

Mosque Architecture between the Past and the Present: A Critical Review

Omar S. Asfour

Associate Prof., Architectural Engineering Dept., IUG, Palestine
Email: oasfour@iugaza.edu

Abstract

Since the early times of Islamic history, Muslims have paid a lot of care to mosque architecture. This could be noticed in the diversity of mosque elements and styles that have been used across the history. This paper provides an overview on mosque architecture through presenting its main constituent elements and architectural styles. It also discusses the conflict that exists today between modernism and symbolism in mosque design. Both trends have been critically presented and discussed. It has been concluded that contemporary designs and implementation of technology could be innovatively utilized within the frame of historical preference and symbolism. In addition to their functional roles, mosque architectural elements should be used as linking tools between the present and the spirit of Islamic history in order to maintain the identity of this type of buildings.

Keywords: mosque, architectural style, modernism, symbolism.

عمارة المساجد بين الماضي والحاضر: مراجعة نقدية

ملخص: اهتم المسلمون اهتماماً خاصاً بعمارة المساجد منذ بداية التاريخ الإسلامي، وقد تجلّى ذلك بشكل كبير في تنوع العناصر والطرز المعمارية المستخدمة فيها عبر التاريخ، وتقدم هذه الدراسة لمراجعة لعمارة المساجد من خلال التعريف بأهم العناصر المكونة للمسجد، وأهم الطرز المعمارية المستخدمة فيه، كما تستعرض وتتقد الجدلية القائمة بين متطلبات الحداثة والقيم الرمزية في تصميم المساجد، وتخلص الدراسة إلى أن المتطلبات العصرية للتصميم والتقانة لا تتعارض بحال مع المرجعية التاريخية والرمزية في عمارة المساجد، بل يمكن أن يتم استغلالها بشكل إبداعي في هذا الإطار، فبالإضافة إلى الدور الوظيفي للعناصر المعمارية المختلفة للمسجد، فإنه يتوجب استخدام هذه العناصر كأدوات تربط العمارة المعاصرة للمسجد بالجانب الروحي الذي اتسمت به عمارة المسجد عبر التاريخ الإسلامي، وذلك بشكل يضمن الحفاظ على الهوية المميزة لهذا النوع من المباني.

Introduction

The year 622 was the year of migration to Medina, *hijrah*, in which the Prophet Mohammed (PBUH) established his mosque. This mosque is one of the three main mosques in Islam: *al-Haram* Mosque in Makkah, Prophet's Mosque in Medina, and *al-Aqsa* Mosque in Jerusalem. Books of history explained the Prophet's Mosque architecture, which is called today *Al-Masjid Al-Nabawi*. According to Hillenbrand [1], the original mosque was built by the Prophet (PBUH) and his companions as a courtyard surrounded by plain walls and attached to a covered prayer shed. The shed was constructed by palm trunks and covered by palm fronds (Figure1). In general, the design of this first model was simple and homogeneous with its urban context. As number of Muslims increased, this mosque was extended and developed seven years later to be a court surrounded by arcades from all sides. As Islam spread outside the Arabian Peninsula, mosque design developed as a response to the new urban contexts. Many elements have been added to mosque design. Also, number of mosques in one city increased from one large mosque in the past, called *al-Masjid al-Jami'*, the grand mosque, to many and may be hundreds of mosques in one city.

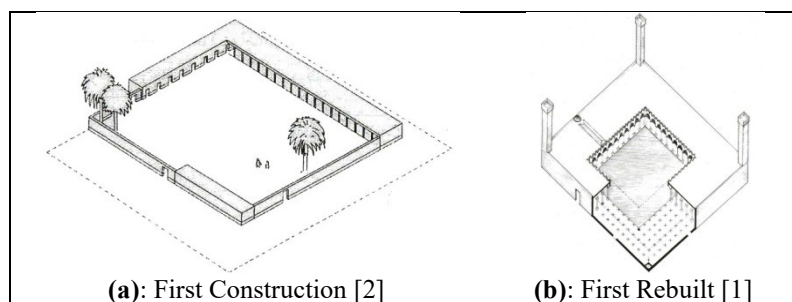


Figure 1: An imagination of the Prophet's Mosque

The first and most important element in mosque architecture is the prayer hall, which is the place where people pray in rows directed to the *Qiblah*, Makkah. Prayer hall also includes a place for the *Imam*, who is the leader of prayers. This place is called *al-Mihraab*, niche, and it is placed in the front wall of the hall. Inside it, there is another element called *al-Minbar*, or pulpit, from where the *Imam* delivers Muslim weekly speech in Friday prayer. As a general rule, the design of prayer hall should not contain anything that might disturb the prayers, especially in *Qiblah* wall. Symmetry in prayer hall is a usual practice. This could be along mosque longitudinal axis, or both longitudinal and horizontal axes.

Another element of mosque architecture is the courtyard. Courtyard was used as a main element in the first construction of the Prophet's Mosque. It is usually attached to the prayer hall and surrounded by covered arcades called *riwaq* from at least one side. Mosque courtyard has several advantages. For example, it can be used as an additional prayer place especially in peak times where the covered zone can't accommodate all prayers. Also, it has an environmental advantage, where shading, vegetation and water bodies can be used for passive cooling.

The twin of dome and minaret is a unique component of mosque architecture. Historically, dome is one of the oldest roofing forms and has been used from earliest times. Also, it is considered as one of the most efficient shapes to cover large plans. In mosque architecture, some claim that it has an additional symbolic value of representing the vault of heaven. However, it also attracts architects because of its ability to provide large internal space without internal columns. This is common in Turkish mosques which are characterised by the construction of large and several domes. Minaret is the principal vertical feature of mosque architecture. It is the tower from which prayer call is performed, or broadcasted, five times a day. In addition, some claim that it has a symbolic value represented in raising the declaration of faith. One or more minarets are usually attached to mosque prayer hall. Figure 2 shows a zoning diagram and design example of a contemporary mosque with a list of some typical mosque components.

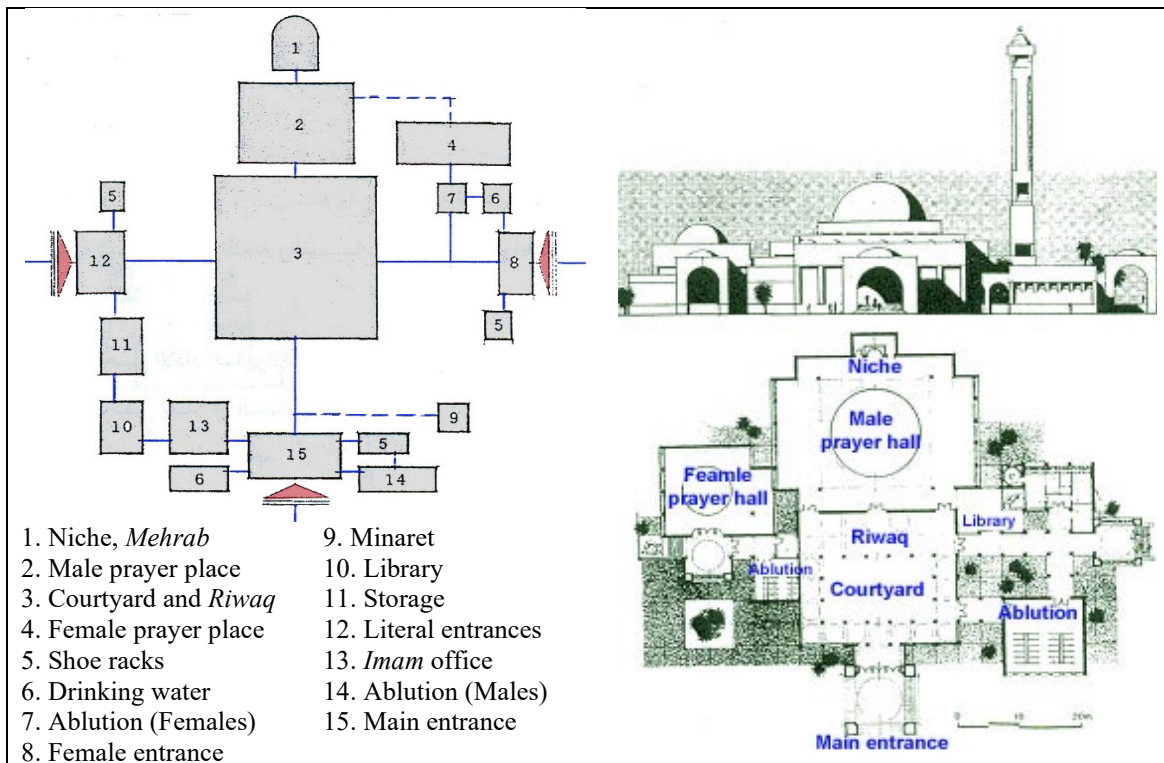


Figure 2: Zoning diagram of a contemporary mosque, with exemplary plan and façade [3]

Mosque Architectural Styles

Mosque elements discussed above have been used in different ways and combinations as a common language to produce different mosque styles. This was a result of local and regional conditions. Many approaches have been used to classify these styles. This includes categorizing them according to the geographical place, political period, or building geometry. One common approach is to classify them according to their geographical zone. According to Frishman & Khan [4], it is possible to classify mosque architectural styles into five broad styles as depicted in Figure 3.

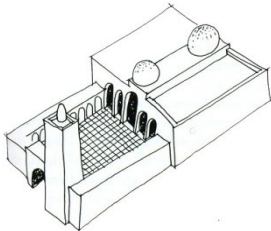
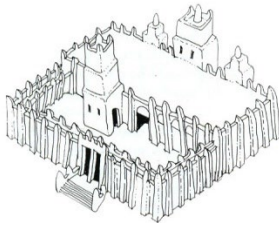
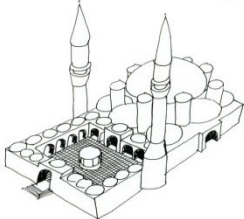
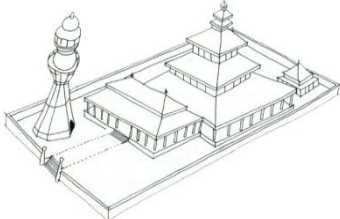
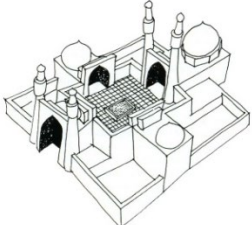
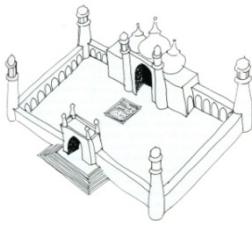
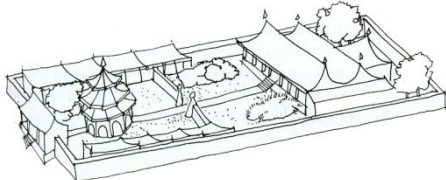
1. Hypostyle mosques:			
			
Location	The Arabian heartland, Spain and North Africa.	Location	Sub-Saharan West Africa.
General description	Hypostyle hall with flat or domed roof attached to a courtyard.	General description	Hypostyle hall using mud-brick or rammed-earth construction.
2. Mosques with central and covered interior:			
			
Location	Anatolia.	Location	Southeast Asia.
General description	Central interior covered by a massive dome.	General description	Central interior covered by pyramidal roof construction.
3. Mosques with <i>iwān</i> (vaulted hall):		4. Mosques with triple dome:	
			
Location	Iran and central Asia.	Location	The Indian subcontinent.
General description	Similar to no. 1, but with <i>iwān</i> and dome on the sides of a bi-axially divided central courtyard.	General description	Triple-domed style with a large courtyard.
5. Mosques with walled complex:			
			
Location	China.		
General description	Detached pavilions within a walled garden enclosure.		

Figure 3: Illustration of the five basic categories of mosque architectural styles [4], adapted and reproduced by the author

To understand these styles in a detailed manner, it is a necessity to scan a long and complex history. Starting by the Prophet's Mosque in Medina up to date, many styles and features have been documented. After he admitted the difficulty of classifying mosque architectural styles, Hillenbrand [1] classified these styles under three main categories that are most common in mosque architecture: the hypostyle or Arabic style, the Turkish or Ottoman style, and the Iranian or Persian style. The rest of styles, in a way or another, have major similarities with them. For example, mosque style in the Indian subcontinent is a successful combination of the three main styles mentioned above. This section will give an overview of these three main styles [1].

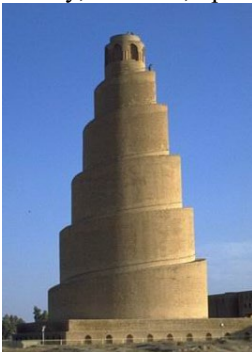
The hypostyle or Arabic mosque was born in Medina from the Prophet's mosque. It had been developed in other places like Iraq and Syria, and soon entered North Africa, Spain, and other countries of South Asia. Its name 'Arabic' style because its first appearance was in the Arabian lands, like the Prophet's Mosque. It is also named 'hypostyle' mosque because of its systematic structural system based on arcades. As indicated in Figure 4, the hypostyle mosque usually consists of a large courtyard and a covered prayer hall with flat or pitched roof.



(a): An interior of Great Mosque of Cordoba, 8th century, Cordoba, Spain [5].



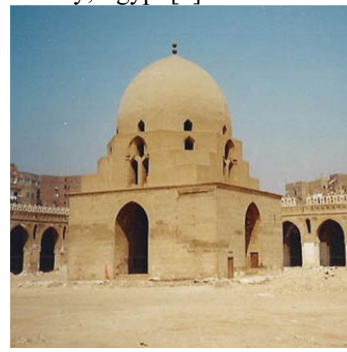
(b): Al-Hakim mosque, 10th century, Egypt [5].



(c): The Spiral Minaret, Samarra Great Mosque, Iraq [5].



(d): Al-Ghouri minaret, Al-Azhar, Egypt (photo by the author).



(e): The courtyard of Ibn Tulun Mosque, 9th century, Egypt (photo by the author).

Figure 4: The hypostyle style of mosque architecture

Dome was integrated into this style in a later stage, and then became common. Variety of dome shapes in this style could be distinguished like spherical and elliptical domes. The earliest domes were smaller than the subsequent ones. As for the minaret, the Arabic style has a variety of minaret forms. This is clear in Cairo, which is known as the

city of a thousand minarets. One main form is the square one, which is found in Syria, North Africa, and Spain. Another form is the spiral one. Minarets of *Ibn Tulun* mosque and the Great Mosque of Samarra are famous examples here.

The Turkish or Ottoman style was common in the Ottoman Empire. It is characterised by the use of several well-integrated domes and half domes to cover the prayer hall. Prayers halls in this style are usually large and fully closed. Domes are usually centralised over the prayer hall, and sometimes cover the entire plan with lateral and smaller numerous domes (Figure 5). This made this style different from the hypostyle one, where roof loading doesn't rely solely on columns. This resulted in a high ceiling in the interior and massive appearance of the exterior.



(a): Fatih Mosque, 15th–18th century, Istanbul, Turkey [5].



(b): Muhammad Ali mosque at the Citadel, 19th century, Egypt [photo by the author].

Figure 5: The Ottoman style of mosque architecture

Thus, the Ottoman style changed the concept of mosque buildings from semi-opened enclosure to a totally closed building. It could also be said that Ottomans changed mosque design lines from the horizontal style to the vertical one. The standard Ottoman minaret has a slender cylindrical shaft, or polygon with many sides, raised on square or polygonal base. It also has at least one circular balcony and crowned by elongated conical roof. This is why it is normally described as a pencil-like minaret. Sometimes, many minarets in one mosque are used.

The Iranian or Persian style is in fact an alteration of the Arabic Style. It is characterised by the use of dome chambers, twin minarets, and *iwans*. *Iwan* is a vaulted open hall with rectangular arched facade used as a monumental entrance (Figure 6). In some examples, many *iwans* have been used in different sides of the mosque courtyard. Bulbous and onion shaped domes are common in this style, in addition to the extensive use of colour and ornaments.



(a): Mosque of the Shah, 14th century, Asfahan, Iran: Main entrance to the courtyard [5].



(b): Abdullokhon Mosque, 16th century, Isfara, Tajikistan: the entrance [5].



(c): Friday Mosque of Ashtarjan, 14th century, Iran: dome chamber iwan [5].

Figure 6: The Persian style of mosque architecture

Mosque Architecture and Modernism

The above-discussed diversity in mosque styles during the different ears of Islamic history can be related to the dynamic concept of mosque, which is simply the place of performing prayer. This means that the simplest form of mosque is a defined enclosure, usually covered, with its floor used for prayer. As an example, Figure 7 shows an open-air simple prayer area, where a stone marker indicates *Qibla*, Makkah direction. Thus, the basic functional requirements in mosque architecture are [6,7]:

- Providing a sufficient and pure place for prayer.
- Orientation towards Makkah.
- Reducing or eliminating internal columns that interrupt prayer rows.
- Avoiding over decoration that may interrupt prayers.
- The use of plan forms that allow for longer rows, especially the first row which has a special virtue in Islamic traditions.

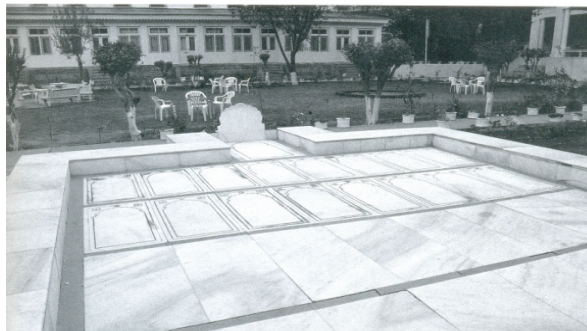


Figure 7: Mosque simple concept [2]

Other facilities may be added to accommodate the different functions that are practiced in mosque buildings, in addition to prayer. This includes teaching, social gathering, and community welfare. These architectural styles face a great challenge today in the context of modern architecture, which is generally characterized by simple forms and an absence of decoration. This challenge is more pronounced in the West, where design of new purpose-built mosques has several international references, depending on the vision of Muslim minorities of mosque architecture [8]. Globally, several trends exist in mosque design nowadays. However, three main ones can be distinguished, as follows:

- Preserving the historical styles in terms of main characteristics and details. This may be called vernacularism, where architectural mosque elements are almost copied from the historical examples.
- Delinking the contemporary mosque from these styles. This may be called modernism, where the door is open to use new forms and theories.
- Reintroducing the historical styles but in a modern character and function. This may be called postmodernism, which presents a moderate approach.

One main impact of this diversity is questioning the necessity of some historical elements in mosque architecture. Some argue that some of these elements, such as domes, were not originally developed by Muslims, therefore they should not be used in mosque architecture. However, this is how architecture works: to develop the work of others in an innovative way. Moreover, Islamic architecture has developed special building types, elements, proportions, and even ornaments [9].

Some also argue that these elements have not been used in the first model, the Prophet's Mosque. Thus, their claimed spiritual value is overestimated. Accordingly, mosque spiritual impact should come from its simplicity and purity that promote spirituality in prayer while maintaining the aesthetic principles. In this context, the spiritual role of these elements can be considered as complementary rather than essential [6]. In this context, dome and minaret have been considered as optional elements of mosque design in the modernism school [10].

Nofal [11] classified mosque architectural elements in different functional groups, as shown in Figure 8. He claimed that these elements have their preferences from the Prophet's mosque and the earliest mosques in Islam, which reflects the essential functional requirements. In fact, the rationale of this classification is a subject of argument. For example, it includes the minaret as one of the main elements, while it excluded the dome. This is despite of the fact that dome is a common architectural element that has been used in the earliest mosques and reached its peak in mosque of the Dome of the Rock in Jerusalem built in the Umayyad dynasty in the seventh century. In this century, minarets started to be used in mosques [12], and were not popular until the fourteenth and fifteenth century [2].

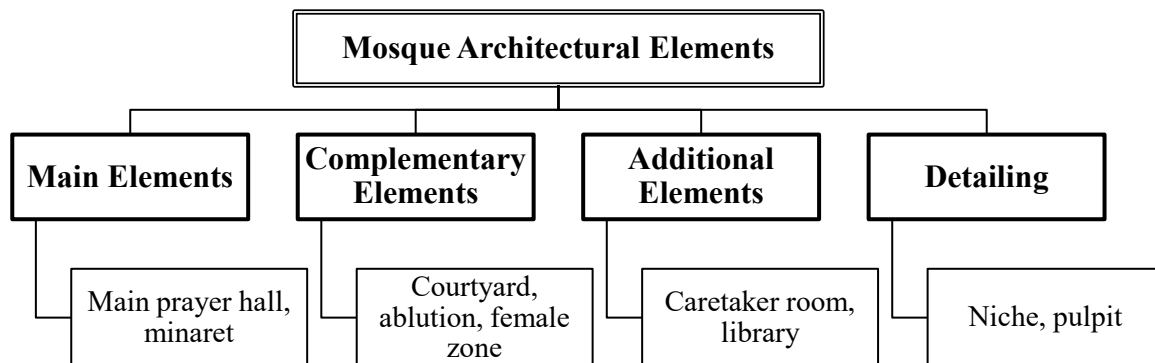


Figure 8: Mosque architectural elements [11]

Thus, these elements have achieved their validity by being in use for centuries of the Islamic civilisation. The fact that they have not been used in the first model didn't prevent their use later on as there is no particular Islamic text in this regard. This means that historical elements of mosques should be maintained and enriched to provide the required symbolism. This has to be done in an innovative way that harmonises with the context of contemporary architecture without being put into rigid moulds. This strikes a balance between the need of preserving mosque identity and the need of keeping the door open for innovation in mosque architecture in a way that considers the local and regional requirements. Figure 9 shows some examples in this regard.

Thus, mosque architecture and its constituent elements need to be perceived in the contemporary context of architecture as:

A. Linking tools between the past and the present:

Muslims are used to see mosque buildings in specific styles or characters for several centuries. This, no doubt, has created a spiritual link between them and the spirit of the Islamic history and civilisation.

B. Image makers of the Islamic city

Mosques are main elements in creating the Islamic city image. Cities such as Cairo and Istanbul are typical examples, where city skyline and perspective are greatly dominated by this type of building. Thus, on a city scale, the unique style of mosques is essential in showing the Islamic city identity.

C. Identity tools utilised to distinguish mosques among adjacent buildings

When somebody looks for a mosque, he/she will try to find a building with specific characteristics and architectural elements. This in fact shows the advantage of mosque historical styles and elements. Al-Qaradawi, an Islamic scholar, mentioned that one of the characteristics required in mosques is the uniqueness of its architecture among other buildings [7]. This has the advantage of guiding people to this kind of buildings. Thus, mosque should be designed in a way that makes mosque identity unquestionable.

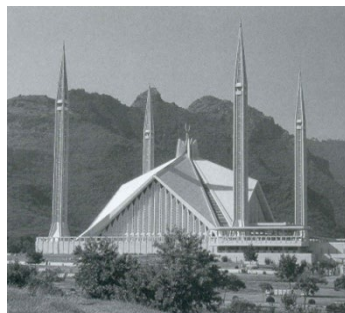
D. Microclimatic modifiers:

This is an essential issue considering the environmental and ecological stresses that the globe faces today. For example: what is the difference between a mosque that has a

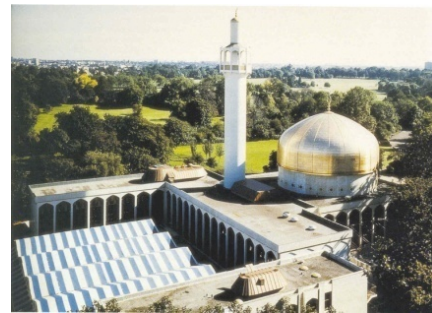
dome and the one that hasn't? Apart from the above-mentioned issues related to identity, the advantages of natural ventilation, natural lighting, and self-shading are lost in the second one. Also, the advantage of the courtyard can't be ignored here. The author presented some of these ideas in a separate previous study [13]. This in fact explains the growing trend of implementing the concepts of sustainability in the 'green mosque'.



Medina: Qiblatain mosque [5]



Islamabad: the use of modern structures and several minarets in King Faisal mosque [10]



London: the use of courtyard with light sheltering in the Central Mosque of London [10]



Jeddah: minaret of al-Harithy mosque [10]



Jeddah: the Island Mosque [5]



Karachi: The use of concrete shell dome to cover the whole prayer area of Defence Officers' mosque [10]

Figure 9: Examples on different contemporary mosques

6. Conclusion

This study highlighted the concept of mosque, its main constituent elements, and its main architectural styles. This overview revealed a great diversity in this regard. However, designers nowadays face a style dilemma when it comes to the contemporary mosque design. Some tend to copy some historical prototypes, while others try to introduce new designs that are totally unlinked to the past. In fact, both tendencies have in a way or another underestimated the importance of historical preference and modern functional and aesthetic requirements.

To develop a modern theory of mosque architecture, spiritual and symbolic values of mosque elements as well as their functional and environmental role should be taken into account. In this context, mosque constituent elements need to be perceived in the contemporary context of architecture as:

- Linking tools between the present and the spirit of the Islamic history and civilisation

- Image makers of the Islamic city
- Identity tools utilised to distinguish mosques among adjacent buildings
- Microclimatic modifiers that emphasise the role of mosque in promoting the concepts of sustainability and green architecture

This is still the most common practice in contemporary mosque design, i.e. to turn back to the historical models in order to validate any new design. This is achievable by looking for the architectural elements in the historical mosques and reintroducing them with the utilisation of new building technologies. This helps forming a common language in mosque design, which prevents mosque identity loss.

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