objectives of the study are:

- 1) to demonstrate that the style of the Jawa mosque is Javanese
- 2) to propose how to conserve the mosque

2.2 Research question

As first evidenced, the name of the mosque "Jawa" does infer directly from "Java." A hypothesis is that the style of the Jawa Mosque is Javanese, and this paper is to confirm it by a demonstration. After all, it is clear that the style of the mosque is not similar to those found elsewhere in the country, which is largely influenced by the architecture of the Middle East. One question arises: What does a Javanese mosque in Indonesia look like and how is the Jawa Mosque similar to it?



3. Methodology

The methodology is comparative research consisting of:

1) A qualitative study of the existing mosque. The study is largely carried out through ground research and site measurement to gather critical information, such as site dimension, current usage, existing physical (such as architectural elements and structures), and functional requirement of the extensional phase, which is because there is no floor plan with exact dimensions available except a physical model at a scale of 1:200 and some drawings on the Internet from the previous survey done by Mr. Athorn Dalan, an interior designer (Sriruangrungekamol, 2020). A historical study is carried out through literature review and informal interviews with the people in the community and the committee members of the mosque. They told a vague history of the mosque, how the Javanese people came to the Kingdom, and when the mosque was constructed. As for the building requirements (before/after renovation and extension), it was given to the architects by the committee members of the mosque,

2) A qualitative study of the Javanese study is carried out through a literature review (see paragraph 4.3). The study focuses only on the mosques in Java, including the theories on the origin of mosques on this Indonesian island,

3) A comparative analysis between the Jawa mosque and the Javanese style mosque is carried out, followed by a result and discussion. A conservation approach is discussed based on the significance of the building.

4. Result

4.1 The existing physical

4.1.1 Surroundings

The Jawa mosque located on Soi Charoen Rad, near South Sathorn Road, is a center of multi-religion activities. Many important religious sites are surrounding the Jawa Mosque (Figure 2):

- To the west of the mosque, Hindu temples can be found, such as Vishnu Temple (Soi Wat Prok) and Arya Samaj (Chan Road),
- To the east, Christian churches and chapel can be found, such as Phra Karunathikhun Christendom (St Louis 3 Alley), Saint Louis Catholic Church, and Holy Spirit Chapel (South Sathorn Road) and it all extends to New Life Suan Plu Church in Soi Suan Plu,
- To the south, a Buddhist temple can be found (Wat Prok),
- Also on the south, many cemeteries can be found (Thai-Islam Cemetery, Wat Don Cemetery, and the Teochew Cemetery, which belongs to the Chinese community).

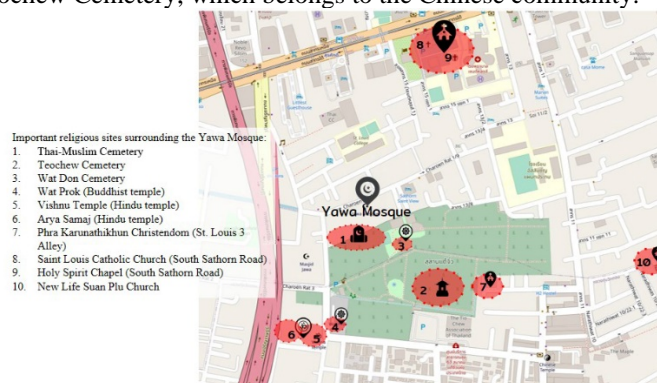


Figure 2 Important religious sites surrounding the Jawa mosque

4.1.2 Land plots

The land plot of the Jawa mosque consisting of 3 plots of land (Figure 3).

- To the left is the Masjid's front land plot (88 sq. Wah), currently occupied by a house.



- In the middle is the Jawa mosque land plot, where the mosque itself is situated (1 Ngan 68 sq.Wah).
 - To the right is the Jawa mosque school building (1 Ngan, 39 sq. Wah),
- The total site area is 3 Ngan 95 Sq. Wah (1,595 square meters) = or nearly 1 Rai according to the Thai unit of measurement for land.

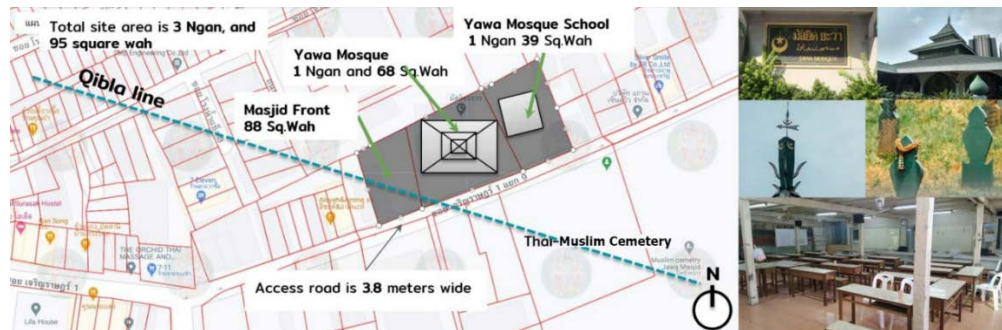


Figure 3 Jawa mosque land plots

4.1.3 Orientation (*Qibla*)

The mosque building is not aligned parallel to the boundary of the land plot. It is in fact placed along the east-west axis (Figure 3). As a result, the *mihrab* (a niche in the wall of a mosque) is at the point nearest to Mecca, toward which the congregation faces to pray. The exact orientation to the Mecca is represented by the Qibla line (Figure 3). Therefore, it is important to note that the building rooflines of the Yawa Mosque (Figure 2), which also indicates mihrab orientation, did not align with the Qibla line.

4.1.4 The Roof

The Jawa Mosque roof is characterized by its dark emerald green pyramidal tiered roof (Figure 4). It is made of 3 pyramids stacking hip roofs. Unfortunately, during a recent renovation, the old roof tile is replaced by modern tiles.



Figure 4 Jawa mosque's green pyramidal roof

Figure 5 shows the stacking tiered-roof of the mosque (arch_kidyang, 2019)

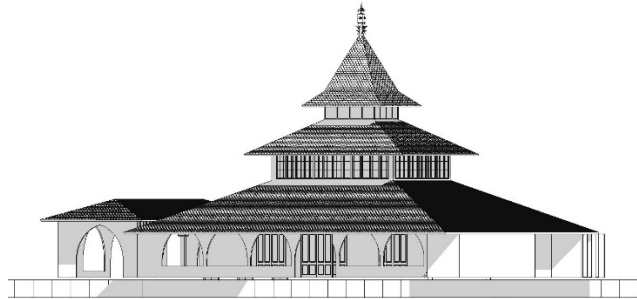


Figure 5 the stacking tiered-roof of the mosque

4.1.5 The Balae

The *balae* (or *balai*) is an attached/side veranda for an informal gathering in a masjid. This type of space is usually found in Indonesian architecture. Figure 6 shows the *balae* of the Jawa Mosque, which is a later addition from the renovation in 1975 (Sumali, 1998).



Figure 6 The *balae* (or *balai*) is an attached/side veranda for an informal gathering in a masjid

4.1.6 The veranda or front pavilion (*pendopo/serambi*)

The veranda or front pavilion is called *pendopo* or *serambi* in Indonesian (Tajudeen, 2017). Figure 7 shows the floor plan of the Jawa mosque with a front veranda (*pendopo/serambi*) and the side veranda (*balae*) (arch_kidyang, 2019). Apart from being utilized for internal mosque function, the veranda (both front and side) was also an architectural approach to respond to our tropical climate.

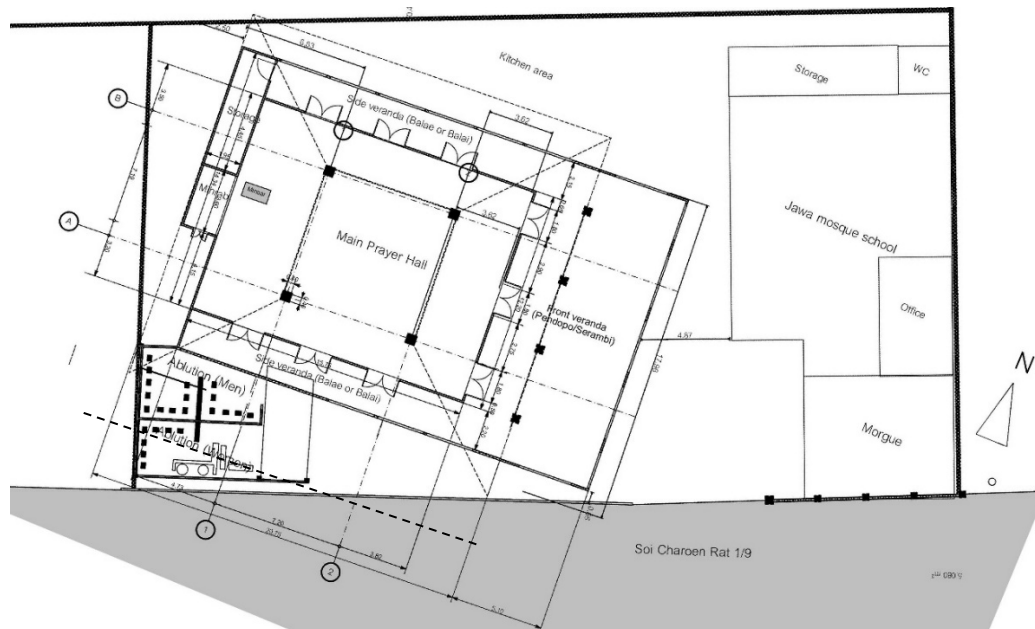


Figure 7 shows the floor plan of the Jawa mosque with a front veranda (*pendopo/serambi*) and the side veranda (*balae*)

4.1.7 The covered extension

The covered extension can be found all around the mosque and between the mosque and the school building (Figure 8), which is due to the lack of functional space, especially during the feasts and the Eids. The material is a metal sheet, due to its flexibility to cover space and its cost-efficiency.



Figure 8 the covered extension in metal sheet

4.1.8 The school building

The school building is a 2-story wooden structure on stilts (Figure 9). After an interview with the Jawa mosque committee member (Sriurangunkamol, 2020), the structure is estimated to be around 60-year-old, therefore, it does not fall under the Thai building conservation act. This act only applies to buildings 75 years old or older. And the community hasn't registered the mosque and the school buildings to the Fine Arts Department either. The pastel doors and windows - yellow and blue - are distinctive elements. The wood



railings are old-fashioned. The wood sidings cover the 4 sides of the walls. The shed roof has got two parts that meet in the middle along with the depth, with a gutter in between. Due to its rather decayed condition, the community wanted to tear it down and build a new one.



Figure 9 Jawa Mosque School

4.2 Activities in the mosque and the school building

The mosque mainly serves for prayers. There are daily prayers (5 times per day), Friday prayer or Congregational prayer on Friday, and Eid prayer. There are two major eids in the Islamic calendar per year – *Eid al-Fitr* (smaller Eid) earlier in the year and *Eid al-Adha* (greater Eid) later. Before those prayers, they are expected to perform a purification ritual called *Wudu*, requiring that they wash their faces, hands, arms, and feet (Shareef, 2016). The bathrooms and outdoor ablution spaces are provided.

The space around the mosque is also used for Eid feasts, weddings, and funerals. Cooking is done in an open-air kitchen area and needs a lot of storage space for kitchenware. The morgue (*myyid*) is found in the front area of the mosque ground, as the dead body has to be buried before sunset. Sometimes the wedding collides with the funeral. There is an outdoor kitchen that takes up a lot of cooking space. The Jawa mosque school is for religious classes, mostly during the weekend. It also serves as a religious examination center twice a year. They need an ablution area in the school building to teach the correct ablution method.

4.3 Theories on the origin of the Javanese style mosque

4.3.1 Theories and previous studies

Indonesia has the largest Muslim population in the world and the majority of them live on Java Island. Hundreds of old wooden mosques were constructed on this island from the 15th to 19th century. Bambang Setia Budi (2004) describes theories of the origin of the Javanese style mosque as follows:

1) Theories Based on Theological (Religious) Interpretation

The early theories forwarded by the Dutch scholars were based on religious thinking. K. Hidding (1933), a Dutch archeologist suggested that the high roof of the Javanese mosque is inspired from the sacred mount form. Theodoor Gautier Thomas Pigeaud (1924), a contemporary Dutch expert in Javanese literature, suggested that the setting of some mosques are found on the water, referring to the Mount Meru, the sacred mountain and the center of the universe in Hinduism, because Hinduism was an important religion that came to Java since the 1st Century. G.P. Rouffaer (1932), a Dutch researcher, argued that the Javanese mosque arises from a Buddhist structure; Buddhism was another dominant religion in Java at the time. However, there are fundamental flaws of these religious interpretations of the theories. There is a gap between religious thinking and architectural problems in physical terms. Bambang Setia Budi (2004) argued that these thoughts were not related to physical architectural evidence and were not easy to accept.

2) Theories Based on Empirical Studies

Willem Frederik Stutterheim (1935), the Dutch archeologist, proposed an argument without many explanations. He said that the Javanese mosques were originated from the large local community Hall in Bali,



such as the fighting-cocks-court. His arguments were confronted by another Dutch historian, Hermanus Johannes de Graaf (1947-1948 and 1963), saying that sacred Muslim prayer would not take place in such a profane structure without stories, found only in Bali and not the rest of Indonesia. However, H.J. de Graaf misinterpreted Stutterheim's hypothesis. Stutterheim should not mean the fighting-cocks-court but a large community hall used for local activities such as meetings, political rallies, or performances. Moreover, by analyzing the tombstones, Graaf suggested that the Javanese mosque style must be brought from overseas by Islamic merchants. In 1947, Prof. G.F. Pijper, a Dutch historian from Leiden University made a strong argument. He stated that the Javanese mosque is not characterized by foreign architecture but by the local structures adapted to religious purposes. An example is the *meru*, a Balinese square tower with stacked roofs narrowing upward. This kind of structure is found in many mosques in Java. Later, some Indonesian scholars also argued about the origin of the Javanese mosque such as Sujipto Wirjosuparto (1962) who did not agree with Graaf's theory. In 1962, Wirjosuparto said that the Javanese mosque must have originated from overseas. He suggested that the mosque form might be derived from the *pendapa* building in Java, which has a square plan; if it was surrounded by a wall, it should look like a mosque; and if it was directed to Mecca and added with the *mihrab* (a niche in the wall), it became very similar to a mosque. He compared it to the Javanese traditional house *Joglo* for the tiered-roof. Although *Joglo*'s roof is multi-storied, it is not pyramidal as found in the Javanese mosques. Then 1985, Claude Guillot, a French scholar went even further by saying that the Javanese mosques were influenced by the stone architecture of India and the wooden architecture of China.

Bambang Setia Budi (2004) criticized that each theory has its weakness and is subject to debate. Some more evidence is needed for further research. Finally, he concluded that the most reliable theory is Stutterheim's theory, which states that the origin of the Javanese mosque should be derived from a local public or community building type that existed in this area.

4.3.2 *The distinct characteristics of the Javanese mosque*

The distinct characteristics of the Javanese mosque have been described in detail by Pijper (1947) as cited by Budi (2004) as follows:

- 1) it has a square plan,
- 2) it stands on an elevated massive fundament,
- 3) it has a pointed stacking pyramidal roof, two to five stories, narrowing upward,
- 4) it has an extension to the western or northwestern side, provided for the *mihrab* (a niche in the wall),
- 5) it has a veranda, either in the front (*pendopo/serambi*) or on the side,
- 6) it is surrounded by a wall, with a single entrance gate.

5. Discussion

5.1 *Result from ground research and literature review and discussion*

From the ground research and literature studies mentioned above, it can be concluded that the Jawa mosque is a Javanese style mosque without a doubt. According to G.H. Pijper's 6 characteristics of the Javanese style mosque mentioned above, the Jawa mosque meets 5 characteristics out of 6: 1) the ground floor is square, 2) the roof is a pyramidal tiered-roof, 3) the platform is elevated, 4) there is a *mihrab* for prayer towards the Mecca city, and 5) there is a *pendopo/serambi* (front veranda) in the front and the *balae* veranda on the side for community gathering. Here is the detailed analysis:

1) the ground floor is square, even though it is found rather towards a rectangle shape. Inside the mosque, there are 4 main columns (*saka guru*) in the main prayer hall to support the main roof, which is an important characteristic of a Javanese mosque (see Figure 7).

2) the roof: the stacking pyramidal roofs are called *tajug* or *meru*. The *tajug* roof has evolved from a Javanese-style house called *joglo*, but the top of the roof is pointy (i.e. an equilateral square base with a peak and a crown on top). While the *joglo* roof is reserved for the house of the nobles, the *tajug* is reserved for sacred buildings, which means it is the highest form in the Javanese hierarchy of roof (Tjahjono, 1998).



3) the elevated platform: the mosque building itself is not quite elevated, only one step up. Like many buildings in Bangkok, the street that was constructed later on was more elevated than the building itself. An old picture shows that there used to be 5 steps up to the mosque.

4) the *mihrab* (a niche in the wall): the *mihrab* is situated in the west of the mosque. However, the mosques themselves are not perfectly aligned according to the *qibla* (praying orientation). Mecca is found towards the northwestern direction of the Jawa mosque. The hypothesis is that, in the old days, there was no Qibla finder technology. Therefore, old people just built the mosque based on what they were told - that Mecca city was found in the west.

5) the veranda: as shown in many Javanese mosques, *pendopo/serambi* (front veranda) is a later addition (Budi, 2006). But it is an original structure of the Jawa Mosque. Figure 10 shows an example of the veranda (*pendopo*) from Plan with Pillar Composition of the Astana Mantingan Mosque (founded in 1559) in Jepara, by Bambang Setia Budi (2006).

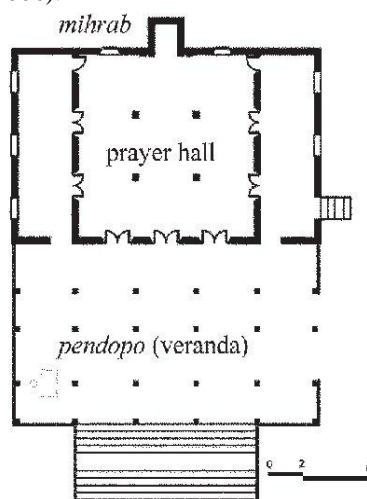


Figure 10 The front veranda (*pendopo*) from Plan with Pillar Composition of the Astana Mantingan Mosque (founded in 1559) in Jepara, by Bambang Setia Budi (2006)

Only one characteristic is missing: the surrounding wall with a single entrance. The surrounding wall of the Jawa mosque has got two entrances: one from Soi Charoen Rat 1/9 and another from a walking alley at the back. It is hypothesized that the mosque's enclosure was walled with a single entrance in the past, but the back entrance was added later for convenience. Another remark is that there is no *minaret* (tower) like other mosques in the country because it is Javanese style.

5.2 Conservation point of view

Endy Subijono (2020) describes three approaches to conservation based on the building's significance (table 1). First, the building is critically significant, the conservation should take the obligatory approach. Like national or world heritage, the building should remain intact or restored to its original. Second, if the building is important, it should take a contributory approach. The modification is allowed but it should retain the key or essential elements. And third, if the building's significance is neutral, the flexibility of the renovation/conservation is allowed.

**Table 1** three approaches to conservation based on the building's significance

Building significance	Conservation approach	meaning
Critical	Obligatory	retain intact or restore to original
Important	Contributory	allow modification but to retain key and essential quality
Neutral	Participatory	allow flexibility

As previously mentioned in the introduction, the Jawa mosque needs to be conserved as it is proof of the existence of the Javanese ethnic in Thailand. According to this conservation point of view, the Jawa mosque is deemed important. It is an old structure with a historical background but not yet listed as a heritage. So a contributory approach should be taken. This approach has been taken by the community in the past, such as roof tile replacement and extension of the roof in metal sheets. As for the school building, it is deemed neutral; it is an old wooden building with an interesting style but its conservation is flexible, according to the functional need, budget, etc. At present, a further qualitative study of the existing mosque is required. This may include documentation of the identification of building damages. This documentation will highly be needed for future conservation works. Moreover, the three levels of conservation approach (building significance) could be an issue to reconsider when the realignment of mihrab (mosque) to parallel to the Qibla line as it should be is a priority for the Muslim community in Bangkok. Another conservation project can be lifting the mosque structure so it is much higher than the current street level, as there used to be 5 steps going up the mosque in the original structure (Sriuangrungekamol, 2020).

Recently, the committee of the mosque would like to rebuild the school building due to its deteriorating condition and also for functional purposes; also, a new building will be added to the land plot on the left. Apart from the proposed conservation approach above, some facts need to be noted for further renovation/extension/construction projects. First, there is no accurate floor plan of the mosque. Only a physical model is provided. And a floor plan, a south elevation, and a section without any dimension from the previous survey can be found on the Internet (arch_kidyang, 2019). The floor plan is entirely redrawn after a ground survey by our team with limitations to access some area, so the accuracy can be compromised. Next, the mosque building stands quite close to the school building. Even though their walls are not parallel to each other, the closest corner is only 2.2 meters apart (Figure 7). It can be a problem for the reconstruction of a new building as the regulation states that the buildings within the same plot of land should stand at least 6 meters apart. Also, it is important to note that the school building, even though it is not quite old according to the building conservation act, still has an interesting style. Since it is an old wooden building, we would like to propose two options, either: 1) lifting it and adding another lower floor for additional function, or 2) tear it down and build a new one that is similar to the existing style. But it has to meet the building regulations for fireproof, therefore, entirely rebuilt in concrete. As for the current renovation and extension project, the community would like to build a new school building and a new multipurpose building on the left land plot.

6. Conclusion

It is important to study the historical context of a mosque to keep it relevant and meaningful for both the community as well as to the general public. This paper has demonstrated how the Jawa mosque in Bangkok is a Javanese style mosque. The Jawa mosque's architectural elements can be described using the same technical term as in Javanese such as *pendopo*, *serambi*, *balae*, *tajug*. It meets 5 out of 6 characteristics of the Javanese style mosques as mentioned by Pijper (1947). The conservation approach based on the significance of the building is proposed. This confirmation can be useful for further renovation/construction projects of the mosque.



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