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A Study on Development of Mosque Architecture in Southeast Asia

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Introduction

Study of architectural history has started since the late 1970s, firstly of vernacular architecture, and lately of mosque architecture. However, because these studies have been made in each country, whole image of development and typology of the mosque is not clear yet. This paper aims at discussing historical development and variety of the mosques which were built before the Second World War in Southeast Asia and Southern China.

1. Attempts to Construct Masonry Mosques by Foreign Builders

Moslem traders arrived at *Quanzhou* (泉州), one of open ports for tribute trading in *Sun* (宋) dynasty, in the early 11th century through India Ocean and South China Sea. They had to stop over sometime around Malacca Straits to wait for a succeeding seasonal wind. Meantime, as *Srivijaya* Hindu kingdom based on *Palembang* was still powerful, Moslem traders might not be allowed to build own religious buildings in substantial manner, but Southern China.

Sun dynasty welcomed foreign traders, and provided them with open ports and settlements. The settlements were exclusively ethnic-based, and each ethnic group was lead by their leader [Hall 1985]. As they had some autonomy, they could manage own religious facility as much as they could afford. In most of Chinese open ports such as *Nimpo* (寧波), *Quanzhou* and *Canton* (廣東), there are remains of old mosques dating back to *Sun* or *Yuan* dynasty.

Moslem religious facility consists of mosque for praying space, minaret as broadcasting tower, and water closet to purify body before praying. In tropical monsoon area, mosque is usually roofed to protect prayers from rain fall and sun shine. If compared with Buddhist and Hindu, Islam needed more spacious building as it accept prayers in a group especially on friday [Robert 1994]. Such large space has been created by big domes under the *Ottoman* Empire, and by a series of small domes in *Arabian* and *Berber* regions. They were used to masonry construction before accepting Islam, and tended to construct their building by the existing manner and materials wherever they settled down as much as the local condition is allowed.

In China, main stream of Islam was via inland route, and arrived at heart of China such as *Xi'an* (西安), *Chendu* (成都) and *Beijing* (北京), where they were not seemingly allowed to have mosque of their own style even though materials and technique for that construction were available as Buddhist ar-

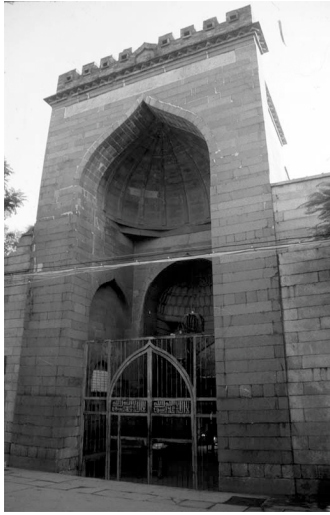


Fig.-1 Entrance Facade

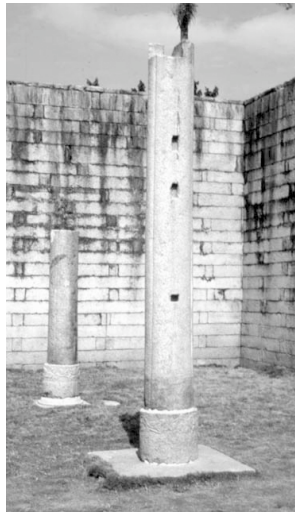


Fig.-2 Pillars and Tenons

Fig.-3 Dome and *Squinch*, *Quanzhou*Fig.-4 *Qibla* Wall, *Mihrab* and Pillars, *Quanzhou* Mosque, *Fukien*, China

chitecture changed its style when it was brought from India into China. Every foreign religion had to wear Chinese timber framed architecture with roof tile.

***Quanzhou* Mosque**

The condition seem to have been rather loose in coastal area. In *Quanzhou*, there is an uncompleted mosque just outside of former walled city, and it was constructed in *Sun* dynasty by moslem immigrants according to Chinese source [Quanzhou 1991]. Structure remained on the site consists of the entrance building, and the surrounding wall approx. 1 m thick, 3.5 m high, and approx. 18m x 22 m in inner size. The entrance building faces the south, perpendicular to praying hall axis, and is surrounded by thick stone wall. The facade is so impressive that it possess Persian *Iwan*-like recess and battlement. The surface of the second recess is decorated by simple '*Muqarnas*', typical cutting ornament for Moslem architecture.

However, a big question arises in consistency between plan and structure of praying hall, whether such thick and tall wall was intended to protect moslem from attack as fortification or to support heavy roof structure. Old pillers are laid out on grid lines and the tenons of top end show that they would support timber gable roof. However, the pillers do not match to the structure of square surrounding wall, and

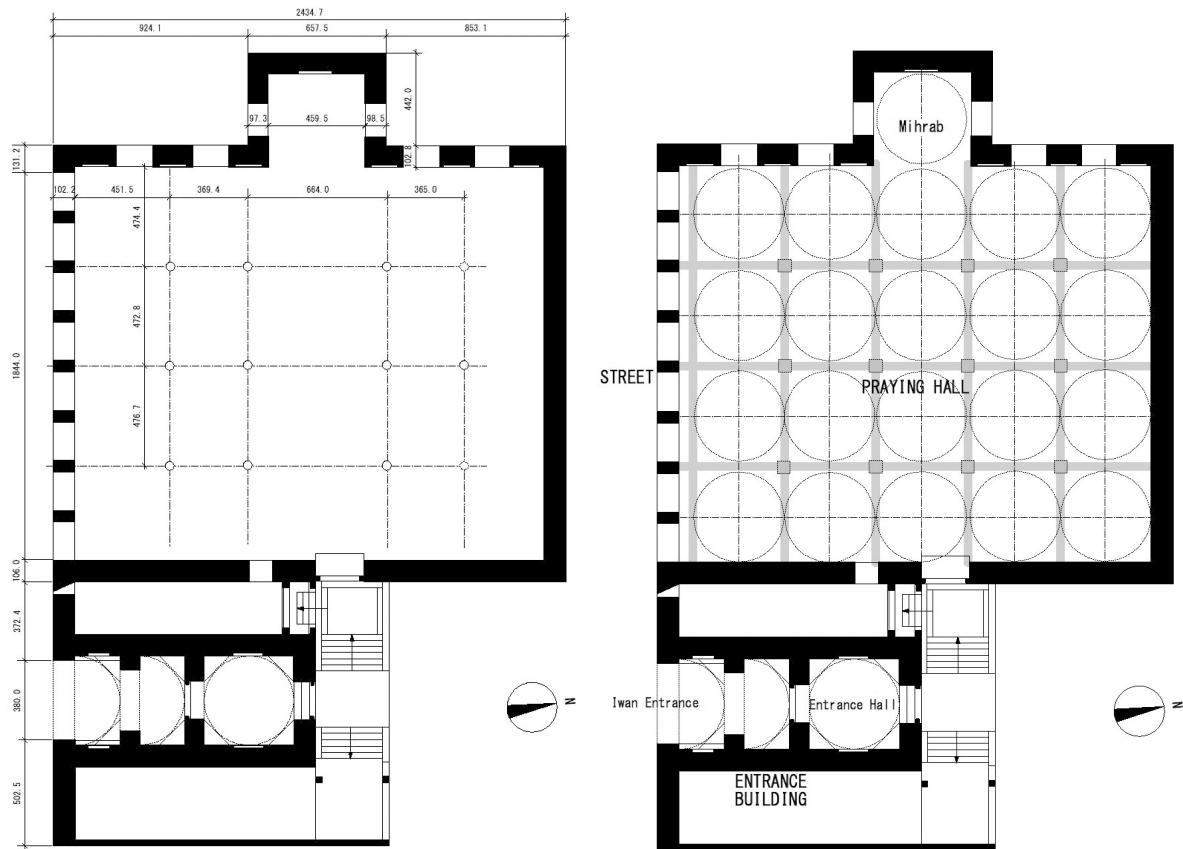


Fig.-5 Plan with Existing Pillars, *Quanzhou* Mosque Fig.-6 Possible Lay-out of Domes

so the it is regarded that gable roof was not initial intention for this building. As the builders of this mosque had used a small dome for the entrance building, they had to do same way for praying hall. 4 pieces x 5 pieces of small domes can be laid out almost exactly within grid lines (Fig.-6). But, the builders quitted and gave up the construction, supposedly because of political straggle, shortage of fund, or lack of technical knowledge and skill. The most possible would be technical reason, ant it had to be too low level to construct masonry roof with a series of small domes.

Crese Mosque, Southern Thailand

In Southern Thailand, there were some Malay sultanates, one of which was *Pattani*. As soon as *Pattani* population accept Islam in the 17th century, they constructed mosque basically imitating local gathering building of timber as discussed later, excepting *Crese*'s case. *Crese* is believed to be port-town of this sultanate, but it remains nothing excepting this mosque and Chinese cemetery nearby. According to a legend, in the late 18th century, Chinese man employed by the sultanate as official converted from his traditional belief to Islam, and commenced building of mosque in substantial manner. His sister of non-

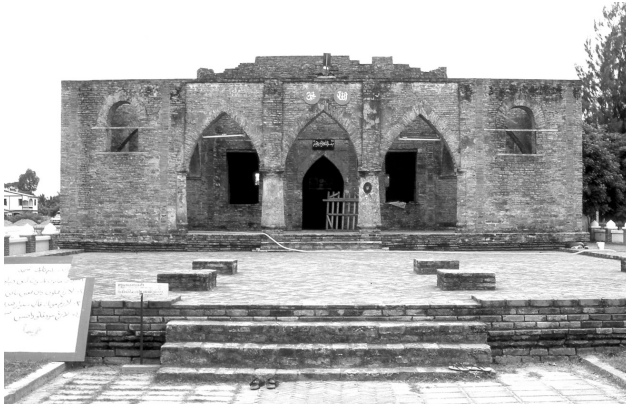


Fig.-7 Facade of *Crese Mosque*

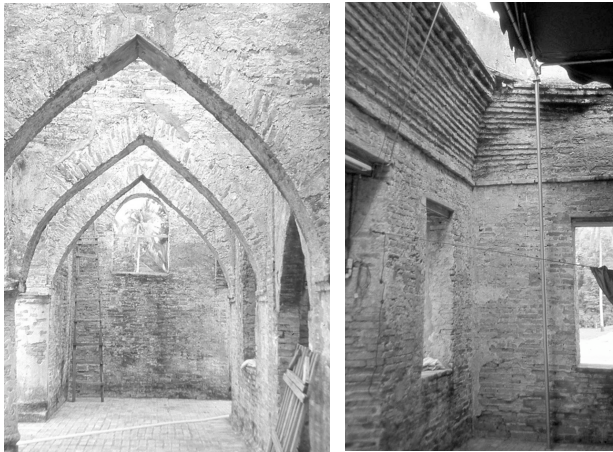


Fig.-8 Pointed Arch

Fig.-9 Corbel

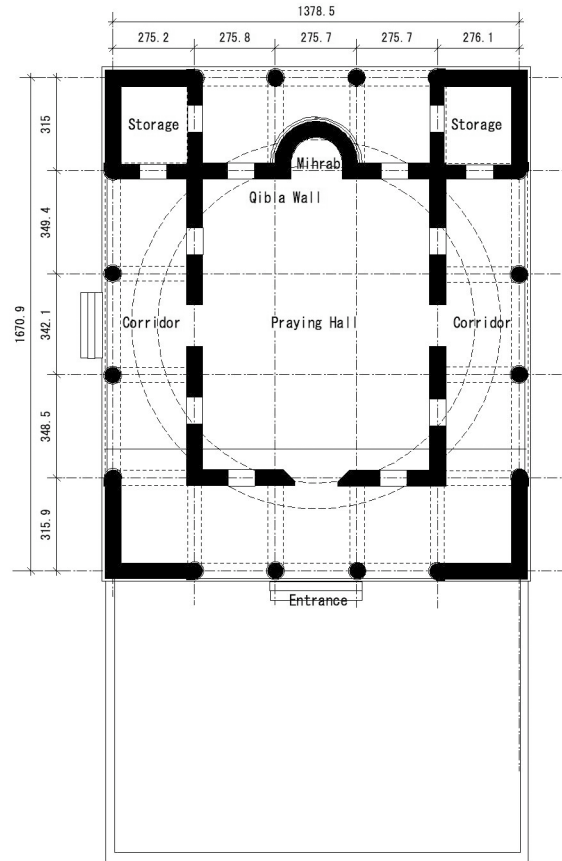


Fig.-10 Plan of *Crese Mosque*

moslem felt so sad that she put a curse on the project, and because of that, mosque has never been completed (Fig.-7).

However, real reason why it could not be completed is possibly mal-design and difficulty of dome construction. 8 m x 11 m rectangular praying hall is surrounded by 2.5 m wide corridor (Fig.-10), and each opening is supported by pointed arch or lintel, which must be made properly in brick construction. But, in this building, arch and lintel constructions are false (Fig.-8), and can not bear heavy roof weight. For roof of the praying hall, the original concept had to be a large single dome because inner wall has corbel to catch link of dome (Fig.-9) and buttress to support lateral force derived from dome. The builders had seen such mosque in somewhere, probably India under *Mughal* Empire, and had actual image of that building, but technique and knowledge. Eventually they gave up the construction.

First successful attempt to construct domed mosque in this region possibly is one in *Pulau Penyangat*, Indonesia (Fig.-11). It is small and simple building consisting of 9 octagonal domes, with a tower at four corners. The opening is spanned by segmental arch, and *Mihrab* design looks like Romanesque style (Fig.-12). It has supposedly been built in the early 19th century, when British took part in Far Eastern



Fig.-11 *Pulau Penyangat Mosque* viewed from East Fig.-12 Praying Hall and *Mihrab*

trade again in the name of “Free Trade”. Details are not known for this mosque, but it must be built with European assistance.

2. Timber Mosque by Local Builders

Buddhist and Hindu erected some construction firstly to store Buddha’s relics, secondly to put Buddha’s image, and thirdly to enable monks to study, talk and live under the roof. Therefore, both religions did not need specious roofed building for prayers. But, probably kings needed it when they held a reception for important figures, and community needed it when they had gathering or some social activities. In Java, it was *Pendopo*, an open reception hall located in front of the palace or high ranking officials’ residence. Central part of the structure is supported by four pieces of *Soko Guru* (Fig.-13), master pillar, and it is surrounded by four side eaves [Bambang 2005: 85-86] (Fig.-14).

The *Pendopo* like gathering hall was possibly converted to Mosque in early stage, and enlarged to accept large number of players soon or later, then the central roof was lifted higher to give heavenly image to the structure. Four sided eaves did not extended further due to availability of long timber for beam,



Fig.-13 *Soko Guru* and *Mihrab*, *Demak Mosque*



Fig.-14 *Demak Mosque*, originally built in 1481



Fig.-15 *Banten Mosque*, with front building



Fig.-16 *Tranquer Mosque*, Malacca

but multiply laid to cover larger space. Meanwhile, wall was erected along outer pillars to close praying hall from outside. Therefore, in early stage of development of timber mosque, surrounding wall was free standing, borne no load. Eaves rafters were connected to upper roof girder directly without any gap. Present *Demak Mosque* (Fig.-13, 14), supposedly built in 1481 underwent several times of restoration work, and changed its form and look. Original Javanese timber mosque form may be seen in *Banten mosque*(Fig. 15) and *Malacca mosque* (Fig.-16), and they are relatively small according to local moslem population if compared with Javanese *Agung Mosque*.

In Indonesia under Dutch rule, each region was administered by Dutch Resident or *Bupati*, a Dutch appointed local chief,who formed local administration center with open square and city mosque, following Javanese urban tradition [David 2002]. The open square is called *Alun Alun*, and city mosque *Agung Mosque* (Fig.-17). Although the mosque building is more grandeur and simpler than previous one (Fig.-15, 16), the style is mostly same, just enlarged and standardized. However, the outer partition wall and timber pillars were easily replaced by bearing wall (Fig.-18), while roof remained hipped form as seen in *Aceheen Mosque*, Penang (Fig.-19). As minaret was free from local architectural culture, it was constructed by masonry with various design.



Fig.-17 *Agung Mosque*, *Yogyakarta*, built in 1758



Fig.-18 *Kotagede Mosque*, *Yogyakarta*, built in 17c

Fig.-19 *Acheen Mosque, Penang, founded in 1808*Fig.-20 *Aceh Agung Mosque, Aceh, built in 1881*Fig.-21 *Deli Mosque, Medan, built in 1906*Fig.-22 *Alor Setar Mosque, Kedah, built in 1912*

3. Euro-Saracenic Mosques built under European Colonialism

New age arrived to mosque design in the end of the 19th century. British became a viceroy in Islamic world after Crimean war and Anglo-Indian annexation. As discussed by *T. R. Metcalf*, British in India changed design of public buildings during 1860s from Neo Gothic to Saracenic, which was preferred to show sympathy to Indian culture and because it was only a substantial construction among Asian architecture. This idea was welcomed by Dutch East Indie and British Malaya, where they were going to tame local sultanates and Islamic population..

After bloody straggles, Dutch East Indie succeeded to control northern Sumatran sultanates in 1880s and assured to rebuild their palace and city with grandeur and modern manner. The most effective showcase to represent 'coming of new age' would be mosque building, which was constructed in *Aceh* (1881, Fig.-20) and *Deli* (now *Medan*, 1906, Fig.-21) with assistance of Dutch architects and engineers. The most reliable source for mosque design was derived from *Edmond Street*, British architect, who published a book on Iberian Islamic architecture in 1862, and from *James Fergusson*, British architectural historian,

who wrote “History of Architecture in India and Further East (1867)”. Mosque in *Aceh* and *Deli* tastes *Cordoba* Islamic architecture rather than *Mughal*.

In opposite side of the Malacca Straits, British successfully formed Federated Malay States in 1882, and soon they commenced construction project of new capital, now Kuala Lumpur. The buildings including Secretariat, Post Office and Court were designed in Anglo-*Mughal* taste with British alternate stone and brick layers and *Mughal* dome and arch. As soon as *Kedah* state joined FMS, he started construction of state mosque with British assistance (Fig.-22), followed by *Kangar* state. These mosques were intended to have look of sympathetic design for modern Asian population under colonial rule. The design itself was borrowed from some where, and had no local roots, nor architect’s interpretation of local condition and Islam.

4. Modernism Style Mosque by European Architect

Euro-Saracenic style mosque became too much popular in 1920s to go on , and then *Selangor* sultan made up his mind to build a mosque of newer style in his premise as he was deeply fascinated by European culture. *L. N. Guillemard*, British High Commissioner to FMS realized sultan’s dream with appointment of *L. Kesteven*, F.R.I.B.A. as architect, who completed the mosque in 1932. Although his carrier, appointment and intension are not known at all, his design for the mosque is very unique and fantastic, Secession plus Art Deco tast with white plastering and naked reinforced concrete (Fig.-24). But, no Islamic image is found without moon symbol on spire.

Klang mosque appears very rare and unique, in other words it is internationalistic without any local roots and typical arabesque motifs. However, due to economic recession and approaching of next World



Fig.-24 *Klang* Mosque, *Selangor*, built in 1932



Fig.-25 Entrance Hall, *Klang* Mosque, *Selangor*

War, public building construction including mosque decreased, and challenge to modernism style was postponed to post-war period.

5. Conclusion

Mosque architecture appeared in coastal area of Southeast Asia and Southern China in 11th century. First attempt to build masonry mosque with domes failed due to lack of techniques and knowledge. Soon, they imitated a local gathering building for their praying, that was timber construction with square plan. During Dutch colonial role in the 18th century, Javanese cities were rearranged following a specific urban form, in which grand mosque of specific style was laid out on west side of Grand Square.

However, to give roof on large space by single structure needed another construction method. It was brought by European colonial power with new style, Euro-Saracenic. It was the first substantial single structure mosque in South east Asia, followed by Modernism style mosque. The mosque design in Malaysia was much free, while Indonesia had standardised tiered roof timber structure especially in Java before the WWII and eagerly sought modernism style for the mosque after the independence.

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