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Research Article

Shunhua Jin*

The Transformation of Domes in Medieval Chinese Mosques: From Immigrant Muslims to Local Followers

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Abstract: This article studies the evolution of the Muslim community in China between the fourteenth and sixteenth centuries from the perspective of mosque architecture. It analyses four medieval Chinese mosques with domed mihrab chambers: the Hangzhou Phoenix Mosque, the Songjiang Mosque, the Dingzhou Mosque, and the Qingyang Great North Mosque. The article focuses on the dome-roof of the mihrab chamber in these mosques, applying an art-historical approach to examine the construction methods, as well as the decorative details of the dome-roof. To explore the origin and function of the domes in these mosques, I compare them not only with local architecture but also architecture from Central Asia. Meanwhile, the historical text on building construction examines the links between the Muslim community and the transformation of the architecture. The appearance of the mosques' roofs reflects the fact that the immigrant Muslims became local Muslims under the authority and conciliation of the Ming central administration.

Keywords: Chinese mosques, domed mosque, Muslim community, Muslim in China, Hangzhou Phoenix Mosque

1 Introduction

1.1 General Overview

If we briefly summarise the history of Muslims in China, there are probably three key moments. The Arab traders who came to China during the Tang dynasty (618–907 CE) are regarded as the earliest Muslims lived in China. But it was not until the Yuan dynasty (1271–1368 CE), as the result of the expedition of the Mongols, that a large number of Central and Western Asian Muslim immigrants came and settled in China. With the fall of the Yuan dynasty and the rise of the Ming dynasty (1368–1644 CE) ruled by the Han Chinese, the Muslim community changed significantly, and this was the time when a new sub-culture formed, that of the Hui or Sino-Muslims (Rossabi, 2014, p. 232). For clarification, the appendix of the article shows the major dynasties in Chinese history. The history of Islam in China has been explored by historians (Dillon, 1999; Frankel, 2021; Rossabi, 2014) and in recent years has evolved into a more established area of scholarship; for example, James Frankel (2021) has recently published a book on the general history of Islam in China. It is necessary to be

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aware of the diversity of Muslims in China; the most significant two communities are the Turkic Uyghur in Xinjiang and Hui or Chinese-speaking Muslims living in many provinces in China nowadays. Like the literature mentioned above, this article deals with the Hui Muslim mosques and community.

Compared to historical study, archaeological research on Islamic materials in China is even rarer (Armijo, 2020). However, being the ritual centre of Muslim communities, the architectures – and especially the mosques – bear witness to the history of these groups. Steinhardt wrote that “most of the approximately 100 Chinese (historical) mosques that bear evidence of the nearly 1400-year presence of Islam in China are associated with the Hui” (2015, p. 1). By linking the historical Mosques to digital gazetteer records, historians have listed a total of 1,774 mosques known to have existed in China since the Tang dynasty (Henderson & Ryavec, 2016, p. 193).

Undergoing a lengthy process of changing materials as well as designs, many mosques that are still standing nowadays in China have adapted to Chinese architectural systems with wooden timber frames. A pioneering historian of Chinese architecture, Liu Zhiping (1909–1995), first published a survey book on mosques in China in 1985. His research provided measurements, plans, and photos for some of these mosques (Liu, 1985, 2011). According to Liu, “during the Yuan dynasty, the mosques in China underwent significant transformations, blending the forms of central Asian and Middle Eastern mosques (such as the use of bricks and domes) with the layout and timber-frame structures commonly found in Chinese architectures” (Liu, 2011, p. 7).

Liu’s observation drew my attention to mosques in the Yuan period, and in this article, I argue that the transformation of the mosques in China continued into the Ming dynasty. Additionally, I am concerned with two further related topics in this research: the Hui Muslim Community and also their mosques. My work develops the proposal that the architectural transformation that Chinese mosques went through corresponds with the changes in the Muslim community between the fourteenth and sixteenth centuries in China.

1.2 Analysing the Muslim Communities in China Through Mosques

Approaching cultural memory and identity, Jan Assmann argues that there are three aspects on which a single society bases its self-image: a canon of sacred scripture, a basic set of ritual activities, and a fixed and hieratic language of forms in a principle of architectural and artistic types (Assmann & Czaplicka, 1995, p. 133). I would suggest that all three aspects also reflect the self-image of the Muslim community in medieval China. Particularly the sacred scripture has captured the interest of many scholars (Chen, 1984; Chen & Kalus, 1991; Dieterici, 1859; Gladney, 1987; Yu & Lei, 2001). Qur’an were copied, and both tombstone epitaphs and stelae written in Arabic scripts were found in the Chinese mosque complexes. The Arabic or Persian writing on the tombstones presents the name, place of birth, date of birth, and date of death of the deceased, showing the origins of the Muslims. At the same time, a number of texts on Islam named “Han kitab” written by Chinese Muslims, particularly during the Ming dynasty, have also gradually entered the scholarly landscape in recent years (Lai, 2020; Petersen, 2017). Studying the textual resources is the most frequent way in which scholars have studied Muslim communities in China.

By contrast, this research focuses on the third aspect of self-image described by Assman: a fixed and hieratic language of forms in art and architecture. As Armijo wrote, archaeological evidence confirms the presence of large foreign Muslim communities who had settled permanently in China, built prominent mosques, and established cemeteries for their congregations (Armijo, 2020, p. 579). This perspective has received little discussion in the study of Islam in China. Even in the limited studies that do exist, architecture was discussed as a part of evidence alongside the historical text, while the materiality is neglected. Applying the art-historical approach, I analyse the design and construction of four domed mosques built during the fourteenth and sixteenth centuries and compare them to local Chinese architecture as well as domed mosques in Central Asia. These four mosques are as follows: the Hangzhou Phoenix Mosque in Zhejiang Province (30°15′51.6″N, 120°10′08.6″E), the Songjiang Mosque in Shanghai (31°00′21.5″N, 121°13′38.0″E), the Dingzhou Mosque in Hebei province (38°31′04.6″N, 114°59′38.4″E), and Qinyang Great North Mosque in Henan province (35°05′36.7″N, 112°56′38.4″E) (Figure 1). The key factor in this research is the dome in the mihrab chamber of mosques.

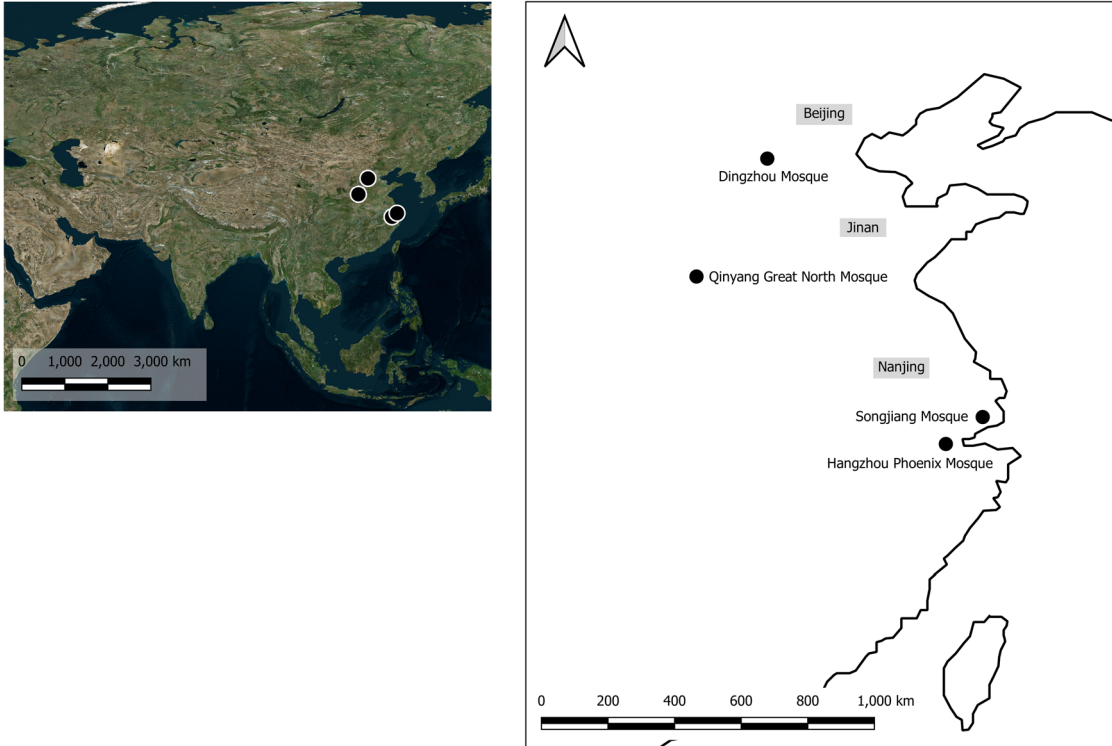


Figure 1: Location of the Hangzhou Phoenix Mosque, the Songjiang Mosque, the Dingzhou Mosque, and the Qinyang Great North Mosque, 2023, by Hagit Nol.

1.3 The Importance of Dome-Roof in Chinese Mosques

A glance at the Hangzhou Phoenix Mosque clarifies the theme of research. The mihrab chamber is constructed with three domes, while the exterior of the domes is covered by three pyramidal roofs resembling three kiosks (Figure 2). This “dome-roof” is rare in mosques in the Islamic world as well as in Chinese architecture. However, this suggests two reasons that the dome could be a key to analyse the mosques in medieval China. On the one hand, generally speaking, domes built in brick were uncommon in Chinese architecture. Even though few early Chinese mosques survive, domed mosques make up a portion of them. On the other hand, roofs play a prominent role in the appearance of Chinese building complexes. In the Han dynasty (202 BC–220 AD), five different types of roof already existed and continued to be applied in architecture: the hip roof (庑殿), the gable and hip roof (歇山), the flush gable roof (硬山), the overhanging gable roof (悬山), and the pyramidal roof (攒尖顶) and respective eaves (Liu, 1984, p. 14; Liang, 2000, p. 133) (Figure 3).

Therefore, the “dome-roof” casts out questions that why these mosques applied domes in the mihrab hall, but the outer roof follows the Chinese architectural tradition? What sort of the self-image of Muslims reveal in the variation in the dome-roof?

1.4 The Structure of This Article

Building on the research methodology above, analysing the Muslim community in China through the mosques, this article first studies the architecture of four domed mosques and then analyses these within the social context of the Yuan and the Ming dynasties.

The first case is the Hangzhou Phoenix Mosque, which is exceptional because of the large scale of its three domes. It has received attention from scholars due to the numerous epigraphies found in the mosque (Ji, 1960; Liu, 2011, pp. 30–32; Lane, 2018; Steinhardt, 2015, pp. 82–88). George Lane published a book on Hangzhou



Figure 2: The roof of the Hangzhou Phoenix Mosque, photo in the public domain.

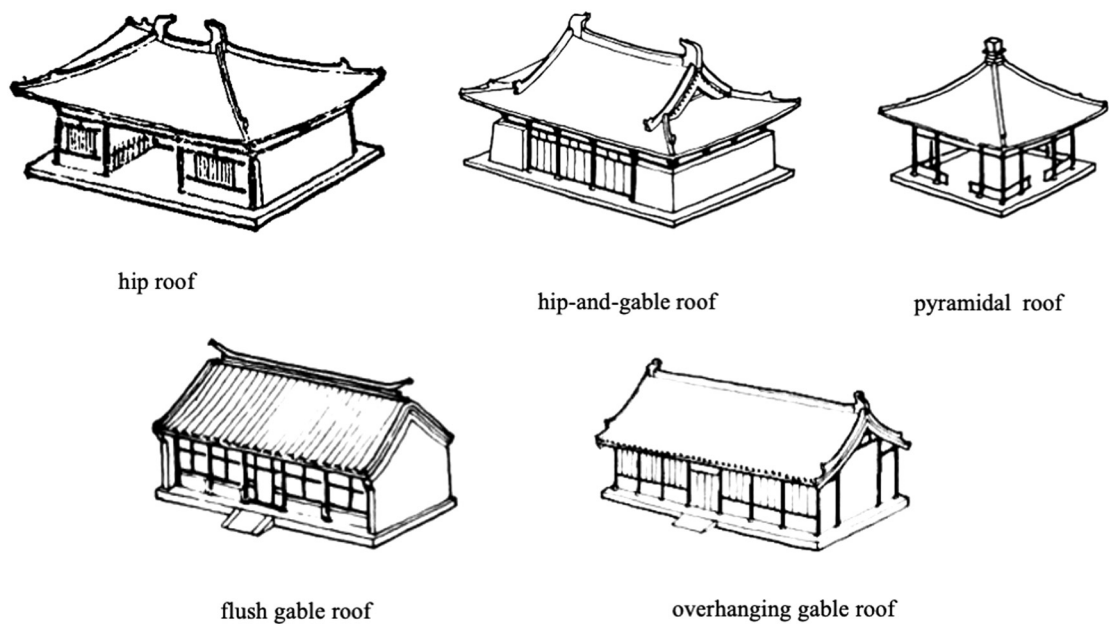


Figure 3: Chinese roofs in the Han dynasty (202 BC–220 AD), 2023, by the author after Liu Dunzhen (Liu, 1984, p. 15).

Phoenix Mosque and the Persian immigrants in Hangzhou, still mostly based on textual resources (Lane, 2018). In this article, I re-examine the patronage and technique of the dome, providing new interpretations. The second part of the case studies will explore three other domed mosques: the Songjiang Mosque, the Qinyang Mosque, and the Dingzhou Mosque, through their dates and dome techniques and decorations.

The following parts of the article provide analysis. The architectural technique and design of the mosques will be compared with medieval Central Asian mosques and Chinese Buddhist temples. The argument pertains to the technical reasons for using three-dome and dome-roofs and how they have evolved in the layout of the mosque. The last part delves into historical texts on the building regulations and the patronage of mosques. It endeavours to connect architectural forms with the Muslim community in China, providing insights into the reasons behind the changes in mosque architecture and the community's self-image. In summary, this art-historical study of domed mosques from fourteenth to sixteenth century China aims to explore the Muslim community's transformation through the lens of the mosque architecture.

2 The Hangzhou Phoenix Mosque and Its Three Domes

2.1 The Date and Patronage

The Hangzhou Phoenix Mosque is located in Hangzhou, a city close to China's East Coast. The date of the mosque comes from two types of resources: one is the stelae of the mosque, and the other is the description from local geographical books and travelogues. Five stelae found in the mosque present its history in short words and record the restorations of the mosque. One of them is written in Persian and Arabic, and the other stelae are composed mainly in Chinese (Lane, 2018, p. 221). An inscribed stele erected in 1648 reads, "The mosque originated under the Tang (618 to 907 CE) and was destroyed by fire towards the end of the Song (960 to 1279 CE). During the year xinsi of the Yuan (1281 CE), there was the Grand Master A-Lao-ding ('Alā' al-Dīn) who came from *Xiyu* and stopped at Hangzhou...and donated money to rebuild it" (Lane, 2018, p. 41). According to Lane's research, the oldest stele in Chinese is dated to 1453 CE and refers the construction date of 1281 CE (Lane, 2018, pp. 221–222). Texts inscribed on two other later-period stelae suggest that the Hangzhou Phoenix Mosque was first built during the Tang dynasty (618–907 CE). Based on the stelae and a street map of Hangzhou circa 1274 CE, Lane suggested that the mosque can be dated to the early Yuan period (Lane, 2018, p. 40). The second type of resource is historical text. An early mention of the mosque was found in *West Lake Travel Notes* (西湖游览志) by Tian Rucheng (田汝成 1503–1557 CE), a gazetteer on the geography and local history of Hangzhou, which records that the recent mosque was constructed during the Yuan Dynasty around 1314 CE, and sponsored by the Hui master A-Lao-ding ('Alā' al-Dīn) (Tian, 1958, p. 239). Therefore, one of the two resources for the date points to the early Yuan period (1281 CE), while the other middle Yuan period (1314 CE).

Both the stela and the travelogue refer to the Muslim master A-Lao-ding from *Xiyu* as the patron of the mosque. *Xiyu* refers to West Asia in Chinese historical resources, meaning areas such as Turkestan, Persia, or Arabia. For further identification of 'Alā' al-Dīn, Lane quoted a resource in Chinese from Bai Shouyi (d. 2000 CE) and suggested that the father and the grandfather of the Muslim poet Ding Henian had been the officials in Lin'an (the old city name for Hangzhou). Ding's great-grandfather is 'Alā' al-Dīn, who would be the one who patronised the mosque (Lane, 2018, p. 47). However, I have some doubt about this. According to Bai, instead of Lin'an, the grandfather of Ding Henian had been an official in Linchuan, a county in Jiangxi province, 500 km away from Hangzhou (Bai, 2000, p. 605). A bibliography of Ding Henian with his family genealogy written in the fourteenth century by one Ding's close friend shows no evidence that his ancestor 'Alā' al-Dīn, who was awarded land from the Yuan emperor in Beijing, had been to Hangzhou (Wang, 2008, pp. 406–407). Ding Henian, who was born in Wuhan, came to the area around Ningbo only between 1353 and 1379 CE, and Hangzhou was not mentioned (Wang, 2008, pp. 409–412). Furthermore, 'Alā' al-Dīn is a *laqab* in the Arabic-Persian name system, defined most simply as an epithet, usually a religious or descriptive one. 'Alā' al-Dīn, sometimes written as Aladdin, means "nobility of faith," which follows an *ism* (name). It is difficult to identify the exact person with only a *laqab*. A scholar's research mentioned three Muslims with the name of 'Alā' al-Dīn during the Yuan dynasty (Yang, 2017, p. 38). Therefore, the legacy of Ding and his great-grandfather as the patron of the mosque is still a myth. Although the identity of 'Alā' al-Dīn could not be easily identified from the written records, it can be confirmed that the mosque was patronised by a Persian. The tombstones that have been found also show that some of the attendants of the mosque in the fourteenth century were Persians.

These tombstones bear the names of the deceased, such as Shams al-Dīn al-Iṣfahānī, ‘Alā’ al-Dīn al-Iṣfahānī, Bakhtiyār al-Bukhārī, Maḥmūd al-Khurāsānī, and Maḥmūd al-Simnānī (Lane, 2018, p. 99).

2.2 The Construction and Decoration of Three Domes

The architectural layout of the mosque during the fourteenth century is under debate. Nowadays, the Hangzhou Phoenix Mosque has a projecting portal (Persian: *pīshṭāq*), a meeting room, a prayer hall with a mihrab chamber. A sleeping room and the ablution space are located on the side of the courtyard (Steinhardt, 2015, p. 85). Some parts were rebuilt in the last century, for example, the *pīshṭāq* was rebuilt after the gate was demolished in 1929 (Lu & Zhang, 2005, p. 43). The prayer hall in front of the mihrab hall was rebuilt in 1953. Supposing that the early layout did not include the prayer hall, the mosque would have a large courtyard and an entrance gate from the courtyard to the domed chamber. This possible old layout resembles one of the frequently-used mosque plans of Seljuk Iran (1040–1157 CE): a mosque had a single *iwān*, a vaulted portal opening onto a courtyard (Hillenbrand, 1976).

The mihrab chamber has been divided into three smaller rooms lined up in a row. Each room has a dome on top of it, and the mihrab is situated in the middle room. Lu and Zhang’s research provides the measurement: the mihrab chamber in total has a rectangular layout spanning 28.55 m in length. The largest room in the middle measures 8.8 m in both width and length. It boasts a hemispherical dome that spans 8.24 m in diameter. The highest point is 12.83 m off the floor. The rooms located on the north and south sides of the central room are comparatively smaller. The dome in the north room has a diameter of 6.9 m and a height of 11.32 m, and the south room’s dome has a diameter of 7.31 m and a height of 11.45 m. Additionally, the north room is square-shaped, covering an area of 7.04 m in both width and length, whereas the south room is slightly more extensive, measuring 7.45 m in both dimensions (Lu & Zhang, 2005) (Figure 4). The exterior of the domes

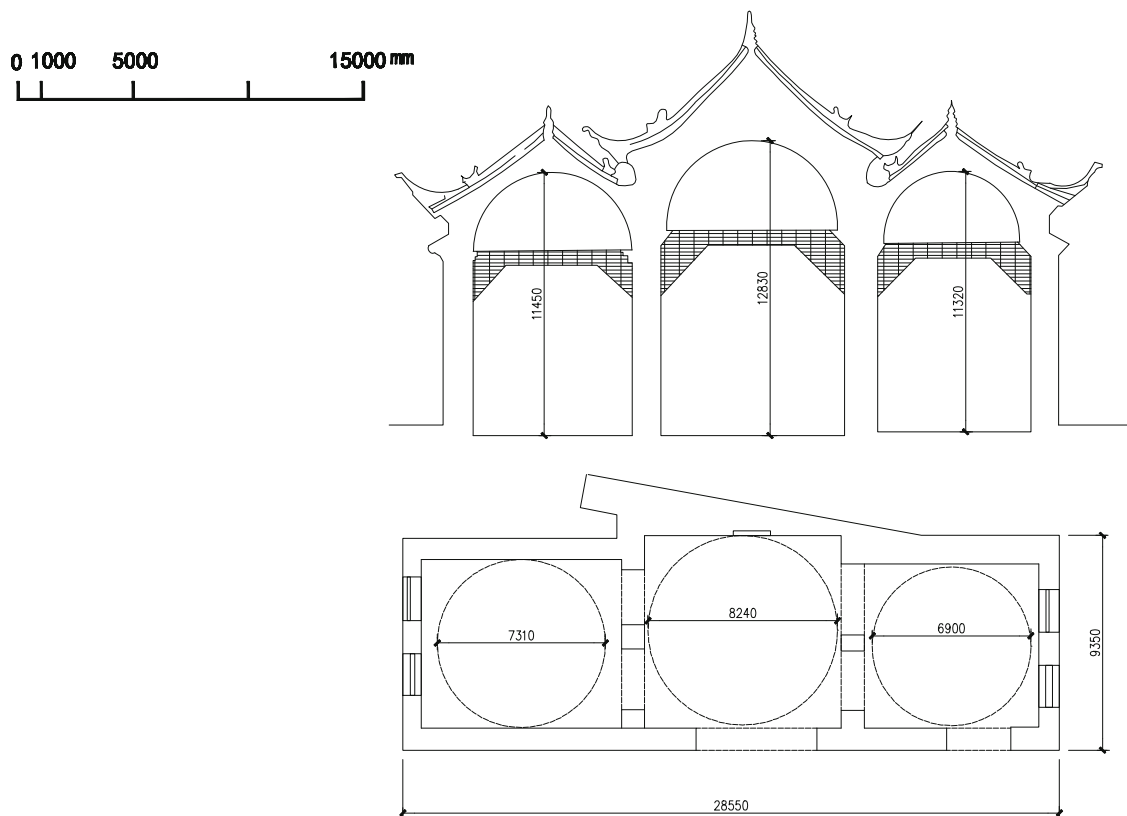


Figure 4: Architectural section plans of four domed mosques, 2023, by the author after Liu Zhiping (Liu, 2011).

was constructed with three pyramidal roofs. The middle one is particularly distinctive with respective eaves and octagon ridges, while the other two roofs on both sides have a single eave and hexagon ridges.

Despite the fact that domed vaults have been used in tombs in China since the first century BC, the largest preserved one is in the Sun-Wu tomb in Jiangning, Nanjing, measuring 6.03 m in length, 4.56 m in width, and spanning 7.56 m diagonally (Xu, 2018). The base of the domed vault is rectangular, with bricks raised from four sides and capped at the top. In contrast, the dome of the Hangzhou Phoenix Mosque is hemispherical and has a base of a similar width and length. Meanwhile, the scale surpasses the largest vault found in excavated tombs. These suggest that a non-local construction was used for the dome in the mosque. It shows that the principle of transiting the square base to the round dome is similar to the pendentive; however, the curved surface of the pendentive has been replaced with a triangular surface. This type of construction for domes was commonly used in China during the fourteenth century, and not only in the mosques, as proven by a recent architectural study of two fourteenth-century bathhouses in China. One of the bathhouses is located next to a Buddhist temple in Nanjing, and the other one is at the Forbidden City in Beijing. Although the one in the palace is more exquisite, both have two rooms with a dome, pool bathroom, and hearth room. And the triangular transition between the dome and the base applies in both cases (Bai & Chen, 2021).

The decoration under the dome is multiple layers of triangle brick corbels (sometimes called dentilated corbeling) (Figure 5). The simplicity of the form means the origin of the triangle brick corbels is hard to prove. Additionally, the same decoration appears in three types of architecture in China. First, it is found in the Mausoleum of a Mongol prince in North China and Mausoleum of Tughluq Timur Khan in Huocheng, Xinjiang (Blair, 2019; O’Kane, 2004). Second, triangle brick corbels have been present in the eaves of Buddhist pagodas since the Tang dynasty. For instance, each level of the Xuanzang Pagoda (669 CE) has four eaves protruding like roofs, with triangle brick corbels underneath. Third, the small-scale vaults of ancient Chinese tombs also have triangle brick corbels, which gradually extend to the bottom edge of the vault, to bear the weight. Due to the invisibility of the dome’s substructure, it is unclear whether the triangle brick corbels have a load-bearing function in the mosques. The triangle brick corbels resemble muqarnas in function and aesthetics. Muqarnas, a honeycomb-like form of ornamented vaulting in Islamic architecture, is also used to decorate domes. Both



Figure 5: The dome in the mihrab hall of the Hangzhou Phoenix Mosque, 2023, photo by the author.

muqarnas and triangle brick corbels with multiple layers serve to conceal the underlying construction of the transition between the base and the dome.

2.3 “Phoenix” as the Name of the Mosque

Steinhardt suggests that the name of the mosque, “phoenix,” was inspired by its floor plan. The meeting hall is similar to a bird’s body, and the mihrab chamber in the back is the wings. She compares the mosque to the phoenix hall of Byōdō-in temple, an eleventh-century Buddhist temple in Japan, to enhance the argument (Steinhardt, 2008; 2015, p. 87). While comparing the mosque with East Asian architectural tradition is inspiring, two points require further discussion. First, these two buildings with the name of “phoenix” are geographically separated by a sea, and their construction dates have a difference of 300 years. Second, the recent mosque has been restored over hundreds of years; the original plan could be different.

Furthermore, the word “phoenix” is not recorded in the texts earlier than the nineteenth century. The stela and historical records mentioned several different names for the mosque: “the temple of ritual salutations” (礼拜寺), “the true religion temple” (真教寺), and “the hall of Hui” (回回堂) (Fan, 1863; Lane, 2018, pp. 231, 241, 248). The earliest documentation that I found of the word “phoenix” related to the mosque appeared on a stela in 1891 (Lane, 2018, p. 248). The inscription reads: “they chose to put foundations to the west quarter of embroidered silk” (文锦坊). The name-plaque (of the quarter) reads “fenghuang” (凤凰 Phoenix) (Lane, 2018, p. 244). A name-plaque or tablet in Chinese term “paibian” (牌匾) that is usually hung on a wall or placed on a stand as a form of decoration or recognition. It often contains inscriptions or engravings that convey a message, such as the name of a building, a commemoration, or an award. It seems that the mosque was named “phoenix” following the existence of the name-plate for the quarter. In short, the name “Phoenix Mosque” appeared in the nineteenth century or later and is most likely unrelated to its architectural layout.

3 Other Domed Mosques in China

The Hangzhou Phoenix Mosque is not the only domed mosque; several other domed mosques exist in China. This article deals with three of them – the Songjiang Mosque, the Dingzhou Mosque, and the Qinyang Great North Mosque – which were all recorded as being built in the fourteenth century and refurbished in later periods. However, except the Songjiang Mosque, the other two mosques were probably constructed during the fifteenth and sixteenth century. These four mosques, situated next to the coast and the centre of the empire, are relatively close to each other geographically (Figure 1). This part aims to investigate these mosques with domed mihrab chambers, and my primary concern is the date, construction, and decoration of the dome.

3.1 Another Fourteenth-Century Domed Mosque: The Songjiang Mosque

Located 140 km away from the Hangzhou Phoenix Mosque is the Songjiang Mosque, in what is now Shanghai (Figure 1). The whole building enjoys a picturesque garden. Upon entering the first gate, visitors walk through the garden to a small gate on a wave-shaped wall. Behind the wall is the first courtyard and the secondary wall with a *Shanmen* (山门, the gate of three liberations). *Shanmen* is a typical gate in Chinese architecture composed of three doors and the middle door is the largest. The middle door in this *Shanmen* has a dome and another double-storied roof with a cross ridge on top of it, while the left and right small doors have a simple flat roof above them (Figure 6). Adjacent to the gate is another courtyard, then are the prayer hall and the mihrab chamber, which are aligned along a central axial line in the east–west orientation, facing towards Mecca. The Songjiang Mosque features two domes, the smaller one is on top of the *Shanmen*, and the larger is situated in the mihrab chamber. Both of them applied the same decoration on the base of the dome (Figure 7).



Figure 6: The Shanmen of Songjiang Mosque, 2023, photo by the author.



Figure 7: The dome in front of the mihrab, Songjiang Mosque, 2023, photo by the author.

According to *Local History of Songjiang* (松江府志), which was written in 1507 CE, the majority of the mosque, including the prayer hall, was built in the early Ming dynasty (1402 CE). However, some buildings of religious practice may have existed before the mosque on the same site, since the administrator of the county was a Muslim and a Muslim cemetery emerged in the fourteenth century (Lu & Zhang, 2005, p. 91). The technique, decoration, and layout are close to the Hangzhou Phoenix Mosque. For example, the prayer hall and the mihrab hall are connected by an aisle; the pendentive of the dome is covered with triangle brick corbels. Therefore, it is suggested that the mihrab chamber was built in the Yuan dynasty, and the other parts were constructed in the Ming dynasty.

Based on the section plan provided by Liu Zhiping, the dome in front of the mihrab is approximately 7.5 m high. Together with the roof on the top, it brings the total height to approximately 9.6 m (Liu, 2011, p. 34). The prayer hall features a flush gable roof, while the mihrab chamber and the secondary gate have a cross ridge roof. Different exterior roofs accentuate the mihrab chamber and the secondary gate, as well as the passage between them.

3.2 Two Later Cases: The Dingzhou Mosque and the Qinyang Great North Mosque

The Dingzhou Mosque and the Qinyang Great North Mosque are located in the northern region of China, close to Beijing (Figure 1). The Dingzhou Mosque holds three stelae that chronicle its restoration and record the names and occupations of its patrons, which reflects the evolution of the local Muslim community. One stele bears a date of the eighth year of the Great Yuan Zhizheng era, 1348 CE (Ma, 2003). However, this date is questionable because even the stele itself has been falsified to appear older than it actually is. A scholar pointed out that some information shown on the stele, for example, the expression: “three thousand and six hundred scrolls of Qur’an,” did not emerge until the Ming dynasty, so this inscription must have been created after 1461 CE (Yang, 2007).

The Dingzhou Mosque also applies a dome-roof in the mihrab chamber. The diameter of the dome measures around 4 m. Noticeably, the height of the roof is almost twice the height of the dome, and the pyramidal roof exterior has one eave and octagon ridges. Consequently, the mihrab chamber towers over the rest of the complex (Lu & Zhang, 2005, p. 58). The decoration covering the transition between the base and the dome is made of bricks but imitates the components used in Chinese wooden timber-frame architecture (Figure 8). This type of component is used both on *puzuo* (铺作, wooden brackets set on columns) and *dougong*



Figure 8: The decoration under the dome of the Dingzhou Mosque, 2023, photo by the author.

(斗拱, a unit consisting of a number of mortises bearing blocks, arms, and beams). In other words, the decoration under the dome is inspired by the wooden unit in local buildings. This inspiration is witnessed in other brick architectures in China as well, such as the eaves of the Yunyan pagoda (established in 959 CE). The decoration under the dome, along with the date of restorations of the mosque written on the stelae, suggests that the mosque was built in the Ming dynasty.

The fourth domed mosque is the Qinyang Great North Mosque. It constitutes a gate, two courtyards, a front hall, a prayer hall with two large rooms and a mihrab chamber. The axis of the Qinyang Great North Mosque is the longest of the four mosques, as a result, the ratio of its mihrab chamber to the overall size is the smallest. The layout indicates that the major part of the mosque was constructed in the Ming Dynasty when mosques commonly had multi-courtyards and a screen wall, composing a long axial line. A stele records that the mosque was established between 1341 and 1370 CE, continuing in construction until 1424 CE. However, the inscription on another stele states that the mosque was relocated to its current site in 1561 CE and was completed in 1584 CE. Thus, several scholars have suggested that the recent building was probably built after the date of relocation (Lu & Zhang, 2005, p. 102; Steinhardt, 2015, p. 189).

Similar to the Hangzhou Phoenix Mosque, the mihrab chamber in the Qinyang Mosque is divided into three rooms in one row, and each room is covered by a dome. The width and length of each room is circa 3.9 m (Lu & Zhang, 2005, p. 104). The word “Allah” is inscribed in Arabic on the central dome (Figure 9). The decoration under the dome imitates the element of Chinese timber-frame architecture and is close to the *puzuo* in the prayer hall (Figure 10). This creates a visual continuity from the domes to the columns. The exterior of the domes is covered by a flat roof with one cross-ridge roof in the middle. This extra roof is covered with glazed tiles. The size of the domes, the height of the roof, and the decorations provide evidence that three domes of the Qinyang Great North Mosque were built later than three domes in the Hangzhou Phoenix Mosque, but in the same period as the Dingzhou Mosque.

After the sixteenth century, domes in brick became less common in Chinese mosques. However, some mosques employ a type of wooden roof in front of the mihrab hall, referred to as “caisson,” echoing the dome. The caisson (藻井) consists of a recessed panel in the ceiling surrounded by wooden frames adorned with

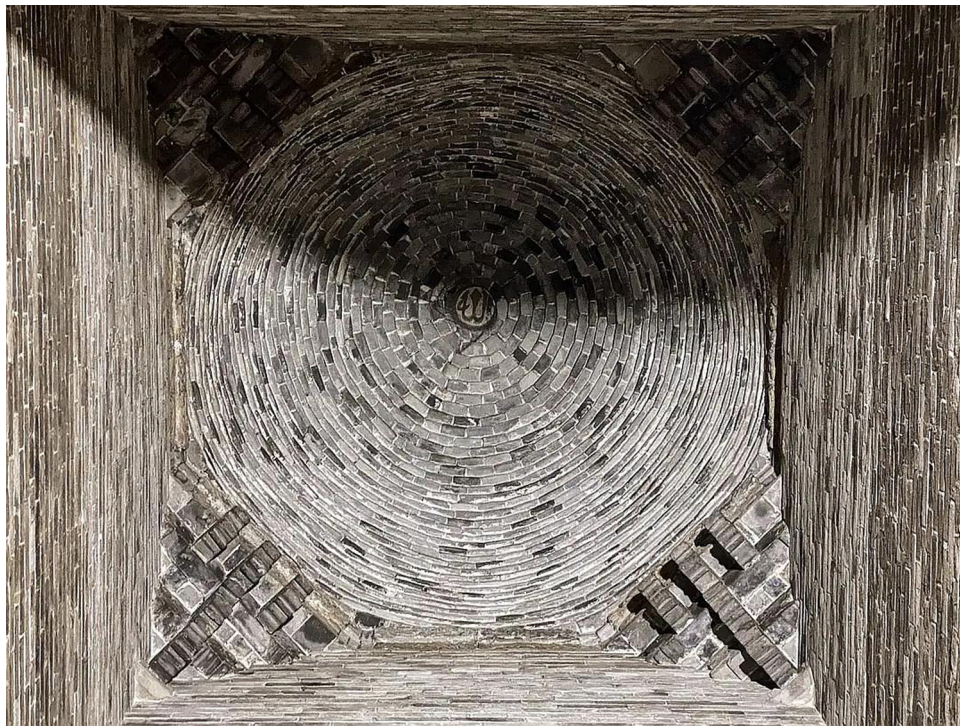


Figure 9: The decoration under the dome in the Qinyang Great North Mosque, 2021, photo by Idris Wang.



Figure 10: The dome in the mihrab hall in the Qinyang Great North Mosque, photo by Idris Wang.

intricate designs and patterns. It is often located above the central throne or religious figure and enhances the important or holy space of the building. Two examples of such mosques are the Botou Mosque in Hebei built in the sixteenth to seventeenth century, and the Hongshuiquan Mosque in Qinghai built in the eighteenth century.

3.3 Comparison Among Four Domed Mosques

These four mosques share several common features. First, the mihrab chamber remains as the oldest construction in each whole mosque complex, while other parts have been refurbished over centuries. Second, the prayer hall and mihrab chamber are separated. Usually, the mihrab chamber is in brick, while the prayer hall and other parts are restored in wood. Third, the roof of the mihrab chamber has two layers: the interior dome and the exterior “Chinese traditional” roof in pyramidal or cross-ridge type, which were added or restored later on top of the dome.

Table 1 shows the location, the coordinates, the dome size, the construction date of the dome, number of domes, the roof style, and the roof height of these four mosques. Among them, the Hangzhou Phoenix Mosque has the largest dome size, and this implies that the size of the dome chamber in mosques has gradually decreased over time.

The section plans of these mosques reveal the variation of the mosque (Figure 11). Above all, these mosques all contain three components: courtyard, prayer hall, and mihrab hall. The mihrab chamber is larger than the prayer hall in the Hangzhou Phoenix Mosque, while the mihrab chamber became smaller than the prayer hall in the other three mosques, and this tendency became more visible in the mosques built in the Ming dynasty. On the central axial line of the Songjiang Mosque and the Dingzhou Mosque are the second gate, the courtyard, the prayer hall, and the mihrab chamber. However, the architectural axis lengthens in the Qinyang Great North Mosque, and a screen wall with calligraphy was installed in front of the main gate,

Table 1: Four domed mosques in medieval China, by the author

Name	Location	Geographic coordinates	Dome size (diameter)	Dome height (m)	Construction date of dome	Number of domes	Roof style	Roof height (m)
Hangzhou Phoenix Mosque	Hangzhou, Zhejiang	30°15'51.6"N 120°10'08.6"E	8.2 m (the middle dome)	12.8	1314	3	Pyramidal	14.5
Songjiang Mosque	Songjiang, Shanghai	31°00'21.5"N 121°13'38.0"E	4.8 m	8.1	Fourteenth century	2	Cross ridge roof	9.6
Dingzhou Mosque	Dingzhou, Hebei	38°31'04.6"N 114°59'38.4"E	3.5 m	7.5	Fifteenth century – 1521	1	Pyramidal	12.0
Qinyang Great North Mosque	Qinyang, Henan	35°05'36.7"N 112°56'38.4"E	3.0 m	11.5	c. 1561	3	Cross ridge roof	15.0

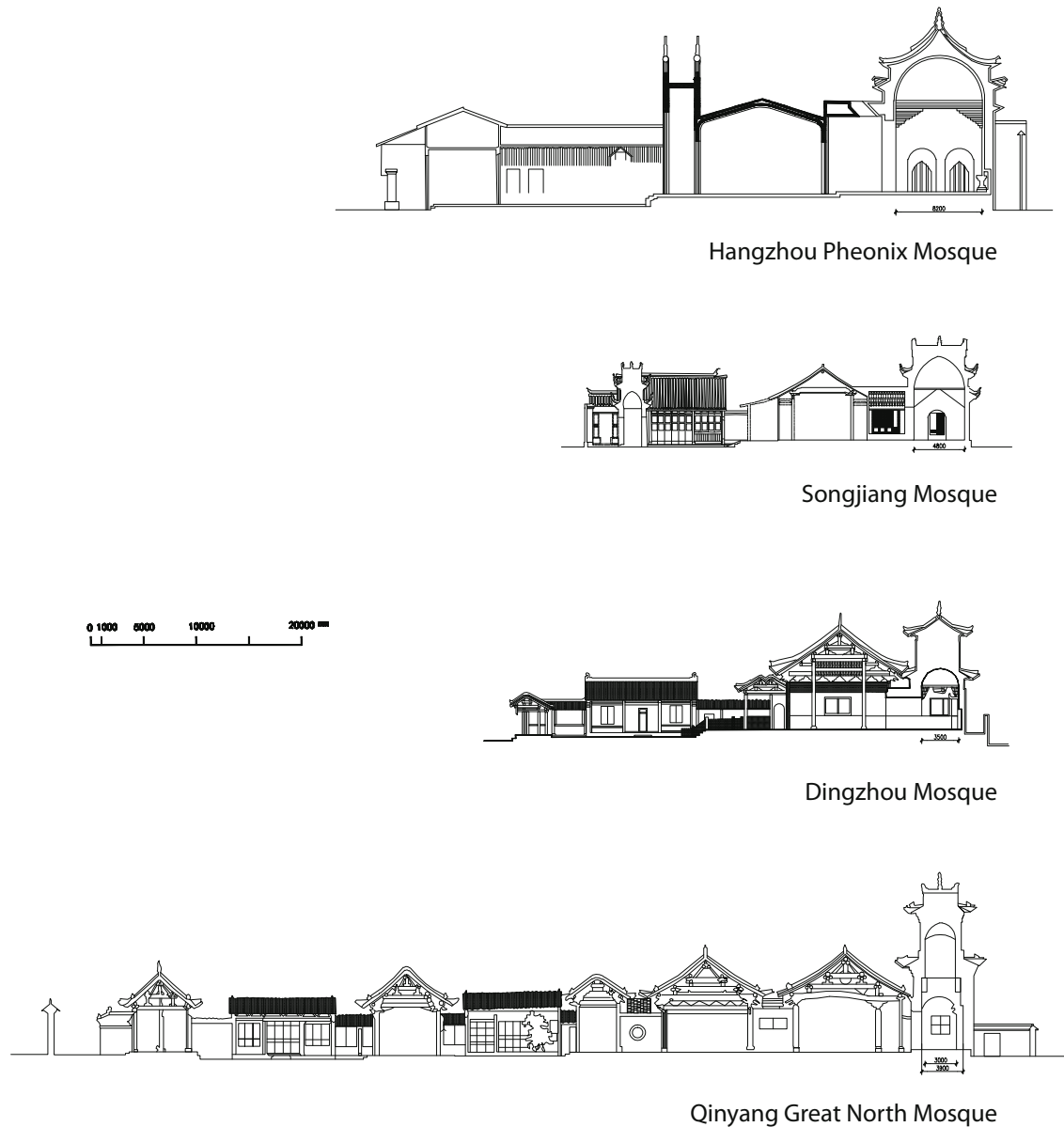


Figure 11: The section plans of the four mosques, 2023, by the author after Liu Zhiping (Liu, 2011).

following two courtyards connected by two passage halls, and the prayer hall and the mihrab chamber at the end. The change of section plan suggests that following the extra courtyards and halls restored and added during subsequent centuries, the mihrab chamber occupies less space in the complex and serves to indicate the direction instead of hosting the prayers.

4 Understanding the Domed Mosques in China

4.1 Three-Dome Structure

The Hangzhou Phoenix Mosque and the Qinyang Great North Mosque have three domed rooms in the mihrab chamber. Nancy Steinhardt compares the three-dome mihrab hall with three-cassion space in Chinese

architecture, providing one example, the Baoguo Temple in Ningbo. It is a Buddhist monastery built in 1013 C, 150 km from the Hangzhou Phoenix Mosque. Three caissons are resting on the ceiling at the entrance of its main hall, and the middle one is the largest (Steinhardt, 2015, p. 86). This suggests a liturgical space divided into three parts in the local architectural tradition. The architectural pattern of “three-position space” could be easily found in Chinese architectural language, for example, the *Shanmen* mentioned above.



Figure 12: The Jameh Mosque of Ferdowsi, photo in the public domain.



Figure 13: Deggaroni Mosque, Uzbekistan, photo in the public domain.

Since the patron and attendees of the Hangzhou Phoenix Mosque were Persians, it is profitable to briefly compare the three-dome to architecture from Central Asia. One example is the Jameh Mosque of Ferdowsi in Southern Khorasan built in the eleventh century, which has three porticos. A recent restoration of the building suggests three domes in a row in front of the qibla wall (Figure 12). Another example is the eleventh-century Deggaroni Mosque in Uzbekistan. This mosque has nine domes covered on the prayer hall; the largest one in the middle is in front of the mihrab (Figure 13). Different construction techniques were applied to complete these nine domes, demonstrating the concept of covering the mihrab hall with domes. It is noteworthy that the three-dome mihrab hall appeared as early as the tenth century at the Great Mosque of Cordoba in Andalusia, Spain (Dodds, 1992, pp. 11–26). In these multi-domed chambers, the middle dome always occupies the position in front of the mihrab.

4.2 The Use of Dome-Roof

In these dome-roof cases, the roofs and domes were usually constructed in different periods, and the roofs could be restored decades or even centuries later. In my opinion, there are several reasons for the dome-roof construction.

Applying a temple-like roof instead of a dome on the exterior was foremost a technical consideration. Double-shell domes were developed in the Seljuk period in Iran, and they significantly enlarged the size of the dome in architecture, as seen, for example, in the Mausoleum of Sultan Sanjar in Merv (1157 CE) (Ashkan & Ahmad, 2010; Cresswell, 1913a,b). A mausoleum of a Mongol prince in Guyuan county, Hebei Province in China, did not show this technique. Built in the fourteenth century, this mausoleum has a square base and a dome, which is similar to the architectural form of the Khorasan region. Some local adaptations can be seen in the *pīshṭāq* and the decoration under the dome (Blair, 2019). The roof has only one shell, without a double shell or a roof on the exterior. Therefore, these domed mosques built in the Yuan dynasty adopted the Chinese-style pavilion roofs on the exterior, probably replacing the absent double-shell technology with an indigenous building technique.

Another reason to use the Chinese roof's exterior is visual consideration. The pyramidal roof enables the mihrab hall to be seen from a distance, aiming to emphasise the holiest space of the whole mosque and the direction of Mecca. This becomes obvious when comparing the construction with Buddhist temples. As discussed above, both mosques and temples have three-position construction, but the exterior roof shows the distinction. Only one hip-and-gable roof covers the three-cassion space in Baoguo Temple, while in the Hangzhou Phoenix Mosque, each of the three domes has a pyramidal roof on top of it. The middle one has the most complex construction, indicating the location of the mihrab.

Additionally, applying roofs reflects the acculturation to the local architectural aesthetics. (1) Roof type: The different roofs reflect the customs and regulations of architecture. Chinese roof design followed a hierarchy whereby pyramidal roofs are commonly used in garden kiosks, while other flat roofs are used in palaces and Buddhist temples. The regulations became more rigorous during the Ming dynasty. At the top of the hierarchy is the hip roof, followed by the hip-and-gable roof, while the other three types, including the pyramidal roof used in gardens, are more flexible in use and not restricted by the hierarchy (Wang, 2009, pp. 25–30). (2) Decoration: Two types of decorations used under the dome in the pendentive – the brackets and the triangle brick corbels – are also found in local buildings.

5 Evolution of the Muslim Community in Medieval China

Reiterating Assmann's theory, the dome in mosques, as a language of forms in art and architecture, reflects the self-image of Chinese Muslim communities. In the Yuan dynasty, a large number of immigrants from Central and Western Asia came to China. They were known as *Semuren* (色目人) or *Huihui* (回回): *Semuren* refers to "people of various categories" (Haw, 2013), while the Hui or Huihui mainly referred to Arabs, Persians, or Turks from central Asia, all of whom practised Islam (Yang, 2015, p. 7). Whereas the former term is more

related to ethnicity, the latter is more concerned with religion. Still, “*Semuren*” and “*Huihui*” were sometimes used interchangeably. According to the epigraphy of the tombstones, as well as the travelogue by Ibn Battūta, there is a consensus that the Muslims who were in China during the Yuan dynasty were *Semuren*, not Chinese (Bai, 1983; Chen, 1928, pp. 3–18). Ibn Battūta writes that, when they arrived, Khansā (Hangzhou), the qādī Afkhar al-Dīn, the Shaikh al-Islām, and the descendants of ‘Uthmān b. ‘Affān the Egyptian came out to meet them. Khansā had six cities (quarters); the Jews, Christians, and Turks settled in the second city, and numerous Muslims lived in the third city. And he records that the Egyptian ‘Uthmān built the congregational mosque in this city and bestowed vast endowments on it and on the hospice (Battuta, 1994, pp. 901–902). These descriptions testify to the fact that the *Semuren* were large in number and had their own living quarter.

Although *Semuren* were more trusted by the Mongol rulers and had a higher political status than the Chinese (Haw, 2013), numerous *Semuren* artisans were forced to come to China during the war. They did not enjoy many privileges or rights and were close to the status of a slave. Nevertheless, they were engaged in a variety of production: first, military items such as artillery; second, luxury fabrics; third, alcoholic drinks and sugar, as well as buildings, tents, goldware and silverware, and so on (Ma, 2004). Because of the substantial population of artisans, they joined together under imperial organisations, such as “House of *Semuren* artisans” (诸色人匠总府) led by *Semuren* officials (Haw, 2013; Ma, 2004). One of the better-known architects and officials is Amīr al-Dīn (黑迭儿丁), who participated in designing and partly leading the construction of the capital of the Yuan dynasty, Khanbaliq, which is the fundamental city plan of present-day Beijing. Amīr al-Dīn was favoured by the emperor and appointed as the supervisor of the House of Manufactures and Buildings (茶迭儿局) and later was promoted to the leading official in the House of *Semuren* Artisans (Liu, 1992). It is possible to speculate that *Semuren* architects transferred the dome technique to China. Not surprisingly, after settling down in China, they continued to use the architectural technologies and traditions of Central Asia to build the mosques, the religious centres of their communities.

In the year 1368 CE, the Chinese took the empire back from the Mongols and set up the Ming dynasty. The new authority established a set of new rules that changed the status of and living habits of the people. The architecture hierarchy was clearly recorded in laws since the Ming dynasty. *The Collected Statutes of the Ming Dynasty* (大明会典), compiled between 1393 and 1587 CE, is a comprehensive book of laws that includes the regulations for using artefacts such as buildings, carriages, umbrellas, and so forth in the chapter of rituals. Then, the use of pyramidal roofs in the four domed mosques leads to a question of whether the official regulations of architecture stimulated the changing appearance of mosques. I consider two aspects to answer this question: the rules on buildings and the management of mosques in the Ming dynasty.

According to *The Collected Statutes of the Ming Dynasty*, officials were not allowed to build houses with hip-and-gable roofs, respective eaves and arches, or painted caissons (Li & Shen, 1587, Vol. 62). The document specifies all aspects of buildings: the length and width, decoration, colour of doors and windows, etc. The residences of princesses, princes, and royal temples were ranked at the top. Then, it divides the officials and commoners into four classes, stating that only the superior class could use the enormous hall. This is not only found in the law book, but similar content is also recorded in *Ming Shi* (明史, the official history of Ming). In an official chronicle of the Ming Dynasty, *Ming Shi Lu* (明实录), it is written that Zhu Yuanzhang, the first emperor of the Ming dynasty, announced the establishment of city god temples in all provinces, prefectures, and counties. The size of temples depends on the hall of the official, while the shrine of the god should be displayed in the same way, and the icon should be placed on the main seat. If the old temple is usable, modify it (Zhu, 2015, p. 1050). The emperor made these announcements in 1371 CE, the third year of the new state, and this indicated his particular concern for the regulation of the temples and rituals.

The use of the same rules for all ritual and monastic buildings probably led to the fact that mosques resemble a Buddhist temple. Since the roof decoration and colour of buildings were also prescribed, the use of green glazed tiles designed for princely residences in the Qinyang Great North Mosque shows its relatively high specification. At the entrance of Jingjue Mosque in Nanjing, a dragon, the most powerful creature in Chinese mythology and the symbol of the Chinese emperor, was carved on the *pailou* gateway made of stone. Under the dragon follows a line of words: “imperial-ordered mosque” (敕赐清真寺). The dragon sculpture and these words present the authority of the Ming emperor at the entrance of the architecture. It offers the mosque great official honour and promises architecture with a high-class design.

An “imperial-ordered mosque” means the mosque was built with permission and rewards from the emperor. This official patronship system was set up in the Ming period and operated until Modern China. A mosque sometimes even can grant precious calligraphy from emperors. It required special effort to obtain the title “imperial-ordered mosque” from the Ministry of Rituals (礼部). One of these four mosques, the Dingzhou Mosque, received the title after a long process. In 1521, inscribed on one stele collected in the mosque, the Muslims of Dingzhou restored the mosque with support from a Muslim official, Chen Xun. Owing to the fact that Chen was an official in government, the Muslims demanded that he apply the imperial title for the mosque. However, Chen Xun passed away before accomplishing this mission, and so this request fell to his brother Chen Xi. He asked an official of the Ministry of Rituals, who was also an acquaintance, about the title. And the official said, “the imperial title is always difficult to gain, as your family has a high ranking as Count, so I apply it for you” (Ding, 2012; Ma, 2003). At the same time, the Dingzhou Mosque was given an official document called “*zhafu*” (札副).

Although the Ming administration did not set up an institution to manage mosques, the mosques were not entirely outside of the supervision. One efficient way to manage the mosques and their communities was through *zhafu*. This system was borrowed from the imperial administration of Buddhist and Taoist monasteries. *Zhafu* is an official document offered to the Imam who presided over the mosque. The Imams with a *zhafu* were not required to pay taxes (Ding, 2016). Similar to the title of the mosque, it is a significant official confirmation of status. Scholars believe that the first mosque where an Imam received *zhafu* was built in Nanjing in the late fourteenth and early fifteenth centuries. It was patronised by the Ming emperor for two *Semuren* warriors – Ibrahim (亦卜刺金) and Jamal ud-Din (可马鲁丁) from Rum (nowadays Turkey). They had served in the Yuan’s army but submitted to the Ming empire (Ding, 2016). In short, the imperial title and document became a soft strategy for managing Muslim communities. Besides this, the Ming government had other tough policies to assimilate the Muslim immigrants; first, immigrants had to use Chinese surnames; second, non-Chinese people of foreign descent living in the Ming empire had to marry a Chinese spouse (Li & Shen, 1587, Vol. 20, 166).

The outcome of the strategy is shown on the inscriptions of the Dingzhou Mosque. One stele, inscribed with a date of 1348 CE, presents many *Semuren*’s names as the patrons. In contrast, on another stele with a date of 1521 CE, all patrons have Han Chinese surnames. Even a scholar pointed out that the former one was made a century later than the written date, and the Chinese transliteration of Persian or Arabic names indicates their understanding of the changing of the Muslim community from the Yuan dynasty to the Ming dynasty. This combination of bestowing advantages and imposing authority formed the political premise of the change in the Muslim community in China.

The strategy of the Ming authority was undoubtedly an important factor in promoting a unified appearance of the buildings. The appearance of the mosques followed the official architectural regulations of the Ming dynasty not only because of cooperation with the rules but also through a desire to seek approval and glory from the empire. Some scholars use the item “sinicisation,” which means the process by which non-Chinese societies or groups are acculturated or assimilated into Chinese culture, to interpret this phenomenon. In my view, the conception of Chinese culture still needs to be debated within the context; for example, Buddhism did not arise natively in China either, but it was often taken as part of Chinese culture. Thus, the item “localisation” is more suitable to explain the roof upon the dome. As one scholar suggests, the adaptation of Chinese customs by the Muslims in China is a process that adapts to the specific context of China and embeds the Muslim community in “local knowledge,” which could be termed “localisation” (Zhou, 2016, p. 10). Localisation is a general phenomenon whereby immigrants integrate into their new environment as a minority population. It did not happen all of a sudden, but was a process, as can be seen in the changes of mosques. For instance, in the mosques built before the Ming dynasty, their dome already has the same decorations as the pagodas. Furthermore, the localisation revealed in the mosque architecture reflects the Muslim community as a subjective reflection of its self-image.

However, several centuries after the Yuan dynasty, the “localised” mosques still convey the cultural memory of the immigrant Muslims from Central and West Asia. As Jan Assmann said, cultural memory has its fixed point; its horizon does not change with time. These fixed points are fateful events of the past, whose memory is maintained through cultural information (texts, rites, monuments) and institutional

communication (recitation, practice, observance) (Assmann & Czaplicka, 1995, p. 129). After the *Semuren* (Muslim immigrants) evolved into the Chinese-speaking Hui Muslim community, after generations, the local Chinese dialects became filled with Persian and Arabic words. Something similar occurred in mosques. Although most of the domed chambers were built during the Yuan or the early Ming period, the dome was substituted by another referential form in the later period: using a caisson ceiling in front of the mihrab. The caisson, which has the same function and aesthetics as the dome, highlights the mihrab hall and the direction of Mecca. The brick was replaced by wood, but the sacredness it conveys unchanged.

6 Conclusion

It is generally accepted that numerous Muslims migrated to China from Central and West Asia during the Yuan dynasty. This article studies material instead of textual sources – the dome in mosques – to understand the change of the Muslim community in medieval China. The technique for building domed chambers, probably brought by Muslims from Central and West Asia to China during the Yuan dynasty, was used in the Hangzhou Phoenix Mosque. And other later mosques with domed chamber suggest that the application of the dome continued. However, in the Ming dynasty, when the immigrant Muslims became Chinese-speaking Muslims under the supervision of the Ming court, the use of the Chinese-style roofs to cover the domed chamber during refurbishment became routine. And the architectural plan of mosques also embraced the Chinese architectural system whereby the mihrab hall occupies a smaller space horizontally but stays high vertically.

It is not surprising that the construction of the mosque adapts to local materials, technology, and the culture of the Muslim community. Although the evolution of Muslims in China from immigrants to local followers is a long process in which governmental policy plays an important role, this adaptation to the local visuality occurred from the outset. The dome, as an architectural element, conveys the cultural memory of the Muslim immigrants, even after the appearance transformed, and left behind a certain form reflecting the continuing memory of the Muslim community in China.

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Appendix: Major Dynasties in Chinese History

- The Tang dynasty (618–907 CE)
- The Song dynasty (960–1279 CE)
- The Yuan dynasty (1271–1368 CE)
- The Ming dynasty (1368–1644 CE)
- The Qing dynasty (1636–1912 CE)