



## AN ANCIENT MOSQUE IN NINGBO, CHINA "HISTORICAL AND ARCHITECTURAL STUDY"

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### ABSTRACT

With the rise of Tang dynasty (618–907), Ningbo was an important commercial city on the Chinese eastern coast. Arab merchants had an important role in trade relations between China and the West. Ningbo mosque was initially built in 1003 during Northern Song period by Muslims traders who had migrated from Arab lands to settle in China. Through ongoing research of representative Muslim architecture, such as Chinese Mosques, this paper seeks to shed light on the artistic features of this mosque. Many of the key characteristics of this distinctive ethnic heritage are based on commonly held religious beliefs and on the relationship between culture and religion. This paper aims to study the characteristics of Chinese mosques architecture, through studying one of the most important planning patterns of the traditional courtyards plan Known as Siheyuan, and it will also make a practical study on Ningbo Yuehu Mosque. The result of this study shows that the Ningbo Yuehu mosque is like Chinese mosques which follows essentially the norms of Chinese planning, layout design, and wooden structures.

### KEYWORDS:

Ningbo, Mosque, Plan, Courtyard, Inscriptions

### INTRODUCTION

#### WHY THE SELECTED NINGBO MOSQUE?

Although many Chinese cities contain more than a mosque; however, the Ningbo mosque is the only surviving example of Chinese Islamic architecture in the city of Ningbo, as well as on the eastern coast of China. In addition to; this mosque has no mention in ancient sources or in the records of travelers. The aim of this Paper is to convey to the reader the essence of the Chinese Hui's mosque; analysis and comparison are postponed to the end of this study. Nevertheless, commentary will be provided for clarification at certain points.

#### ISLAM IN NINGBO

Ningbo city (宁波市) is a sub-provincial city in northeast Zhejiang province (浙江省) in the China [1]; it is one of China's oldest cities, it was once named Míngzhōu (明州) [2] [figure 1]. During Han era, the Chinese are well acquainted with the Arabs [3] before the fifth century A.D [4][5][6][7]. Chinese historical sources indicate that the Chinese had not heard about Islam only in 639 A.D., according to the old Book of Tang Jiu Tangshu (旧唐书) the Emperor Taizong (太宗)

(626-649) received an embassy from the last Sassanid rulers Yazdegerd III (631-651) asking for help against the invading Arab armies of his country, however, the emperor avoid to help him to ward off problems that may result from it [8][9].

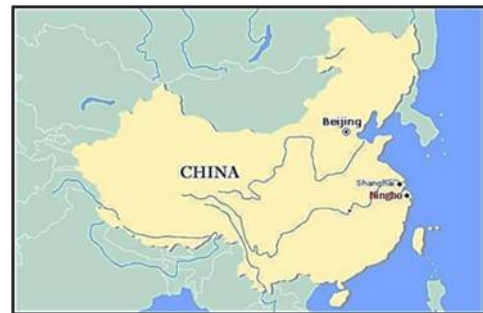


Figure 1. Map of Ningbo's location [10]

It is widely believed by Chinese scholars that Islam arrived China during Tang era in 651 [11][12][13], during summer of the second year of the era of Emperor Gaozong (高宗); in that year was the first Arab embassy to the court of the Tang Dynasty, This is the first direct contact between the Chinese and the Arabs [14]. According to the volume 221 (西域) of New Book of Tang (新唐书), during the second year of the emperor Gaozong - Yong Hui era (永徽), the court

received an official Arab envoy, and the Arab gives greeting from the king of the Arabs to the emperor [15]. The account does not mention the motive for Caliph Othman to send an embassy to distant China, which apart from commercial businesses had no direct interest with Arabs [16]. Since this embassy there became frequent contacts between the Arabs and China [17]. However; the ancient Chinese records refer to Arab embassies [18], which it was recorded and documented the arrival of Arab embassies and missions of the thirty-seven times, as the Chinese sources recorded the arrival of twenty Muslims Persian embassies [19].

The Umayyad period (661-750) witnessed the great expansion of Islam to the east. In 713, the Umayyad campaign under the command of Qutayba b. Muslim al-Bahili (d 715) Invaded Khurasan (Central Asia) and closed to western Chinese borders. In 751 the Chinese decided to fight the Arabs and assist the Turkish Uighurs, the Chinese army under the command of Gao Xian Zhi was defeated in Talas by Ziyad b. Saleh who sent by Abu Muslim al-Khurasani (d 755), which led to the spread of Islam in those areas.

Beside political relations between Chinese and Muslims; there was an important way for connections; trade. The silk route began around Chang'an (today: Xi'an) and ended on the eastern shores of the Mediterranean. Two routes were accessible in and out of China; the northern route and the southern route [16]. Muslims Arabs and Persian brought Islam to China who settled and gradually who married Hans, converting them to Islam, while assimilating Chinese culture [20]. Traders flocked to China; they carried their religion and their culture to it [21]. Trade between Islamic states and China has increased significantly since the seventh century. In fact, Muslim traders were the main reason for the arrival of Islam to China [22]. The arrival of the merchants to China; the major cities have embassies and missions and commercial convoys [23], that trade is back on the wealth of Muslim merchants, was enough to justify the permanent presence in the Chinese coastal cities [24].

Muslim traders were able to establish in Ningbo more than a thousand years ago [25]. They lived in Ningbo during the Song dynasty, as the ocean-going trade passages took precedence over land trade during this time [26], they did not intermingle with native Chinese, practicing their own customs and religion and they inhabited ghettos [27]; Ibn Battuta was confirmed this situation when he visited China during the 14th century AD, he said about Muslims settlements "In every big city in China, there is a city for Muslims specialize in the Residence" [28].

Since the Tang dynasty (618-907) Ningbo was an important commercial port. Arab merchants had an important role in trade relations between China and the West. It is the key starting point on the east coast of China to the Maritime Silk Road and also contributed significantly to land trade during this time [26]. The economic and commercial importance of the city increased during the Song Dynasty (960-1279), and

was a well-known centre of ocean-going merchandise with the foreign world [2]. Muslims traders lived in Ningbo during the Song dynasty [26], benefited from the religious tolerance policy pursued by the Chinese emperors [17], as long as they did not try to proselytise Islam to Chinese [27], and not against feudal politics of the Chinese rulers [17].

However; the Commercial and economic importance of the city increased by the Song dynasty; particularly since the year 990 AD during the era of Emperor Chun Hua (淳化) [29]. Ningbo's Commercial importance gradually increased, it flowed into large communities of Traders Muslims [17], Which prompted the city government in the year of 992 AD during the third year of the era of Emperor Chun Hua (淳化) to establish the Eastern Office of Naval Affairs known as Dongbosi (东船司) [30]. Some excavations that had been in the city have proved that government trade office was occupied three different locations in the city, one of them was located next to the city's first mosque Zhenghai Mosque (镇海清真寺).

With China unified under Yuan dynasty, traders were free to traverse China freely. The Mongols aware of the impact of trade were keen to improve Chinese infrastructure to ensure the flow of goods. One major project was the repair and inauguration of Chinese Grand Canal that linked Khanbalik (Beijing) in the north with Hangzhou on the coast in the south-east [16]. Ningbo's location on the central coast and at the end of the Canal was the motive of the mercantile development of the east coast of China. The Grand Canal was an important station helped the spread of Islam in the cities of China's east coast; Muslim merchants travel to the north along the canal, which made the banks of the channel regions become key areas for the spread of Islam eastern China.

Ningbo City has been a popular destination for traders Muslims [5]; Ningbo City has received many Muslim families from Shandong [31]. However; since the mid-Ming period, Chinese Muslims are exposed to many of the laws enacted by the government in many periods; which was prevented from traveling outside China [32]; as a consequence the Chinese Muslims are not able to trade with Islamic countries and have become isolated from the Islamic world in neighboring Central Asian; Which gradually led to internal migration in China and to stay away from coastal cities and the replacement of trade in agriculture [33]. That was a key reason for the decrease in the number of Muslims in the city of Ningbo to the extent that the number of Muslim families by the year 1844, did not exceed more than twenty or thirty families [34]. By 1850 Ningbo as a port of trade was declined as a result of rising Shanghai trade [35].

#### NINGBO MOSQUE

The Ningbo Mosque (simplified Chinese: 月湖清真寺; pinyin: Yuèhú Qīngzhēnsì) is located on 18 Houying Lane Street of Ningbo, Zhejiang province,

China. (浙江省宁波市后营巷18号), near the Ningbo Lake (月湖) [figure 2-3]; so usually it is commonly known as Moon Lake Mosque (月湖清真寺-Yuèhú Qīngzhēnsī). During Qing dynasty The mosque was known as Huíhui Táng (回回堂), which was mentioned in the Chinese Repository, volume 13, from January to December 1844 [34], and in Ningbo Map of Qing period known as Ningjun diyutu (寧郡地輿圖) [36].



Figure 2. Location of the Ningbo mosque [37]



Figure 3. Location of the Ningbo mosque [37]

DATING OF THE MOSQUE

It is widely believed by Chinese scholars [12][29] [25] that the mosque was initially built in 1003 during the sixth year of the era of northern Song Emperor Xiánpíng (咸平) (998-1003) by Muslims traders who had migrated from Arab lands to settle in China. It is worth mentioning that Muslim traders settled in the city of Ningbo, during the era of Emperor Xian Ping (咸平) to the family of Northern Song, Muslims settled on the bank of Moon Lake, and they built a mosque in the center of population gathering which a residential circuit was reached a diameter of about one kilometer. This mosque like many mosques built in Chinese cities by Muslims traders such as Beijing Madian mosque which was built by traders of horses and sheep [38]; however the mosque was renovated and partially rebuilt on several occasions: in 1699, 1832 and 1869. In contrast to a number of other mosques, this mosque has no mention in ancient sources or in the records of travellers. The only mention of the mosque was in Qing period in accounts of an Englishman who stayed in the city in 1844 can be found in The Chinese repository, Volume 13, published in 1844 [34].

APPROACHING THE MOSQUE

The mosque is planned according to an east-west axis which has respected street alignment and

Qibla orientation simultaneously, occupies an area of over 2.1 acres, including the old mosque, the northern and southern squares.

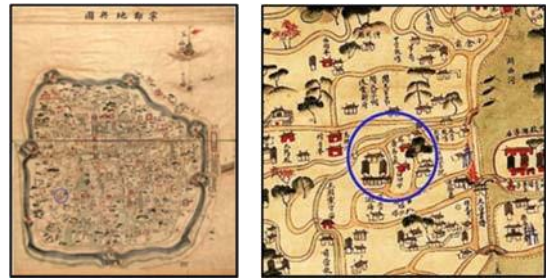


Figure 4. Map of Ningbo between 1796 and 1820 [36]

The Mosque is divided into three courtyards [figure 5], occupies a rectangular area (50 meters long and 21 meters wide with a well-arranged layout); thus, a total area of 1050 square meters. The mosque consists of a group of the buildings forming three introverted courtyards enclosed by the halls and external walls. Eastern facade is the main facade of the mosque, which with a length of 34,5m; it is the formation of the façade in which the Moon pavilion protrudes.

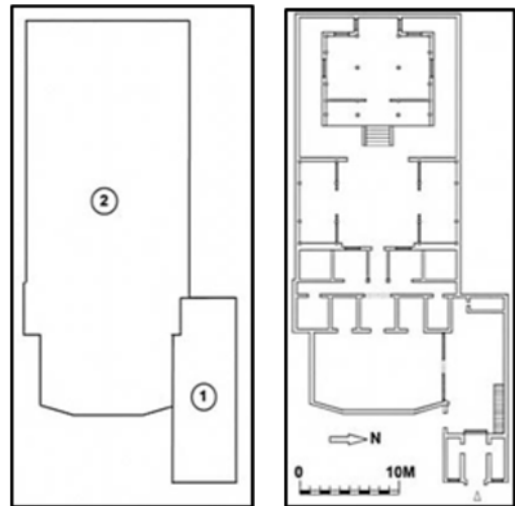


Figure 5. Plan of Ningbo Mosque

THE ENTRANCE

The entrance known as Sìmén (寺门), it mediates the eastern facade of the Moon pavilion, arched of a semi-circular arch, above the entrance to the stone plate carved in traditional Chinese: 寺真清 "Mosque" [figure 6-7].

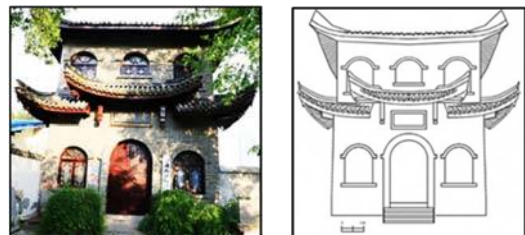


Figure 6, 7. Façade and Entrance of the Ningbo mosque

## MOON PAVILION

Approaching the mosque from the east, the eye would never miss the dominant moon pavilion that rises above the main entrance. The moon pavilion in Chinese mosques known as Wàngyuè Lóu (望月楼), it is a rectangular structure (6,7m X 5m) that is wellheads up on the ground level. The western side of the moon pavilion is pierced with an arched opening. The entrance leads to a rectangular vestibule (5m X 2,2m) which allows access to the mosque's western forecourt. The upper level we can reach to it by a stairway existing on the northeastern side of the western forecourt, its dimensions similar to ground level, the western façade pierced with three arches of a semi-circular profile (widening 1m, height 1,5m). The Moon Pavilion decorated by traditional Chinese elements: it has strongly eave, In addition to Hanging Flowered columns; Chūihuāzhù (垂花柱), the roof tiles are unglazed and reflect their natural earthen black colour. The building has a typical Chinese hipped roof.

## THE FORECOURT

The mosque's forecourt is defined by the northern wall, the wall gate of the eastern courtyard and two halls (the west hall is entrance hall, the east one is storage). The forecourt acts as a separating zone between the elements of the mosque and the entrance [figure 8]. In the other words, each structure is of major importance in its own courtyard. The southern wall of the forecourt designed in the form of balustrade; consists of 22 column were carved into the cubic form (13 cm thick). The wall pierced with a door (wide 1,3m height 2,25m) Leads to the eastern courtyard [figure 9].



Figure 8. the forecourt of the mosque



Figure 9. The Northern wall of Eastern courtyard



Figure 10. General view of the eastern courtyard

## THE EASTERN COURTYARD

The eastern courtyard occupies a rectangular area (13 X 7,8m) [figure 10], it's southern and eastern defined by a wall (height 4m); no doors are opened on either wall, the roofs of the two walls decorated with Chinese decorative features such as ceramic tile roofs which known as (liúlíwǎ -琉璃瓦) [39]. The western wall acts as entrance wall of the western courtyard (courtyard of prayer hall). This wall pierced with three entrances; the central (wide 1,55m, height 2,55m) leads to a rectangular vestibule (3,5m X 3,2m) [figure 11]. The western wall of the vestibule pierced with a door known as a moon gate (Yuèliàngmén -月亮门) [figure 12], it is a circular hole, with a diameter of 2,5m. Each of the two other entrances (wide 1,17m, height 2,5m) leads to a rectangular room [figure 13].



Figure 11. the Western wall of the eastern courtyard



Figure 12. the entrance lead to Moon gate



Figure 13.

#### THE WESTERN COURTYARD

The western courtyard (the main courtyard) occupies a rectangular area (9m X 8,3m), is defined by the eastern side of the prayer hall and two Lecture halls on the north and south; each of the two is a symmetrical structure, occupies a rectangular area (5,3m X 4m) with hipped roof, its façade is a wooden wall (height 5,5m), pierced with a door with a breadth of 2m [figure 14].



Figure 14. General view of the western courtyard

The prayer hall known as 禮拜大殿 (Lǐbài dàdiàn) (礼拜大殿), was built with the shape known as (凸字形) [40] [figure 15]; the first space is a rectangular wooden structure (an area of 112 square meters), consisting of three halls arranged together to appear as if they are one building with hipped roof, It is a distinctive architectural form of the mosques in China [17]. It is worth to be mentioned that the façades of ancient Chinese architecture are divided into three main parts: a platform, the walls or columns and the roofs [39]. The building is raised on a platform with a height of 1,2m, the side walls constructed with bricks go all the way up to the roof. Walls in the top beveled at the intersection with the horizontal elements of the roof structure. The roofs have grey tiles.

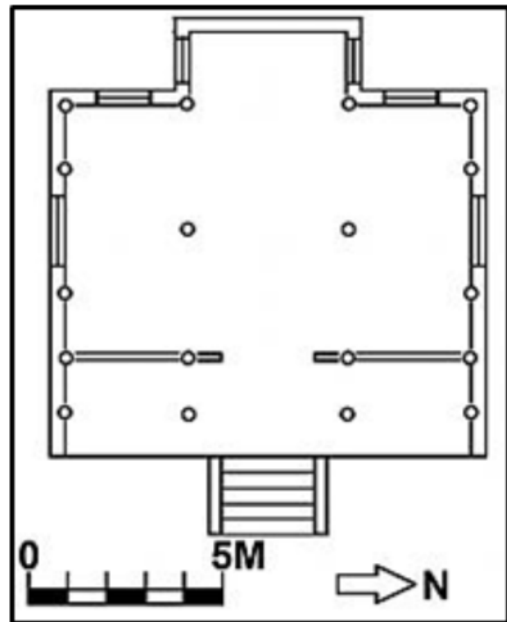


Figure 15. Plan of Prayer hall



Figure 16. The eastern façade of the prayer hall

The first space of the prayer hall known as Diànqián Juǎnpéng (simplified Chinese: 殿前卷棚) [19] acts as a foyer that precedes the main or important space [16] [figure 16]. The penthouse occupies an area (10,5 meters long and 2,6 meters wide), it contains two cylindrical columns that carry the load down to a stone foundation which decorated by Lotus designs. The

second hall is the main space, known as Libàidiàn (simplified Chinese: 礼拜殿) [figure 17], occupies an area (10 meters long and 6,2 meters wide) like the first hall contains two cylindrical columns. The northern and southern wall of this space pierced with rectangular windows.



Figure 17. Interior of Prayer hall

The Mihrab area is the third hall, known as Hòuyáodiàn (simplified Chinese: 后窑殿) [figure 18], occupies an area (4 meters long and 2 meters wide). Mihrab mediates the western wall of this space; it is a flat niche Surrounded by a pointed band of the Arabic inscription, it contains Quran 1: 255, Surat Al-Baqara. The verses remind the believers that there is no god but Allah alone who does not hide from him anything.



Figure 18. The Mihrab hall and Mihrab's inscriptions

## AN ANALYTICAL STUDY OF ARCHITECTURAL AND DECORATIVE ELEMENTS

### FINANCIAL RESOURCES AND MOSQUE'S ARCHITECTURE

Financial resources of the Chinese mosques have been weak since the era of the Tang Dynasty until the era of the Ming Dynasty; mosques in China was not built under the auspices of the state or the ruling class like most of the mosques in the Muslim world; So there were many sources of funding, such as individual donations and social participation. Various sources of financing for Chinese mosques have had a great impact on the continuity of the performance of its duties and functions across different eras including meet the demands of the Muslim community and achieve its objectives. Although the Waqf (Mortmain) on Chinese

mosques did not spread only since the era of the Ming Dynasty; however, the historical records indicate that the waqf in China's mosques during Yuan Dynasty [28]. Construction and repair of mosques, it depends mainly on donations and grants from the Muslims themselves, In addition, it raced of Muslims to build mosques in order to draw closer to God, as is the construction of a reflection of economic power, which it has been associated with numbers of Muslims and the extent of their contribution to the development of mosques and decorated architecture. In the case of Ningbo mosque; Gradual reduction to the numbers of Muslims, especially since the time of the Ming Dynasty led to a lack of care of the mosque and the neglect of the introduction of new extensions to the contrary to what happened in most of the other Chinese mosques built in the heart of a large Muslim communities, such as Beijing, Xi'an Ningxia etc. So the mosque was not a huge area and slovenliness of decoration or adds decorative and architectural elements which spread to most other mosques.

### CONSTRUCTION MATERIALS

The construction of the mosque has relied on many of materials such as stone, brick and timber. Bricks of the Chinese architecture dating back to ancient times. Although the Chinese architecture has known many types of bricks, However, the grey brick is the basic structural material of traditional Chinese Architecture. Grey bricks contain many chemicals; the grey brick contains over 65% silicon dioxide ( $\text{SiO}_2$ ), aluminium oxide ( $\text{Al}_2\text{O}_3$ ) over than 14%, and 4-7% of Iron (III) oxide ( $\text{Fe}_2\text{O}_3$ ). In addition to, many of the materials: such as Quartz, Kaolinite, and Feldspar. It has been relying on the brick as a main material construction in the mosque, brick sizes in the mosque followed the optimal dimensions of the bricks in the Chinese Architecture (Height 24 cm, width 12 cm, height 6 cm).

### STONES

Many types of stone have been relying on such as granite, limestone blue; however, the blue limestone (青石) is the most kind widely used in the construction of the mosque. This type of stone takes a pale grey tinged with blue; it contains calcium oxide ( $\text{CaO}$ ) by 50%, Magnesium oxide ( $\text{MgO}$ ) by 2,5-3,5%, Water absorption rate of less than 75%,[41]. Stones used mainly as a construction material for the stairs and the platform that underpin the wooden structures, such as prayer hall, lecture halls, side halls, and the main entrance.

### MORTAR

The mortar is practical dough used to relate building blocks such as bricks, stones together, fill and seal the irregular gaps between them. Hydraulic mortar of ancient Chinese architecture was not available; Mortar of traditional Chinese architecture is

characterized by chemical composition; sticky rice soup was mixed with Calcium hydroxide (Ca(OH)<sub>2</sub>) to make a composite mortar that has more strength and water resistance than lime mortar, this mortar has spread, since the Song dynasty.

#### TIMBER

Chinese traditional architecture relied on several types of wood, such as fir timber, oak timber, pine timber, and Nanmo timber. However, the timber of white cedar (juniper) was more kind of timber that has been used in traditional Chinese architecture; due to characterised by great durability. The essential accomplishment of traditional Chinese wooden architecture is the load-bearing timber frame, a network of overlapping wooden trusses forming the skeleton of the building. This is considered China's main achievement to worldwide architectural techniques. Timber was main the material for the ceilings, columns, and eaves.

#### PLANNING CONCEPTS

The Ningbo mosque like other Chinese mosques; follows essentially the norms of Chinese planning and layout design and wooden structures; which characterised by four main elements: walled enclosure, North-South orientation, axially, and the courtyard [41].

#### THE ENCLOSURE

The enclosure not only creates a specific relationship with a particular area but is the principle of which a human society states its very relationship with nature. In addition, the Enclosure is the form of the thing; how it presents itself to the outside world [42]. Ibn Battuta's records during Yuan period of such walls are the best proof of the Functions they played in the Chinese City; the walls separated the Chinese and the foreigners on the hand and different racial group on the other [28].

The Wall is the most important Chinese planning features, which made for each building enclosed area isolated from their surroundings [43]; so the researchers call this type of planning: the complex (Wéisiérjū-围寺而居) [44], In fact, building walls around mosques appeared in some limited examples of mosques in the Muslim world, such as The Abu-Dulaf Mosque in Samarra (built in 859) and Mosque of Ibn Tulun in Cairo (built in 884).

#### ORIENTATION

Although the Southern-Northern orientation is a dominant feature of traditional Chinese architecture. Yet it was city planning that transcribes this and buildings and complexes had to concessions accordingly [16]. However, the layout of Chinese mosques defied traditional Chinese planning. Mosques were influenced by another inevitable factor: the orientation of Mecca; all Chinese mosques had to face

west, which imposed by Islamic faith. The western orientation of the building and annexation of the entrance in the southern wall raised the problem of non-axiality. In Ningbo mosque, the orientation is East-west.

#### AXIALITY

In general; The Chinese mosques have three main axes: a central axis that bisects the site and the two parallel axes of the building entrance; However, the layout of this mosque was different from most Chinese mosques; where the entrance isn't on the middle axes of the mosque plan. It seems that the available space for the construction was the main factors that influenced the planning. However, Plan of Ningbo mosque was not a special case; but it appeared in other Chinese mosques such as Gansu Tianshui mosque (甘肃天水寺) [figure 19].

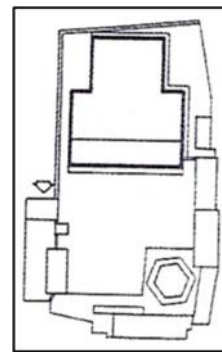


Figure 19. Plan of Gansu Tianshui mosque [19]

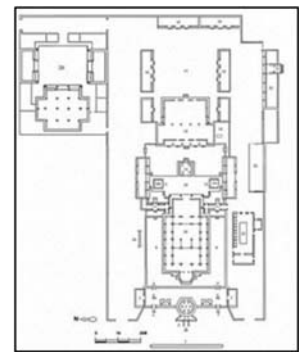


Figure 20. Plan of Beijing Niujie mosque [33]

#### THE COURTYARD

The courtyards is the most important features of traditional Chinese architectural planning [12], the major building followed each other along the median axis, preceded by vast courtyards closed on the east and west by buildings of secondary importance [16]. Some researchers go that this entire planning symbolises the Confucian culture [45][46].

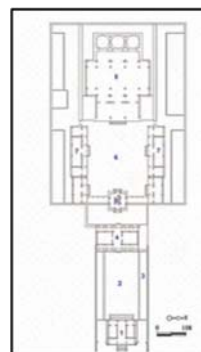


Figure 21. Plan of Beijing Dongsì mosque [33]

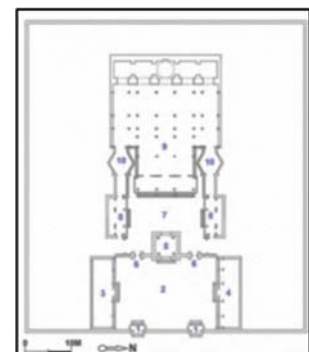


Figure 22. Plan of Beijing Tongzhou mosque [33]

The Chinese connotation of the courtyard can be exegesis as follows: “Formality, symmetry, straight lines, a hierarchy of importance, clarity, and conventionality”. The landscaped courtyard is an attribute that characterize the Chinese courtyard from its counterparts all over the Islamic world [16]. In addition to, the gradient in the spaces according to the function and importance of architectural units. The climate had a great impact on overall planning of the mosque; Where the long summer of the cities of southern China forced the architect to make the layout of the mosque with small courtyards, which it was a feature of most mosques in the southern provinces, which were relatively small courtyards, to reduce exposure to direct sunlight. On the other hand, the mosques of northern Chinese provinces such as Beijing, Xi'an [figure 27], has huge courtyards; Due to the urgency of sunlight due to the length of winter.

The multiplicity of courtyards is one of the most important features of the traditional Chinese planning [47]. This layout had been followed in many mosques in China such as: Beijing Niujie mosque (北京牛街礼拜寺) [figure 20], Beijing Dongsi mosque (北京东四清真寺) [figure 21], Beijing Tongzhou mosque (北京通州清真寺) [figure 22], Beijing Madian mosque (北京马甸清真寺) [figure 23], Guangzhou Huaisheng mosque (广州怀圣寺) [figure 24], Hebei Baizhen mosque (河北泊镇清真寺) [figure 25], and Hubei Wuchang mosque (湖北武昌清真寺) [figure 26], and Xi'an Great mosque (西安化觉巷寺) [figure 27].



Figure 23. Plan of Beijing Madian mosque [33]



Figure 24. Plan of Guangzhou Huaisheng mosque [19]

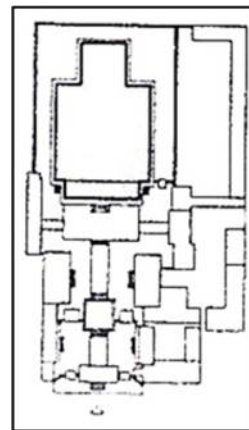


Figure 25. Plan of Hebei Baizhen mosque [19]



Figure 26. Plan of Hubei Wuchang mosque [19]

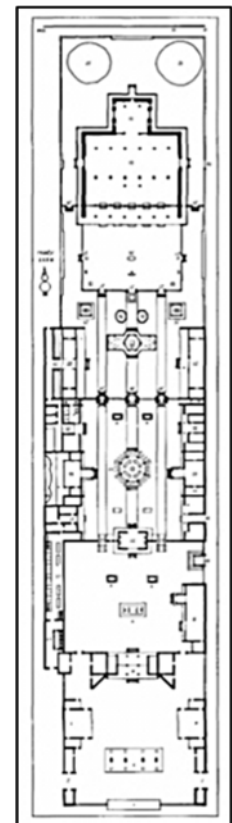


Figure 27. Plan of Xi'an Huajue mosque [14]

#### THE PRAYER HALL PLAN

The prayer hall is the most important architecture of the mosque [48] because it is the place where prayers are performed as well as various other roles [49]. Prayer halls in Chinese mosques differ from those in Buddhism and Taoism temples, which not include the statues and sculptures [17], in addition to the direction of the prayer hall in the mosques is East-west, while in the Buddhism and Taoism temples is North-south [50]. Prayer hall -Like all prayer halls in the Chinese mosques- features with an open corridor surrounded on all sides except the eastern side occupied by courtyard [33].

The first hall of prayer space is covered with hip-and-gable roof [51] which known as Xiēshāndǐng (歇山顶) [52]. The hip-and-gable roof comprises a hip roof that slopes down on all four sides and integrates a gable on two opposing sides. It is usually constructed with two large sloping roof sections in the front and back respectively, while the two sides each are usually constructed with a smaller roof section [53]. This ceiling is the best of traditional Chinese roofs; because of its architecture able to withstand the strong winds [54]. The second hall (Mihrab hall) is covered with a wooden sloping roof.

#### THE BUILDING

The traditional Chinese buildings according to



siheyuan layout could be divided into three parts: the platform, the walls and the columns, and the roof [39]. According to Chinese building practices, the building's structural system is a timber with a brick structure that renders the wall light partitions of no structural importance. Therefore, the upper part (roof) and the lower part (platform) were considered of paramount importance; especially since they represented, according to local Chinese culture and beliefs, heaven and earth respectively [16]. Hence, some researchers considers that traditional Chinese layout symbolises the Confucian culture, This culture stands for contradiction and counteracts the forces of nature such as the Sun and the Moon and the Earth and the sky, summer and winter. This culture have affected on the most ancient Chinese science and the arts, such as medicine and religion, architecture, etc., it should be noted that the Confucian culture symbolized by two symbols: the circle and the appraiser; that culture emerged in the courtyards and composition of spatial planning, the east and west orientation for the courtyards and architectural facades overlooking it probably symbolizes the Confucian culture, In addition, each two buildings facing each other representing a section of the symbol [45][46].

#### THE PLATFORM

The platform is an important and an Irreplaceable feature of the traditional Chinese architecture. Buildings are raised on a stone platform to protect the building's foundations and wooden structural elements from corrosion because of ground water [16].

#### THE BUILDING

The building comprises the plan, structural system, and the interior of the building. The Chinese plan is usually in the form of a rectangle or sometimes a square, divided by the wooden arcades and columns of the structural system into longitudinal and horizontal bays. The building's front is usually the longer side. The custom was to divide the façade into an odd number of bays, in order to avoid having a central row of columns that would screen the focus of the building [16].

The prayer hall's plan known as (凸字形) [40], it is a large area is preceded by a smaller one in the west side. Many prayer halls in Chinese mosques follow this shape such as Beijing Madian mosque (北京马甸清真寺), Beijing Haidian mosque (北京海淀清真寺) [figure 28], Beijing Shucun mosque (北京树村清真寺) [figure 29], and Xi'an Great mosque (西安化觉巷寺). Small space led to the omission of the architect to open side doors in the prayer hall, which it was available in the large mosques such as Beijing Niujie mosque (北京牛街礼拜寺), Xi'an Great mosque (西安化觉巷寺). The prayer hall is divided by the wooden columns of the structural system into horizontal and

longitudinal bays, the façade also divided by columns into bays [16].

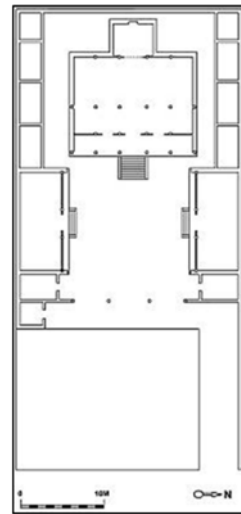


Figure 28. Plan of Beijing Haidian mosque [33]

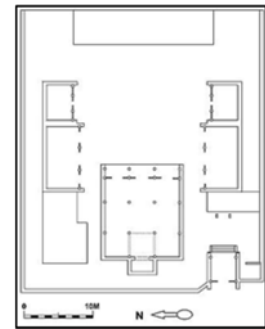


Figure 29. Plan of Beijing Shucun mosque [33]

#### THE ROOF

Flat roofs are unavailable while gabled roofs are almost widespread in traditional Chinese architecture. Ceilings are either built on roof cross-beams or rest directly on vertical beams. The custom of traditional Chinese architecture is to cover the building with only one roof [16]. However in this mosque the prayer hall is covered with more than one roofs, and merged by an architectural technique known as Gōuliándā (勾连塔); consequently, the Chinese Islamic architecture became differed from those of other religious buildings in China [19].

This technique allows architects to expand and increase the area of prayer hall without the demolition of the existing architecture, so relying on this method became a solution for Chinese Muslims, and this solution is less expensive than building new spaces for prayer [33]. The roofs of Chinese religious architecture were curved because Buddhists believed that a curved form could ward off ghosts and evil spirits, which were thought to the only move in straight lines; However the Chinese Islamic architecture relied on these types of roofs because, in addition to being in line with the local Chinese culture, it is the best architectural solutions used by Muslims architects to create a larger area of the vacuum inside the architectural units to be instead of the domes in the Islamic world.

#### DECORATIVE ELEMENTS

##### THE METHODS AND TECHNIQUES OF DECORATION

##### COLORS

Colors played an important and main role in the decoration of the Chinese traditional wooden architecture, so colors are considered one of the most

prominent characteristics, The main purpose for color is functional and practical necessity, to protect the columns and beams of weather factors and to avoid erosion and rot and isolated from parasites. The main chemical of the colours is mercury sulphide (HgS), which is characterised by non-usability of water-soluble and non-interaction with acids.

Colours played a main role in the decoration of mosque, the colours of the mosques have cultural connotations that reflect the Chinese traditions and local culture, Chinese Muslims Hui minority was obsessed by colour, and relied upon heavily in the decoration of mosques; So it has become in line with Chinese tradition symbiotically. The colours in the mosque have undergone traditional Chinese cultural norms; the red colour was the main colour in the decoration of the main hall (prayer hall) and columns. The red colour is considered a cultural impact of Han minority, which was favoured as a symbol of happiness. Green roofs symbolise bamboo shafts, which, in turn, represent youth and longevity.

#### TILES

Glazed tiles progressively came to serve decorative as well as structural fundamentally functional purposes. It is a slab of pottery covered with glazed or enamel layer, its chemical component consists of silicon dioxide SiO<sub>2</sub> and other mixed metal oxides, so as to minimise the pores and to prevent saturation of rain water. The roof crest of the halls and the walls is usually topped with a cornice of tiles. It played an important role in the decoration so that became one of the most important Chinese architecture features. The tiles, usually shaped to represent bamboo, create their own curved surface.

#### INSCRIPTIONS

Arabic Inscriptions are alien to the Chinese eye that could barely pass unnoticed, which observed by Protestant missionaries who visited the mosque in the 19th century [34]. The inscriptions used in the mosque can be categorised into two main types: short messages or couplets, and Quranic quotations. Short inscriptions could range from a single word to a line or a verse usually quoted from the Quran or the hadith. They were mainly placed in walls, ceiling, and gateways. Quranic inscriptions, apart from the main feature in the mihrab of the mosque.

The inscriptions content of the mihrab is directed to both the Muslim and Han Chinese; for the Muslims, the mihrab takes up the focus where in Chinese temples figural representations would be found. The latter revere statues of figures such as Buddha and Lao-Tzu. The Muslims unable to represent the prophet in a similar figural way resorted to the idea of the textual representation with the text borrowed from the Quran. The choice of the Quranic quotations is the Throne Verse *Āyat al-Kursī* the 255th verse of surah Al-Baqara, the verses were careful to remind the Chinese Muslims of the nothing and nobody is

comparable to God.

The style of the inscription is Sini (中国体). Chinese Muslim calligraphers not only inherits the art of Arabic calligraphy but have developed a new type of Arabic calligraphy and created a new style. Since the arrival of Islam to China, the blending and fusion of Arabic calligraphy with the traditional Chinese calligraphy were a phase lasted for a long period extended until the end of the Yuan Dynasty, Chinese Muslims calligraphers invented the art of calligraphy combines Arabic and Chinese types. There is no doubt that this style is distinguished from its counterpart of the Islamic world. The most important features of the sini style is a circular, undulating and flowing form.

#### CONCLUSION

Muslims traders lived in Ningbo during the Song dynasty, particularly since the year 990 AD during the era of Emperor Chun Hua (淳化) [29]. Ningbo's commercial importance gradually increased, it flowed into large communities of Muslims Traders; Hence there was an urgent need to build places of worship for them. The Yuehu mosque built in 1003 during the sixth year of the era of northern Song Emperor Xiánpíng (咸平) (998-1003) by Muslims traders who had migrated from Arab lands to settle in China.

The Ningbo Yuehu mosque is like Chinese mosques that follows essentially the norms of Chinese planning and layout design and wooden structures. The layout of mosques in China defied traditional Chinese planning. However mosques were influenced by another inescapable factor: the orientation of Mecca; all Chinese mosques had to face west, which imposed by Islamic faith; so the direction of Ningbo mosque is East-west.

It seems that the architecture of Beijing mosques had an impact on Ningbo Mosque; the layout of prayer hall was similar to other of Beijing mosques, such as Madian mosque, Haidian mosque, and Shucun mosque. On the other hand, the layout of the mosque was different from most Chinese mosques; where the entrance isn't located on the middle axes of the mosque plan. The mosque plan contains a multiplicity of courtyards; this layout had been followed in many mosques in China.

The roof of the mosque was not affected by those found in the mosques of the Islamic world but followed the models of traditional Chinese ceilings. However architecture of the mosque is considered in its entirety Chinese architecture; where it was relying on items and elements of traditional Chinese architecture, such as wooden structures, courtyards, and the gates of the moon, as well as the Chinese plan, the Chinese and ceilings, but it affected by the Arabic inscriptions that refer to the Islamic religion and belief.

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