

Evaluation analysis of space elements of the mosque's inner courtyard in Nanjing City from the Arab users' view

Wael Alhasan^{1,2} Cheng Yuning¹ Ranim Yehya Khoder²

(¹School of Architecture, Southeast University, Nanjing 210096, China)

(² School of Architecture Engineering, Tishreen University, Latakia, Syria)

Abstract: In order to promote the development of the relationship between China and the Islamic world and meet the cultural needs of Muslims when using mosques in China, this study focuses on the design of mosques in a multi-cultural context. Mosques are an integral part of the China and the Muslims' society due to their unique style and features. The courtyard is a common element in the design of mosques, and its components vary depending on regional traditions of the time and place where it was built. With the growth of interest in the term of human needs and participation between designer and users in evaluating the design quality, this study summarizes the modern and traditional Chinese mosque courtyard design for Arabian Muslim users in order to evaluate whether their physical and spiritual needs are being appropriately met or not. A questionnaire was distributed to Arab Muslims living in the city of Nanjing to discuss the quality evaluation of traditional and modern mosques' courtyard design. Through the analysis of seven natural and physical key issue elements in the design of the courtyard, the functional characteristics and configurations are analyzed. The results can be used to improve the design of the new mosque in future by using the vocabulary that accomplishes the architectural fusion of both Chinese and Islamic culture, as well as aesthetic and functional aspects.

Key words: participation; culture; evaluate; quality; Chinese mosque; Islamic

DOI: 10.3969/j.issn.1003-7985.2019.01.018

Human culture is a process of continuous dynamic change due to its social development or cultural connections. Religious culture, which is part of the human culture, also has the same changing characteristics through its expansion and development. As a religion, ideology, and cultural system, Islam interacts and integrates with the local traditional cultures in many parts of the world, and it has varying levels of influence on social development, political structure, economic patterns, cul-

tural fashion, ethics, morals and lifestyles of many countries and ethnic groups. The historical development of Islam includes its premise of adhering to core doctrines, and standard values were introduced to China in the mid-seventh century. Islam absorbed all Chinese cultural elements and expressions and then changed them reasonably to harmonize with the local Chinese social and cultural environment^[1]. As a foreign religion, the accelerated process of Islamic nationalization in China is not only rooted in it profoundly but also mingled with traditional Chinese culture. Islam represented the distinct characteristics of traditional Chinese culture either in the form or with deep-seated doctrine and ethics^[2]. Briefly, Islam was realized by Chinese culture and became part of it while it has also constantly adapted and innovated itself with social Chinese structure.

The harmony concept of Islam is not only theoretical guidance and a code of conduct for the vast number of Muslims in China but also is an essential ideological resource for other Muslim areas towards constructing a harmonious society^[1]. The fusion of Islamic and Chinese cultures was not only in cultural and social terms but also in all other life aspects. For example, Islam has been impacted more or less in the aspect of traditional Chinese mosque architecture except for a few ancient mosques in coastal areas, where most of the mosques were largely influenced by the traditional Chinese temple architecture that consists of a compound with buildings around a square courtyard with a screen wall facing the gate. As for the mosque courtyard components, they were also developed in an attempt to assimilate Islamic culture into the traditional Chinese style forms and techniques as a result of a response to cultural needs^[3].

1 Mosques in China

Mosques exist in every province and autonomous regions of China. In 2010, Muslims were served by nearly 40 000 mosques. In China as elsewhere, the mosque is the center of communal religious life, Muslim education and socialization. Chinese mosques, like other mosques, place different emphasis on features related to culture, climate, customs and traditions. Considering the vast contrast with the desert climate in the Middle East, Chinese mosques appear to have a more suitable design form

Received 2018-07-02, **Revised** 2018-12-01.

Biographies: Wael Alhasan(1983—), male, Ph. D. candidate; Cheng Yuning (corresponding author), male, doctor, professor, cyn999@126.com.

Citation: Wael Alhasan, Cheng Yuning, Ranim Yehya Khoder. Evaluation analysis of space elements of the mosque's inner courtyard in Nanjing City from the Arab users' view[J]. Journal of Southeast University (English Edition), 2019, 35(1): 125 – 134. DOI: 10.3969/j.issn.1003-7985.2019.01.018.

for the climate of China. The connection between Chinese culture and nature greatly influenced their mosque designs^[4].

1.1 Chinese mosque architecture

Depending on the time of creation and region distribution, the mosque buildings in China can be divided into three styles:

- 1) Arabian-type mosque building during the Tang, Song, and Yuan dynasties.
- 2) The mosque buildings of Chinese style (inland mosques) in the Ming and Qing dynasties were increasingly influenced by classical Chinese architecture, resulting in a significant change in architectural content.
- 3) The mosque buildings of Western Asia and Central Asia style in the Xinjiang region maintains more Arabian Islamic characteristics combining open halls with closed halls^[1].

1.2 Chinese mosque courtyard

Whenever and wherever Muslims first entered China, mosque architecture was already a coherent system that had been governed by principles. The most important one is that the buildings were formed around enclosed courtyards. This courtyard is an enclosed outdoor space, ordinarily open to the elements at the top, and it does not have a definitive plan. The primary design of a courtyard is typically rectangular or square, and the form changes to accommodate ecological and cultural aspects. The scale and size of Chinese mosque courtyards range from very small to vast depending on their use. However, the function and elements of each courtyard vary with region or style^[5], which is similar to any other patterns of Chinese gardens, and they appear more natural than human-made, harmonious with nature, spontaneous rather than rigidly geometrical and predictable; complex rather than simple, as though being embodied with natural principles.

2 Space Elements

Space elements in landscape design refers to the concepts of space nature as an element of volume and design. The concept of space as the major of landscape design developed from discussions related to modernism, contemporary art, Asian art and architecture design. Space can be defined as follows^[6]:

- An enclosed area of land used by people for human purposes.
- An environment for the concept of landscape architecture.
- A site for outdoor actions.
- An enclosure.
- The place that contains building blocks.
- It can also be defined as a place formed by the surrounding solid elements of blocks^[7].

2.1 Space forming

Space is determined by three basic dimensions, which constitute its main components^[6]:

- Ground plane To realize this, there must be a noticeable change in its surface or color compared to other planes on which it lies.
- Vertical plane It may contain flora with hard or smooth texture and connects from the base to an overhead part.
- Overhead part It is formed by the sky, ceiling or the trees and their canopy.

2.2 Space quality

2.2.1 Spatial quality

A space may be static or direct, focus interest or vision inward. It may open out or may direct attention to its frame and beyond, it also may fall away or seem to expand. It may be flowing and undulating, suggesting directional movement. It may dominate an object or be dominated by an object. It may have orientation inward, outward, upward, downward, radial, or tangential. It may be designed so as to stimulate a prescribed emotional reaction or to produce a predetermined sequence of such responses^[8].

2.2.2 Organization

Spaces can be designed in many techniques:

- A central form where the number of secondary spaces are grouped around dominant space.
- A linear sequence of repetitive spaces.
- Space spread in a radial manner.
- Different or similar spaces share a common visual trait or relationship gathered by proximity or are far apart from each other.
- Spaces arrangement within 2D or 3D in the field of a organization.

2.2.3 Sense quality

Spaces are usually given meaning as a result of their regular function in society on some scale so that the term of place sense can be defined as a feeling or perception held by people (not by the place itself)^[9-10]. It is often used relative to those features that make a place special or unique, as well as to those that evoke a sense of faithful human attachment and pertinence. In other words, to have a powerful “sense of place”, there should be a stable identity that is greatly felt by people and visitors^[11-12].

2.2.4 Spiritual quality (soul)

Many indigenous and ethnic cultures around the world are extremely concerned with spirits of the place in their landscape. Spirits of the place are obviously documented by some of the world's main religions^[13]. Spiritual quality refers to the unique, distinct and valued aspects of a place. It is thus as much in the unrealizable period of cultures (stories, painting, memoirs, philosophies, olden

times, etc.) as it is in the noticeable physical aspects of a place (monuments, boundaries, rivers, woods, architectural style, rural crafts styles, pathways, views, and so on) or in its personal aspects (the existence of families and kindred spirits).

2.3 Space elements of Chinese mosque courtyard

We can classify these elements into two groups:

1) Natural elements: Flora elements such as trees, shrubs, and flowers are not common in most mosques because of religious beliefs that require stillness inside the mosque. The design of the Chinese mosque courtyard came to be entirely different and flora elements are extensively utilized in its space, proving their effectiveness as a climatic and social element that characterizes the building environment. As for water elements, they were common in Islamic countries’ mosques around the world but were rarely present in most Chinese mosques.

2) Physical elements: Chinese mosques contained roofed passages like other mosque courtyards around the Islamic world, regardless of the form and style. In addition, the influence of Chinese garden elements on the design of Chinese mosque courtyards has been greatly enhanced by the emergence of free passages concept, in addition, furniture provided places to sit and plant beds. Other essential elements that characterize Chinese mosques are the use of multiple internal gates, which divide the mosque courtyard into several spaces that may be traced back to Chinese culture and the design of the palace gardens.

3 Methodology

A descriptive-analytical method was used to analyze the criteria of mosque courtyards and interpretive techniques

in Nanjing city, which were used to examine its spatial qualities. Data were collected using the documentary method, as well as the author’s field remarks related to Islamic Chinese relationships and the design of Chinese mosques with their courtyard components. The authors focused on the historical role, quantitative characteristics, as well as the essential variables of their related elements: Natural and physical elements (see Fig. 1). In addition, shedding light on the most critical points is related to the evaluating of the design quality and methods of user participation in the design process.

To determine the importance of the inner courtyard of Chinese mosques for Arabian Muslim users, a questionnaire was done in four groups (260 samples).

The first group contains primary data about the user’s nationality which determines the educational background and the type of mosques that he/she came into contact with in his/her home country. In addition, its relationship with the traditional and modern Chinese mosques during the period of residence in the city was explored.

The second group includes data on the importance of the internal courtyard in the design of mosques in the opinion of the user in terms of environmental, functional and aesthetic term (see Fig. 1).

In the third group, the components of the inner mosque courtyard were divided into seven main elements: elements of water, plants, paved corridors, free passages, furnishing, interior gates, in addition to the sub-event elements. Each of these elements was identified according to the opinion of the user in Chinese and his/her country’s mosques style, traditional and modern ones (see Fig. 1).

The fourth group identifies the most important factor that the users want to be involved in designing a new mosque in the city (see Fig. 1).

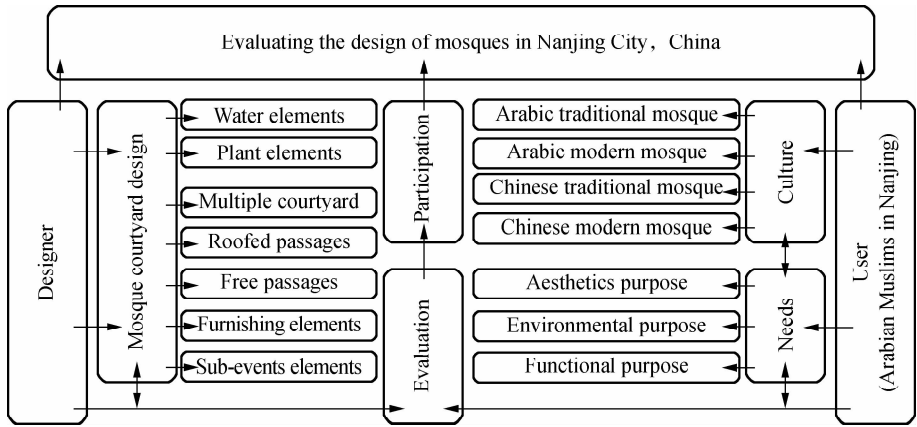


Fig. 1 An outline of the methodology used in the research

All information generated from the previous four groups has been used. The statistical analysis, SPSS program was conducted to find whether the design of traditional or new mosques in Nanjing was compatible with the functional or spiritual requirements of Arabian Muslim users. Also, to promote and integrate different aspects of

future mosque design in the city with high quality, the preservation of cultural heritage is taken into account.

4 Islam in Nanjing city

Muslims experienced a process of large-scale migration Nanjing in the early Ming Dynasty era, but it was actual-

ly short and was followed by a great acceleration soon after. As a result, widespread Islam reached the places that it had never been during the Yuan Dynasty. Islam was brought in by missionaries from Central Asia and Arabia into China, especially Nanjing, the first Ming capital which was called Jiankang. The Muslim population in Nanjing increased, and as a result, Nanjing became the place where Muslims lived concentrated on the southeast coast of China and it is regarded as a center of Islamic learning and culture^[2,14]. With time, this population became a permanently settled rather than transient community, including not only local Chinese Muslims but also foreign Muslims.

4.1 Non-Chinese Muslims

Recently, there is a notable emergence of floating foreign Muslims in Nanjing city, which appeared as a result of the Chinese great openness and development in all fields such as commercial, educational and economic growth. These Muslims vary greatly from different regions with different Islamic cultural backgrounds. This diversity constitutes the core intention and fundamental tone of Islamic cultural ecology in the city.

4.2 Mosque in Nanjing

The sub-provincial city of Nanjing is divided into 11

districts with 12 mosques scattered around the city. Mosques in Nanjing are noted in two inscriptions from the sixteenth century. Jingjue Mosque is the oldest mosque in Nanjing. It was built during the Ming Dynasty (1368—1398 A.D.)^[2]. Like other ancient mosques in the city, it has been restored and new buildings have been added to it during different periods (see Figs. 2(b), (c), (e), (f), (g), (h), (i) and (j)). As for modern mosques, there are four mosques, two of which have been completed (see Figs. 2(a) and (l)), one is still under construction (see Fig. 2(f)) and the final one is merely proposed (see Fig. 2(d)). Some of those are Chinese-style and others are modern. They were distributed throughout the city to accommodate the number of Muslims, whether Chinese or foreigners^[15].

Currently, with the new wave style of globalization and the increasing number of Muslims, international Muslims with the stakeholders of the mosques’ design in China need to dig down into their own individual modern, cultural traditions, values and inherent potential, in order to adapt to social development and work together (participate) to achieve development and social harmony. Briefly, this process will provide a positive and healthy spiritual power and psychological support for the modernization of various parties.

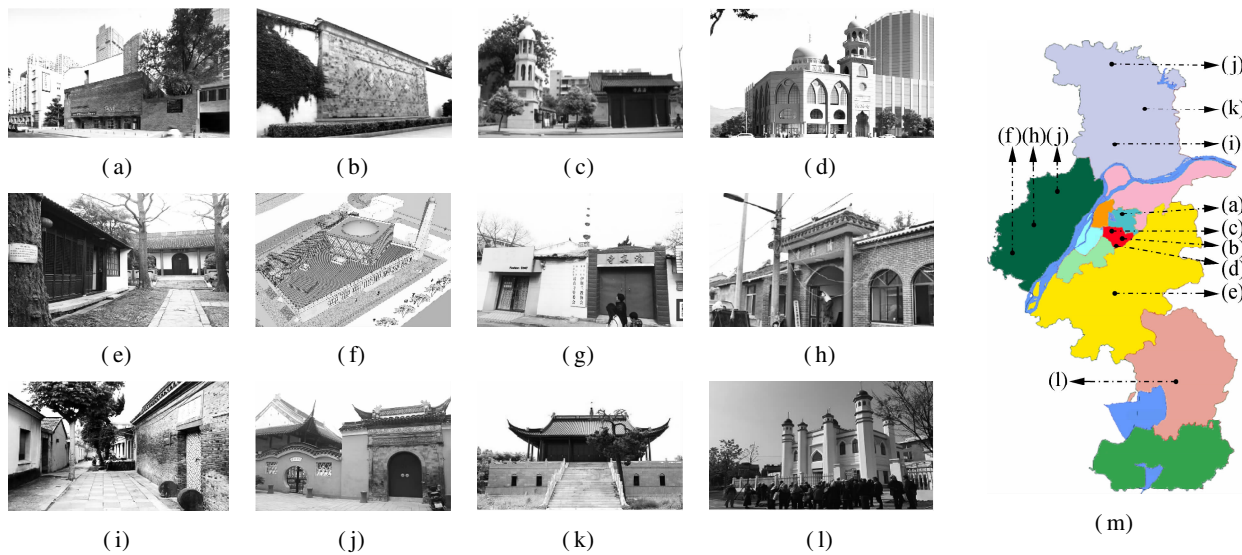


Fig. 2 Photo and place of Mosques located in the city of Nanjing. (a) Jizhaoying; (b) Jingjue; (c) Caoqiao; (d) Taipinglu; (e) Hushu; (f) Dongmen; (g) Yitiaoxiang; (h) Xingdian; (i) Zhuzhen ; (j) Changjiang; (k) Nanmen; (l) Lishui; (m) Location of Nanjing city mosques

5 Design Quality Evaluation

To achieve the quality in the design phase is the cornerstone for achieving quality in the building use phase. Practically, it is the main step on which all decisions in the following stages are built. Design quality is defined as to which extent the design can meet the requirements and limited measurable users’ needs. Also, intangible criteria must be taken into consideration during the design process.

User satisfaction is the most important element of the measurement to assess the quality of the building^[16-17].

5.1 User participation in the design process

This term first appeared at the International Conference Design Participation Tactics (1971) sponsored by the Design Research Society. It was held to discuss the importance of user participation in decision making of buildings design^[18]. Due to its great significance and its role in de-

veloping the design process and upgrading it to suit the needs of users, this concept has been developed and expanded upon by many researchers and studies.

5.2 Levels of participation

Many studies classified the types of participation and determined their level through several standards and prin-

ciples. One of these studies divided levels of participation depending on how and when the user was involved in providing information about his/her own needs. The other study divided it into five levels depending on the control degree of the architect and user taking into account the stability of some design and legal considerations (see Fig.3 and Fig.4) as follows^[19]:

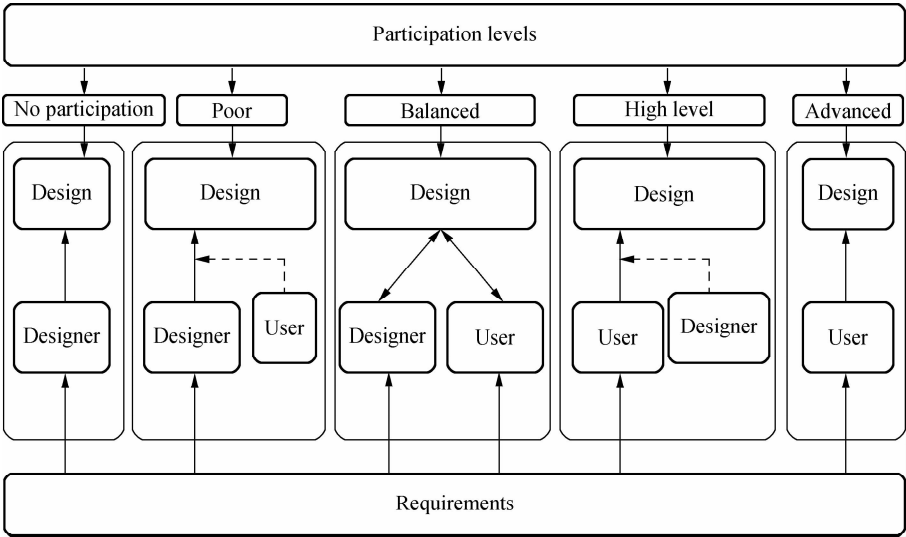


Fig. 3 Levels of participation according to the architect and user degree of control

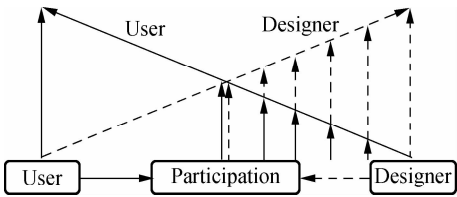


Fig. 4 Levels of participation according to the time and place of users providing information

- 1) No participation: In this case, the architect is mainly in control of the design decision.
- 2) Poor or not important participation: In this case, the user can express his/her opinion but does not have the ability to modify according to his/her desire and the main control of the design process is by the architect.
- 3) Balanced participation: In this case, the opinions of the architect and the user are equal.
- 4) High level of participation: The user is the main controller in the design process. In this case, the role of the architect is limited to guidance and advice.
- 5) Advanced level of participation: The role of the engineer in the design process disappears entirely and the user is the main controller of the project.

5.1.2 Factors influencing the process of participation

This relationship between users and the designer are affected by several factors^[20-21]:

- 1) User’s cultural level shows the inability of some users to explain his/her view of the project as a result of his/her lack of experience in detail related to the design

process.

- 2) User is affected by a particular architectural style due to his/her social environment and lack of knowledge of the advantages and characteristics of new design patterns.

- 3) In some projects, an insufficient budget is prompting the designer to ignore the user’s opinion as a result of the lack of adequate compensation to make adjustments.

- 4) Time constraints hinder the possibility of frequent sessions between the user and the designer.

- 5) Designer skills play an important role in the ability of the designer to find a simple and appropriate way to understand the requirements of users and turn them into the instructions that can be used to develop the design.

6 Results and Discussion

No matter whether in Chinese or Arabic civilization, the inner courtyard is one of the most ancient elements in the design of mosques. Due to the existence of cultural differences and civilization in the city of Nanjing between foreign and Chinese Muslims, a new approach to the development process was implemented to increase the quality of mosque courtyard design in the city. At the same time, the most important requirement of the mosques’ natural and physical elements for Arabian Muslims users is analyzing the factors of cultural background.

By analyzing the architectural drawings of the mosques in the city according to the date of construction, we noted that the use of the courtyard in the

mosque design decreases with time in terms of space and presence. The courtyard in the old mosques contained all aesthetic, environmental, physical and natural elements (see Figs. 5(b), (c), (d), (f), (g), (h), (i) and (j)). The existence of courtyard in the modern mosques was just as a symbolic presence, and the courtyard

comes as a small opening area in the ceiling for lighting (see Fig. 5(a) and (e)) or without any inner courtyard. This style is regarded as the central style where the green area comes around it (see Fig. 5(k)) and many fundamental components such as flora and corridor become less used or disappear.

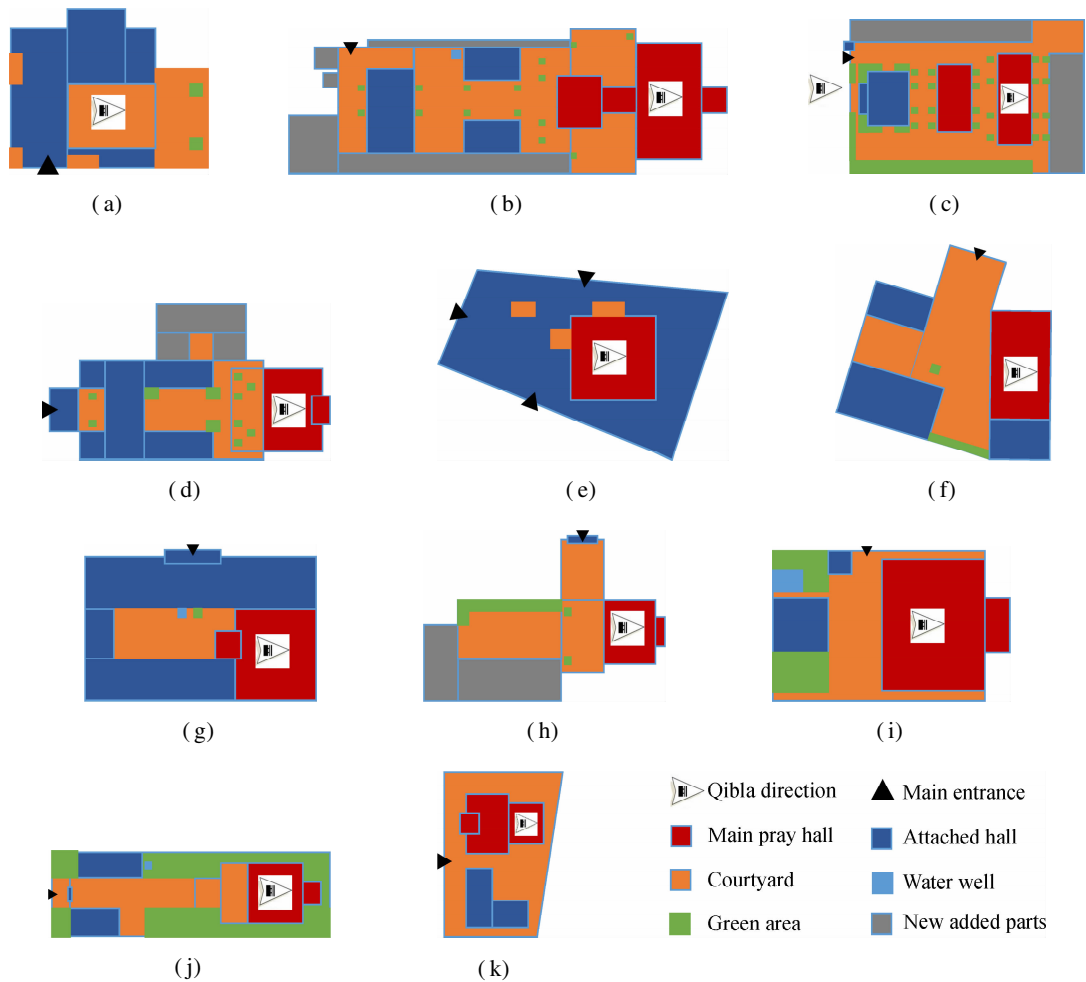


Fig. 5 Analysis for the eleven mosque case studies in Nanjing city. (a) Jizhaoying; (b) Jingjue; (c) Caoqiao; (d) Hushu; (e) Dongmen; (f) Yitiaoxiang; (g) Xingdian; (h) Zhuzhen; (i) Changjiang; (j) Nanmen; (k) Lishui

The information of the inner courtyard importance with the aesthetic, functional and environmental characteristics of the courtyard was analyzed. Results confirmed the great importance of the inner courtyard elements in the mosque design (physical and natural), with a beauty that distinguishes it from other buildings surrounding it (see Fig. 6(a)). The environmental and functional aspects were also fundamental, for providing good lighting to the mosque in addition to being an excellent area to achieve smooth and convenient movement of worshipers in the mosque (see Figs. 6(b) and (c)).

The correlation and the impact of physical and natural components of the mosque courtyard on the aesthetic and environmental characteristics were analyzed. The results suggest the importance of the courtyard’s aesthetic property composition whereas more beauty will be obtained by including both types of natural elements (water and

plants). It also interacts with the physical elements (furnishing, free and roofed passages) to give an integrated view reflecting the psychological comfort for the mosque worshiper (see Figs. 7(a) to (f)). As for the graves, one of the mosque courtyard sub-event elements, the results were entirely different since their presence was never desirable (see Fig. 7(g)). The analysis also showed the raising of the mosque environmental value achieved by the presence of water and plant elements (see Figs. 7(h) and (i)).

Additional analysis was also conducted on the elements of the courtyard, which aims to determine the importance of the seven elements in the design of traditional and modern mosques for both the Arab and Chinese mosque and analyzing it, we can identify the appropriate requirements (see Fig. 8).

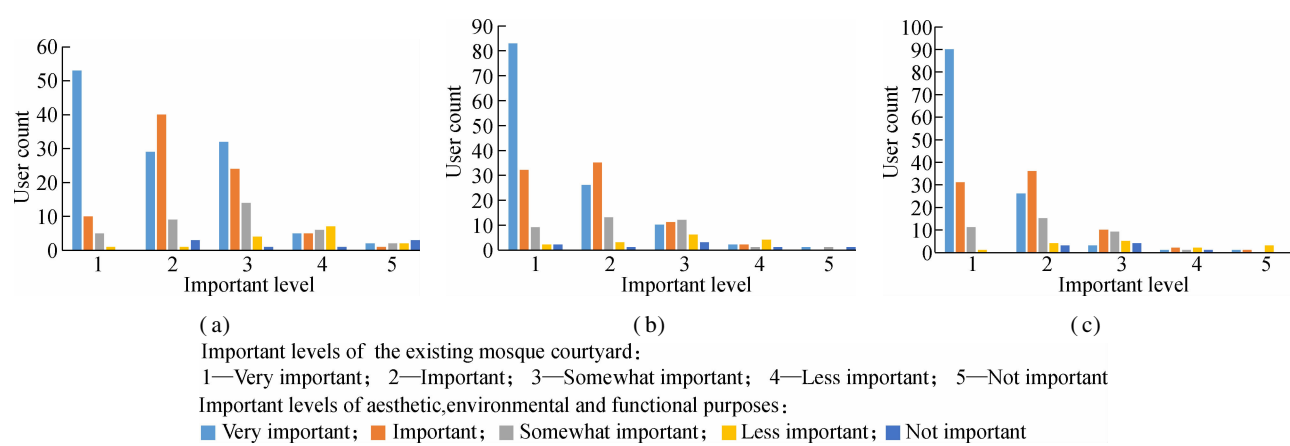


Fig. 6 Significance of Nanjing mosque inner courtyard based on the users’ view with different purposes. (a) Aesthetic purpose; (b) Environmental purpose; (c)Functional purpose courtyard style to help us identify the characteristics of each model. By means of transforming the cultural background of each user from each model into a set of data

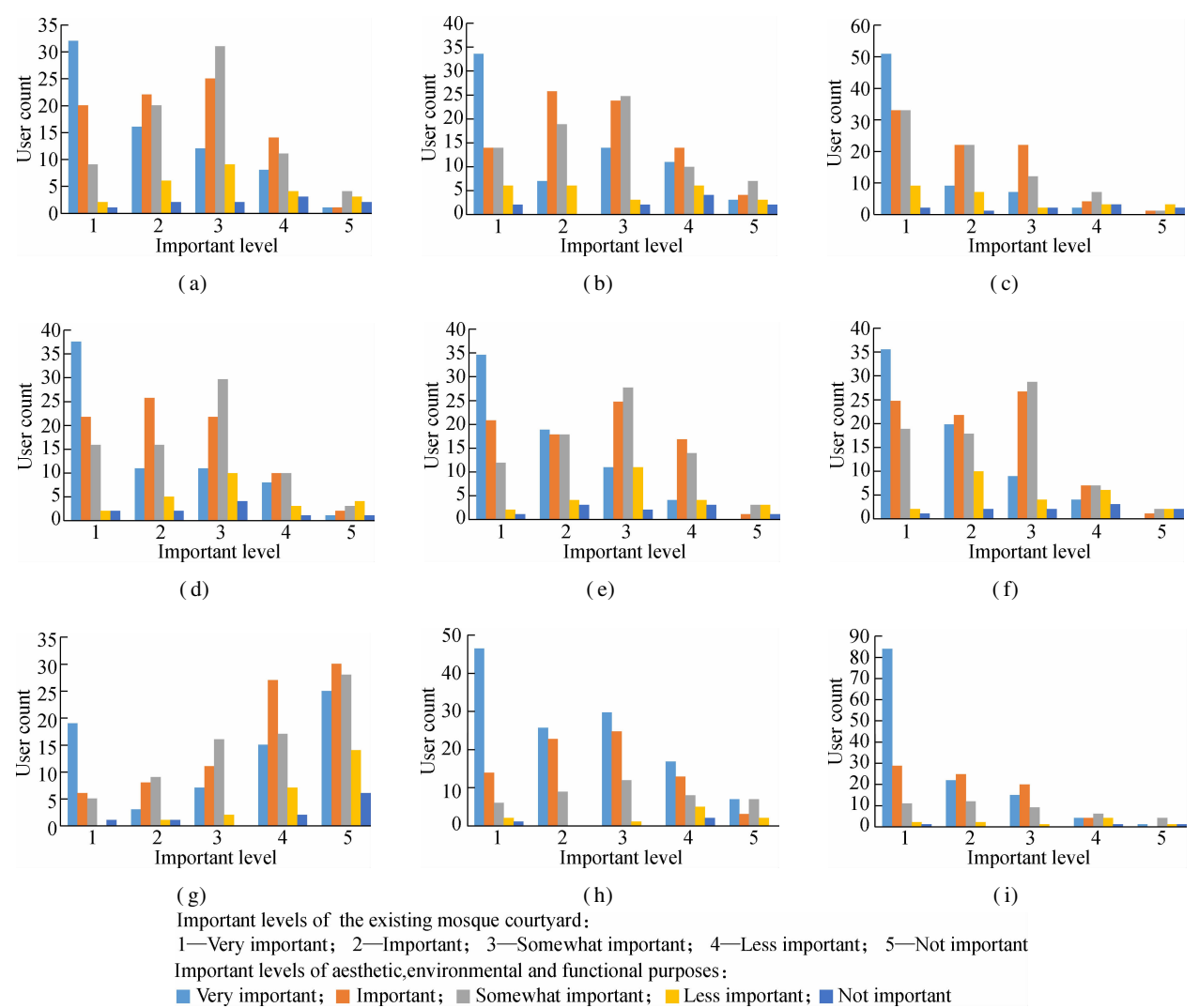


Fig. 7 Charts showing the mutual effects of aesthetic and environmental characteristics of mosque courtyard with its physical and natural components. (a) Water; (b) Plants; (c) Multiple courtyard; (d)Roofed passages; (e) Free passages; (f) Furnishing; (g) Sub-event elements; (h) Environmental & water; (i) Environmental & plant

As for the style of the new mosque in the city of Nanjing for the Arab Muslim users, the primary aim is to have a courtyard mosque design that combines Arabic and Chinese elements for their distinctive values. The second aim is to have a mosque with an Arabic style courtyard due to the absence of such a model in the city (see Fig.9).

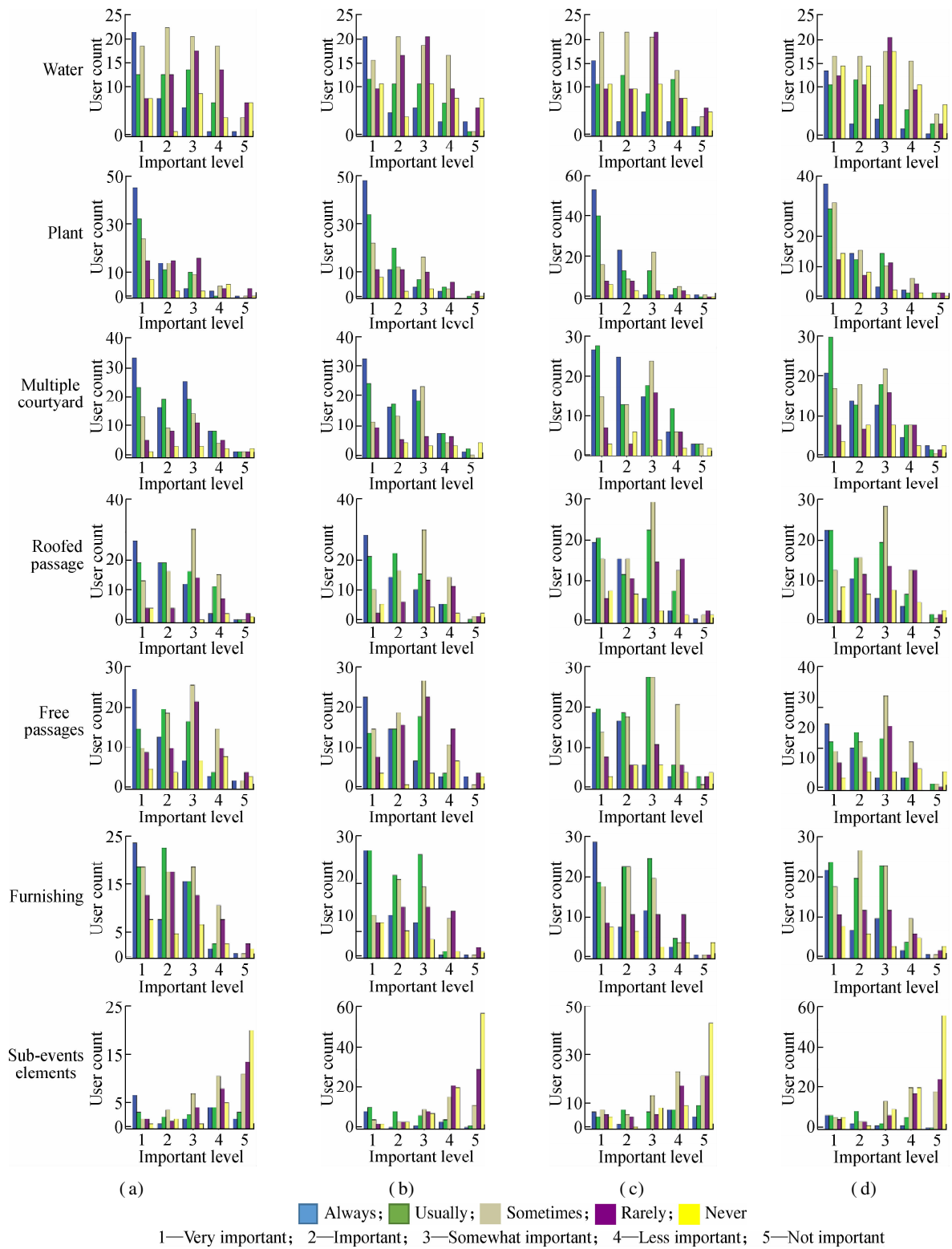


Fig. 8 A comparison chart for the use of physical and natural elements in each modern and traditional mosques of Chinese and Arabic style according to the user's views. (a) Traditional Arabic style; (b) Modern Arabic style; (c) Traditional Chinese style; (d) Modern Chinese style

In other words, although the courtyard of the mosques in the Arab countries does not contain any flora, the design of the Chinese-style mosque impacted the Muslim Arab users significantly. This impact was noted through the desire to have a plant element, such as trees and shrubs, in

addition to free passages as gardens, the two elements which constitute one of the essential components of the Chinese courtyard design. In contrast to the water elements, which were absent from the design of Chinese mosques, the importance of their presence for the Arab

Muslim came through its close association with the design of mosques in Arab countries.

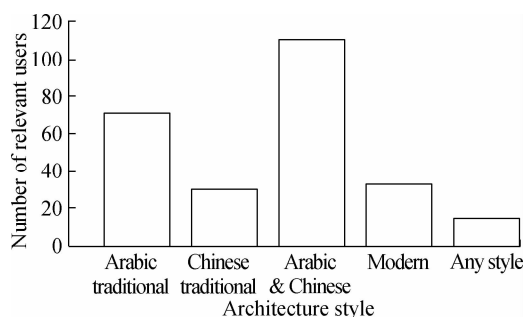


Fig. 9 Future mosques' style in the city according to the Arab Muslim users' requirements

7 Conclusions

1) One of the leading recommendations of this research is that there must be detailed architectural documentation for the ancient mosques in the city due to the historical and cultural value of these buildings. The findings show that Chinese mosques, unlike other mosques, place different emphasis on features related to culture, customs, religions and traditions. We can describe the traditional Chinese mosque courtyard as a naturally beautiful form resulting from the melding of nature and the human spirit through the great use of flora and other natural elements in the design of its courtyard. Furthermore, its courtyard does not have a similar form and elements which are used in mosques around the world. The attributes and distribution of elements are various due to the climatic and traditional characteristics of each region.

2) Also, there is a great cultural interaction between Arab Muslims with Chinese civilization in the city of Nanjing. Since the mosques in the city are divided between modern and traditional Chinese style, the presence of a mosque with an Arabic interior courtyard style will increase the quality of mosque design in the city and will add a kind of unique variety to the types of mosques present in the city. In addition, this research constitutes an important core to identify the essential elements and principles in the design of a new model of mosques that combines elements of both Arabic and Chinese style, especially in the use of water and flora elements together in the design of these mosques' courtyards.

3) As there are many Muslim communities in the city (Pakistan, India, etc.), this research can be regarded as a guide for exploring all the factors associated with various civilizations and creating a kind of high level fusion of mosque models in the city. The form meets the needs of all users and keeps pace with the enormous openness of Nanjing city in different cultures. Briefly, the process of participation between the designer and user is one of the main foundations in creating an integrated design and achieving quality in the design process for any types of ar-

chitectural buildings. The outcomes of this study illustrate that the Islamic-Chinese mosque courtyard provides important documentation and evidence for the process of cultural integration. In addition, it serves to add a new point to the field of research related to the Islamic and Chinese styles.

References

- [1] Min J Q. The present situation and characteristics of contemporary Islam in China[J]. *Journal of the Interdisciplinary Study of Monotheistic Religions*, 2013, **8**: 26 – 36.
- [2] Mi S J, You J, Min C. *Islam in China*[M]. Beijing: China Intercontinental Press, 2004.
- [3] Qiu Y L, Sun D Z. *Islamic buildings*[M]. New York: Springer-Verlag, 2003.
- [4] Cheng L Y, Wang B Y, Ru J H, et al. *Ancient Chinese architecture* [M]. New York: Springer-Verlag, 2003.
- [5] Meir I. Courtyard microclimate: A hot arid region case study [C]//*Proceedings of the 17th PLEA International Conference on Architecture City Environment*. London, UK, 2000: 218 – 223.
- [6] Dee C. *Form and fabric in landscape architecture: A visual introduction*[M]. Taylor & Francis, 2004.
- [7] Ching F D. *Architecture: Form, space, and order*[M]. John Wiley & Sons, 2014.
- [8] Starke B W, Simonds J O. *Landscape architecture: A manual of environmental planning and design*[M]. New York: McGraw-Hill Education, 2013.
- [9] Agnew J A, Duncan J S. The devaluation of place in social science [M]// *The Power of Place: Bringing Together Geographical and Sociological Imaginations*. Boston, MA, USA: Unwin Hyman, 1989.
- [10] Scannell L, Gifford R. Defining place attachment: A tripartite organizing framework[J]. *Journal of Environmental Psychology*, 2010, **30**(1): 1 – 10.
- [11] Bloom W. *Personal identity, national identity and international relations*[M]. Cambridge, UK: Cambridge University Press, 1993.
- [12] Allen J, Cochrane A, Henry N, et al. *Rethinking the region: Spaces of neo-liberalism* [M]. Abingdon, UK: Routledge, 2012.
- [13] Opp J. Public history and the fragments of place: Archaeology, history and heritage site development in southern Alberta[J]. *Rethinking History*, 2011, **15**(2): 241 – 267.
- [14] Dillon M. China's Islamic frontiers: Borders and identities[J]. *Boundary and Security Bulletin*, 2001, **8**(4): 97 – 104.
- [15] The Nanjing Islamic Association. Entering the mosque [EB/OL]. (2017-07-12) [2018-01-02]. <http://www.njislam.com/zjqzs.asp>. (in Chinese)
- [16] Nelson C. *Managing quality in architecture*[M]. Abingdon, UK: Routledge, 2007.
- [17] Farooqui R U, Ahmed S M. Designing for quality: An empirical study of design quality indicator (DQI) tool [C]//*Seventh LACCEI Latin American and Caribbean Conference for Engineering and Technology* (LACCEI' 2009) . San Cristóbal, Venezuela, 2009: 1 – 7.
- [18] Lee Y K. Design participation tactics: The challenges and new roles for designers in the co-design process [J]. *Co-*

Design, 2008, 4(1): 31 – 50.

[19] Saleh A M A. Community participation in architectural design, evaluation of Al-Maageen housing in Nablus [D]. Nablus, Palestine: Faculty of Graduate Studies at An-Najah National University, 2006.

[20] Norouzi N, Shabak M, Embi M R B, et al. The architect, the client and effective communication in architectural design practice [J]. *Procedia—Social and Behavioral Sciences*, 2015, 172: 635 – 642.

[21] Eriksson J. Architects and users in collaborative design [D]. Gothenburg, Sweden: Chalmers University of Technology, 2013.

阿拉伯使用者视角下南京市清真寺内院空间要素的评价分析

Wael Alhasan^{1,2} 成玉宁¹ Ranim Yehya Khoder²

(¹东南大学建筑学院, 南京 210096)

(²School of Architecture Engineering, Tishreen University, Latakia, Syria)

摘要:为了推动中国与伊斯兰世界关系的进一步发展,满足广大穆斯林在中国使用清真寺的文化需求,研究了多元文化背景下的清真寺庭院设计.清真寺由于其独特的设计形式,成为“中国-伊斯兰”多元文化融合中的重要代表,庭院作为清真寺中的一个基本构成元素,在多元文化融合背景下表现出来的形式亦各不相同.为了提升设计质量,且用户参与设计过程的需求也在不断增长,研究旨在总结传统和现代中国清真寺庭院设计在阿拉伯穆斯林使用者中现状评价状况,以评估其是否符合阿拉伯穆斯林使用者的需求.通过对居住在南京的阿拉伯穆斯林人群进行问卷调查,分析传统与现代清真寺庭院的设计要点,并对其设计方案的质量进行评价.通过清真寺庭院设计中的7个自然和人工元素,分析了清真寺庭院的功能及其结构特征.研究结果可应用于对未来清真寺庭院设计的改进提升,使其满足中国和伊斯兰穆斯林用户在使用以及审美方面的需求.

关键词:参与;文化;评估;质量;中国清真寺;伊斯兰

中图分类号:TU986.6