

SPIRITUAL SENSORY THEORY AND BODILY EXPERIENCES KEYS FOR SUCCESSFUL MOSQUE DESIGN

 Haifa Ebrahim Mohamed Al Khalifa*

Department of Interior Design, University of Bahrain, College of Engineering, Bahrain

Abstract. Applying spiritual theory in architecture is one of the critical successes for project design. Consequently, the inspiration of the phenomenological approach in creating mosques will create a strong relationship between users and religious spaces by feeling the spiritual value, which will be a critical factor in delivering this feeling for worshippers. Therefore, it is essential to understand the spiritual sensing of mosque worshippers so that designers can provide successful designs for the community. After reviewing the literature for the leading theory of bodily experiences, the research will use the phenomenological approach to examine mosque architecture design and produce an evaluation matrix that can be used to assess users' spiritual senses in mosque buildings.

Keywords: *Spiritual sensory, Phenomenological, Mosques, Sustainability, Bahrain.*

***Corresponding Author:** *Haifa Ebrahim Mohamed Al Khalifa, Department of Interior Design, University of Bahrain, College of Engineering, Bahrain, Tel: 0097334400427, e-mail: halkhalifa@uob.edu.bh*

Received: 6 January 2023;

Accepted: 3 April 2023;

Published: 4 August 2023.

1. Introduction

Mosques were the core of various activities that sustained the community's well-being and were considered intimate spaces for Muslims. In the golden era of Islam, mosques have been of social, economic, and environmental importance. These buildings have witnessed moderate integration of faith virtuosity and daily vivacity (Elghonaimy, & Al-Haddad, 2019). The mosque architecture went through a phase of transformation, and through this process, it produced a hybrid architectural style inspired by various regional Islamic cultures. The resulting architectural language incorporated Persian, Ottoman, Mamluk, and Moroccan styles, to name only a few Islamic regional trends (Al Khalifa, 2017). In the last few decades, the design of such buildings passed many changes. Mainly, the mosques' design concept and details had many differences, appearing in the form and the interior spaces. Unfortunately, many talked about how worshippers cannot feel the deep sense of practicing religious activities in the mosque like before. (Elghonaimy & Eldardiry, 2019) Therefore, it is essential to understand the spiritual meanings in designing religious buildings, which will deliver the desired spiritual in such design, evoke a more emotional experience, and form a spiritual area by following the fundamental concept of practicing religious activities. In turn, it will create a more pleasant use for the space and encourage a better response.

The research discusses the problem that worshippers do not feel a deep spiritual sense while practicing religious activities in mosques. Moreover, they miss the mental image

How to cite (APA):

Al Khalifa, H.E.M. (2023). Spiritual sensory theory and bodily experiences keys for successful mosque design. *New Design Ideas*, 7(2), 243-264.

after leaving the mosques. In other words, designing mosques with low paying attention to users' feelings and experiences while visiting mosques leads worshipers not to feel a deep spiritual sense. This confirms the existence of a crisis of thought in the designs that neglect the role of non-traditional solutions and spirituality, which is the primary reasons for the low performance of such projects. Thus, in many pilot cases, the issue of creating mosques that concentrate on the function and the geometric properties of space is free from emotions attracts fewer people to visit and use the mosque. Consequently, it negatively affects the main objective of having such religious buildings in the community and decreases the benefit of such facilities.

This research proposes using the phenomenological approach to examine mosque architecture design and produce an evaluation matrix that can be used to assess users' spiritual senses in mosques. Using this matrix, designers can use and assist architectural design elements in improving the spiritual senses dimension for users in building spaces to enhance the feeling of the mosque's value. The research will use the proposed design matrix that connects worshippers to mosques while designing indoor and outdoor spaces as a sustainable project. Consequently, the research hypothesis is that the mosque design's successful spiritual experiences will happen by understanding people's mental and bodily experiences in mosque design. In other words, considering the spiritual Sensory Theory and Bodily Experiences are Keys to Successful Mosque Design.

Therefore, the aim is to highlight the significance of using phenomenological theory and the dependence on the sensory approach in designing a prosperous spiritual place and will improve the quality of the mosque's design. This research utilizes qualitative methods of phenomenological theory via studying a few cases to emphasize the symbolic and semiotic aesthetics in creating sacred spaces through the sense of place. Thus, the research significance will help improve the role of mosques in achieving a sustainable community in Bahrain, attracting users. Consequently, it will positively impact the country's achievement of the 2030 strategic plan.

2. Literature review

Mosques are known to the English-speaking world as buildings used for worship by Muslims. The word mosque, evolved from the Arabic period *masjid*, means 'place of prostration' (Mosque, 2013). 'The mosque is a unique expression of symbolic value and liturgical identity in Islamic architecture with its typical and functional features in an impressive building (Frishman & Khan, 2002).

While thinking about mosque Architecture, it could be said that it has two dimensions; material and spiritual, while its spirit and meaning of architecture are derived from history, memory, and enduring national and native values of a homeland that ascribes a specific purpose to architecture and produces a mental image in the minds (Rahbarianyazd, 2017). Therefore, Seeking a criterion of the mental image in worshippers' practice of their religious activities minds, focusing and after leaving the mosques is not an easy achievement. The requirements should be more comprehensive than a specific age and place. They can meet the needs of worshippers of different ages, physical abilities, and various conditions and genders in such buildings. Consequently, not surprisingly, Mosque architecture has dramatically focused on the form, design, settings, and motifs of such buildings as guidelines to impact worshippers' practice of their religious activities. Architects considered design settings and motifs vital in the design to achieve the spirituality of such buildings. Therefore, Mosque architecture pays

attention to the characteristics of spirituality that can be practiced in addition to urban life (Naghizadeh & Goodarzisoroush, 2011).

Mosques reflect regional traditions and styles throughout the Islamic world. Despite variations in size and design, the unique locations of mosques in Muslim communities remain essential. In recent significant design changes, mosques' architectural and interiors design have been modified, changing their internal components. Thus, the role of mosques in Muslim culture is significant. The type of mosque reflects the size and needs of individuals in the community. According to Islam's basic principles, Muslims regularly worship five times daily, the core place for praying and practicing Islam. Its function extends to meeting residents living in the surrounding urban context to manage their community's needs. Throughout the prayer, Muslims kneel and touch their foreheads to the floor (ground) as a symbol of compliance and submission (literally, Islam) to the will of Allah (Canby, 2000). A simple identification of mosque could be described as a place or building oriented toward Mecca, where Muslims perform their prayers and rituals of worship, consisting of two primary stages, ablution and the act of praying. The Qur'an, cites the mosque, 'masjid,' 28 times. Apparently, the mosque is where muslims worship and express their belief in the unity of ALLAH through prayer: 'and the areas of worship are for ALLAH (alone). So, invoke not anyone along with Allah' (Qur'an, Su. 72:18). (Elghonaimy & Eldardiry, 2019).



Figure 1. Minbar in the Great Mosque of Divrigi, Turkey (the researcher)



Figure 2. The Qibla, Sancaklar Mosque, Turkey (the researcher)



Figure 3. A minaret, a landmark to identify the mosque location (the researcher)



Figure 4. View of the courtyard in the mosque of Ahmad Ibn Tulun, Cairo, Egypt, 9th century (Elghonaimy & Eldardiry, 2019)

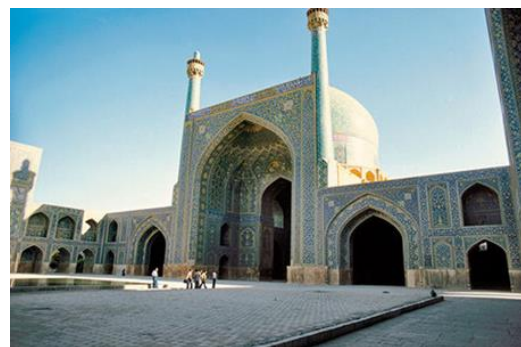


Figure 5. Shah Mosque, Isfahan, Iran, 17th century, the Qibla entrance, as seen from inside the courtyard (Elghonaimy & Eldardiry, 2019)

For an extended period, the common architectural elements of a mosque are:

- a. The Qibla: Muslims face the Ka'ba in Mecca when praying.
- b. The Mihrab indicates the direction of Mecca (the Qibla wall).
- c. A minbar (pulpit) is a pulpit in the form of a staircase on which the imam stands when delivering a sermon. The pulpit is usually situated to the right of the Mihrab.
- d. A minaret is a tall tower attached to or adjacent to a mosque and is a visual symbol of the mosque's presence.
- e. Sahn is almost a courtyard (Canby, 2000).

a. Mosque design and the conceptual of Phenomenology

Each mosque's design should have unique architectural features using the theoretical framework of a sense of place and the creation of sacred places through its architectural and cultural dimensions. These factors are based on corresponding elements of Islamic religious faiths. It is an important sacred symbol of Islam. The humble mosque architecture typology must show a strong cultural and architectural legacy. However, mosque architecture is presently directed in many projects dominated by minimalist theories. The economic factor or the traditional thoughts by some designers in showing minimal elements in their designs affect the design of such types of buildings, thereby altering the official expression of mosques.

Consequently, some mosques' designs lack a complete sense of mind map of the place or the sacred places without creating a sense of place. Ultimately establishing the Mosque's sense of place through various cultural influences and architectural components positively impacts sensing spiritual feelings. Sense of place sacred places mosque architecture cultural. Creating a sacred place such as a mosque architecture requires understanding Islam and its principles. The Qur'an and hadiths provide detailed information on designing appropriate spaces for house activities.

The term mosque, also known as Bayt ALLAH or the house of ALLAH Baitullah, conveys the concept of a house meant for worship and religion whose sole owner is ALLAH. The concept of Baitullah further proves that the Ka'aba Haram Mosque in Mecca and the Al Aqsa Mosque in Jerusalem were the first global contributions to Islamic architecture. The Ka'aba became the Qibla, the direction of prayers toward the Ka'aba for Muslims' tawhid belief in the oneness of ALLAH around the world. The Ka'aba conveys a universal vision that encloses and overcomes one whole life and the hereafter. (Bahauddin & Jaki, 2022).

b. Spirituality and exploring specific universal themes

Spirituality concerns the recognition of a feeling or sense or belief that there is something more significant than the person himself, something more to being human than sensory experience, and that the more substantial entirety of which element is heavenly. Spirituality involves exploring universal themes – love, compassion, altruism, life after death, wisdom, and truth. Aspiring to manifest the qualities of such inspirational illustrations often evolves as a vital part of the journey via life for spiritually inclined people (Spencer, 2018).

c. Phenomenology theory and the bodily experience

The phenomenology theory aims to return to the basics, captured by the slogan 'Back to the things themselves!' (Groenewald, 2004). It is a different branch of philosophy. It is a method of reviewing public users and the world or, more precisely,

their connections. It emphasizes that the environment and reality are not absolute and do not exist outside of us (Basha-Jakupi *et al.*, 2021). Instead, they exist as a matter of human scrutiny, communication, interaction, and innovation contribution. This is the philosophical reading of architecture. (Job & Elghonaimy, 2022; Shafik & El-Hussiny, 2019). Edmund Husserl (1859–1938) explained that he ‘sought to develop a new philosophical method which would lend absolute certainty to a disintegrating civilization’ (Eagleton, 1983, p. 54). While Fouche, 1993 explained that Vandenberg on 1997, considered Husserl ‘the fountainhead of phenomenology twentieth century’. Husserl rejected the trust that items in the world are self-determining and information about things is reliable. He argued that people could be convinced about how things appear or show themselves to their consciousness (Fouche, 1993). Particularly about this realization, anything outside conventional experience must be discounted. In this technique, the world is condensed to the fillings of personal consciousness. Thus, authenticities are preserved as pure ‘phenomena’ and only comprehensive information that can lead designers from where to begin. Husserl called his philosophical approach ‘phenomenology’, the art and science of pure ‘phenomena’ (Shanaa, 2021).

Bodily experience depends on the senses that create feelings and memories, turn space into place, and add value to a user’s experience. Users experience sites across their five senses; therefore, it is essential in urban design to consider worshippers’ sensual experience and the feeling of uniqueness of the places by employing phenomenology theory. Phenomenology theory illustrates those humans, through their senses, live unforgettable adventures in the area and create feelings and memories. Consequently, from an architectural landscape perspective, the worshippers’ feelings about places are established by manipulating the design of the space and selecting appropriate materials. Phenomenology theory focuses on the sensitivity of human perception rather than intellectual mechanical understanding. It considers the relationship between human feelings and places. In brief, Zumthor explained that, for a successful urban system, architects should use the observation method, a visual method, to enhance what is valuable, correct what is disturbing, and create what is missing (Shirazi, 2009).

An example of the bodily experience of a place is the heritage zone of Malacca, Malaysia. Walking along the famous Malacca River in the morning and hearing the beautiful low sound of the river's water deliver the ambiance of the heritage for the user of the spaces while walking and hearing. Suddenly, the disturbance of boats will pass through and disappear. The sound of the birds is above, while the cars and motorbikes come from the other side of the road. Additionally, the visual sense of the place is clear to everyone. The colors used on streets, pedestrians, buildings, and many urban facilities provide the connection between individual sites and the impression that the overall urban place is strongly symmetric and connected. Since it was in the morning, the temperature was slightly warm due to the city's tropical location (Elghonaimy & Mohamed, 2019).

Furthermore, it is close to the sea. Owing to the warm weather in the morning, people prefer to be in the shaded area in front of the river, where airflow is abundant. However, the warmth at night will disappear; therefore, some unpleasant odors will spread, resulting in declining interest at night in the riverfront place than during the day. (Meteorological Services, 2022) Phenomenological bodily experience can deliver the impression of the site from different views and tastes, depending on the users (Eldardiry & Konbr, 2022).

d. The design strategies required to enhance the emotional experience

An emotional experience that evokes human feelings and intellectual response must provide a more satisfying influencing journey in the historic district. 'Indeed, social science research suggests that we would not even want to try, that emotions help us learn more effectively' (Carlsson, 2020). According to Linda Norris and Tisdale (2017), several design strategies can be adapted to define the space's physical environment. Therefore, as discussed earlier, it creates an emotional journey by planning the color, lighting elements, texture, smell, sound, and other details corresponding to its desire. In addition, consider embodying relative emotions within the displayed objects to elicit an emotional response and organize the displays according to a storyline that discusses the issue in sequences to create a sense of curiosity.

Moreover, there is a need to provide space for knowledge sharing between users. People tend to have expressive experiences in real stories and traditional folklore. 'Reading these stories in contributors' own words creates the sensation all the more critical and meaningful' (Linda Norris & Tisdale, 2013). This can also happen by involving people's voices in exhibitions by displaying multimedia devices.

e. Spiritual theory

Spiritual aspects include intra-, inter-, and transpersonal aspects. Spirituality is also interpreted as the core of who enters and affects human lives. It manifests in thinking and behavior in conjunction with the self, others, the universe, and Allah. All religions were practiced through worship. As religion is an approach to faith and worship alliances, it is where someone can express spirituality. Therefore, as a place of worship, a mosque builds itself emotionally and establishes relationships between human beings (Dewiyanti & Kusuma, 2012). It is essential to create intangible value for the Almighty. Psychologically speaking, experience comprises many psychological factors and is closely associated with cognitive functions, such as emotional attitude, imagination, intuition, understanding, and comprehension. Experience -based on deep knowledge and genuine feelings about things- is an emotional and meaning-producing activity. Performing ritual worship in a pleasant room atmosphere was favorable. Sincere rituals will show one's feelings and bring them to an atmosphere of emotion, sadness, regret, crying, happiness, and delight. Ultimately, it also provides an aesthetic experience that helps bring a person into a supportive worship space atmosphere and instills feelings and emotions (Al Khalifa, 2017).

f. The common faithful characteristics of the Mosques

The mosque is the most critical building for expressing Islamic religiosity and the combined identity of Muslim institutions. A mosque is a bodily expression of the widespread existence of Muslims and acts as a point of convergence for Islamic social and intellectual activities. Although mosques have evolved into elaborate architectural designs built in various styles, one condition of all mosques is based on the earliest model: a designation of space for the primary function of prayer. The early mosque served an equally important role, similar to thousands of mosques today: a mosque is a place where Muslims foster a collective identity through prayer and care for their daily concerns. A Muslim city generally has numerous mosques. However, only a few congregational or Friday mosques have obligatory prayers. As Islam extends outside the Arabian region, Islamic architecture is subjective because of the different architectural styles of adjacent countries. Not to mention, monumental mosques were continuously built-in cities in the Islamic world. Despite borrowing from diverse civilizations, certain standard features

became characteristic of most mosques and, thus, distinguished them from the sacred spaces of other religions and cultures. (Pecorino, 2010). The common characteristics of mosques are as follows:

- a. Usually, designers recommend directing the entire building towards the Qibla in the five daily prayers essential for every Muslim.
- b. You need to be cleaned in ritual terms; once you are clean, you can enter the sacred space of the mosque.
- c. It is recommended that the carpets are aligned to reinforce the orientation of the Qibla.
- d. Accessories are essential to put most of the things we can see here in the mosque—like the lamps, parts of a wooden minbar, Qur'an holder, and beautiful Iznik tiles, back into their original places.

Consequently, it is necessary to understand the spaces concerning the spiritual meaning of worshippers in mosques and how these spaces build their spiritual significance for worshippers. Spiritual values are considered essential because they can evoke a spirit that affects the balance of worshippers while using mosques (Dewiyanti & Kusuma, 2012). Thus, architects' primary goal in their designs is to deliver spiritual sensing to prayers to arrive at a successful mosque design. Spiritual sensing should be implemented in mosque components.

One of the successful examples is the mosque in New Mexico in 1981 by Hassan Fathy. Dar Al Islam mosque has a few structures built on 1357 acres. Most buildings are grouped and stand in harmony with the vast surrounding landscape (Dechaicha *et al.*, 2021). Under the brilliant New Mexican sky, this complex design considered the phenomenology theories and appeared as the sun moved throughout the day. Shadows appear and disappear, turning the walls into an ever-changing canvas (Rothstein, 2009).



Figure 6. Dar Al Islam Mosque in Abiquiu, New Mexico, in 1981 (Rothstein, 2009)

3. Methodology

After the Literature review, pilot interviews were done to investigate the research problem. Consequently, the research methodology was divided into two main stages based on a qualitative methodological approach, which was adopted as the research strategy to achieve a deeper understanding of the Spiritual Sensory within the mosque design. Therefore, a surveying technique was used to deduce worshippers' sensing. The survey was designed to define the experiences of worshippers while practicing religious activities during their prayer period. The survey comprises an understanding of worshippers and their worship through the detection of phenomenological theory. Subsequently, axial coding was performed to assess the causal relationships between the bodily experiences of worshippers within mosque spaces. Selective coding was performed to sort and reselect the results and draw conclusions from research findings. This phase helped provide a basic understanding of the spaces that helped shape the spirit of worship and support or disturb factors. The research examined three prominent mosques, considered famous and significant mosques in Bahrain. These mosques were selected to practice bodily experiences by researching teamwork and documenting their senses while using the mosque. Consequently, these data have analyzed the consideration of spiritual theory in the design by the worshippers' five senses to achieve spiritual sensing.

4. Bodily experience analysis in the case studies mosques

Interviews were conducted with worshippers, stockholders, and specialists who frequently visit mosques to investigate their bodily experiences. Most of these interviews showed that worshippers did not feel complete spirituality when using mosques. They said that the entire spiritual experience was incomplete. For example, 91% mentioned the lack of outdoor spaces in front of mosques. These spaces are significant because they are regularly used as preparation spaces for worshippers to move from a civic to a spiritual environment. Water structures (fountains) are one of Islamic architecture's most crucial design elements. 95% of the respondents indicated that water elements should be included in the mosque's design. They explained that the sound of water and smell gave them a unique feeling. Simultaneously, 74% showed a missing smell of "*bukhours*" in mosques. In contrast, the worshippers stated that the annoying odors came from a wet carpet and the smell of the toilet and garbage outside.

It should be noted that Hadiths also clearly stated that mosques are unacceptable for toilets or trash. This clearly shows the requirements of the distance and position of the shower and ablution place. 94% said that they missed the effects of greenery as a visual sensation in mosques. Most respondents explained touch sensations in many areas. The intimacy of mosque spaces is not as spiritual as expected. They missed the warmth of religious places. After reviewing the interview results, an analysis matrix was designed (Table 1). It was used for the evaluation stage of the three selected mosques. This stage consists of the analysis of three accredited mosques in Bahrain. The selection of Al-Fateh, King Khaled, and Zayani mosques obtained architecture awards. They have been highly appreciated by users and are considered famous mosques in Bahrain. (Al-Fozan, 2019) Therefore, the evaluation matrix evaluates the bodily experience of worshippers (the five senses) while designing indoor and outdoor spaces in terms of:

- a. The interior spaces' design elements are the Qibla, the ablution area, the Mihrab, the niche, the lamps, parts of a wooden minbar, and the Qur'an holder.
- b. Finishing materials: Flooring, walls and partitions, ceiling, furniture, and accessories.
- c. The landscape architecture design (Hard and softscape design elements).

a. Mosque 1: The Al-Fateh Mosque

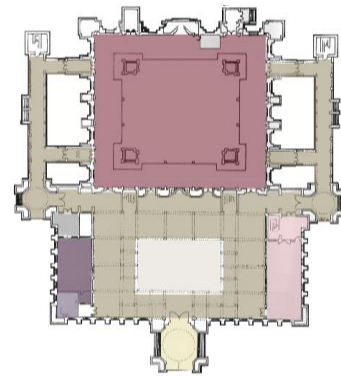
The Al-Fateh Mosque is the largest, with an area of 6,500 square meters in Bahrain, characterized by a mixture of contemporary architecture. It is located in Juffair, Bahrain, with a giant fiberglass dome on top of the Al-Fateh Mosque, weighing more than 60 tons. The mosque had five entrances. The main entrance is in the Middle East and leads to a large courtyard for the mosque. There was another entrance to the northern side of the mosque. The visitor's entry is to the mid-southern side of the mosque, leading to reception and the library. Furthermore, the visitor's entrance, there is another entrance for disabled people. Toward the western side of the mosque, there is a VIP entrance, mainly for the imam and muazzin. It is one of the best examples of a mosque with a courtyard in Bahrain, enclosed by arcades on all four sides. Concrete and fiberglass were used in the mosque.



Regional location of the Grand Mosque in Juffair (Google, 2022)



Image of the overall volume of the mosque



The Grand Mosque plan (Al-Fateh Mosque board)

Figure 7. The Grand Mosque in Bahrain is known as Al-Fateh Mosque

The typical architectural elements of a mosque that are connected to Muslim worship include:

- a. The Qibla is designed in a neutral color to avoid confusing the worshippers.
- b. The Mihrab is designed to avoid confusing the worshippers on the Qibla wall.
- c. A minbar (pulpit) is a pulpit in the form of a staircase on which the imam stands when delivering a sermon. The pulpit is usually situated to the right of the Mihrab.
- d. A minaret is a tall tower attached to or adjacent to a mosque and is a visual symbol of the mosque's presence.
- e. The praying area: The floors of the entrance spaces are fully carpeted with no decoration to avoid confusion. Lighting elements have a religious meaning. At the same time, different materials for the wall provide intimate colors. The design on the mosque's walls is inscriptions in Arabic calligraphy called Kufic script, an ancient type of calligraphy.
- f. Sahn: This is almost like a courtyard. The concept of unity is a significant factor

behind the courtyard in this mosque, which created a great introvert. The courtyard separated the noisy outer area from the main prayer hall and played a significant role.

The courtyard improved performance in terms of the following:

a. Function

- It provides lighting and ventilation.
- Courtyards are also used for prayers when the prayer hall is full.
- Social gatherings, such as standard speeches.
- They are learning & teaching the Holy Qur'an in the open space when the weather is pleasant.
- Islamic programs during the month of Ramadan and Eid.
- Privacy and secrecy are considered primary functions along with circulation to secure the worshipers' movements.
- The flooring pattern used in the mosque courtyard combines geometric shapes.

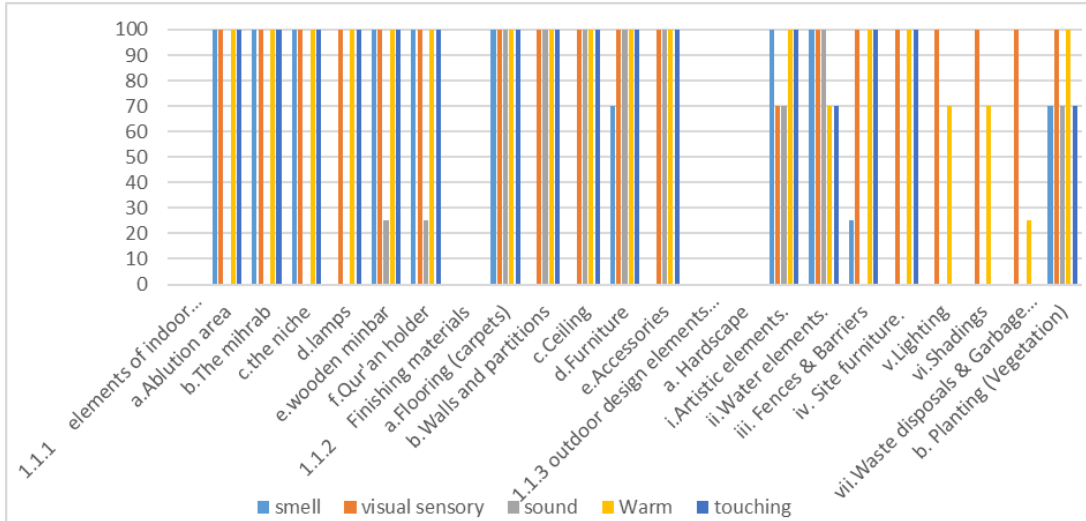
b. Environmental factors

- During the winter, the weather is generally pleasant, and cold air blows into the courtyard; therefore, it is an excellent time to perform activities there.
- When activities are carried out in the courtyard, the main prayer hall is noise-free, an advantage for people who wish to worship in a quiet area (Zhang, 2017).
- During the day, there was sufficient natural light in the courtyard. The courtyard has sufficient ventilation because it opens up the maximum use of the courtyard. (Rahbarianyazd & Raswol, 2018)

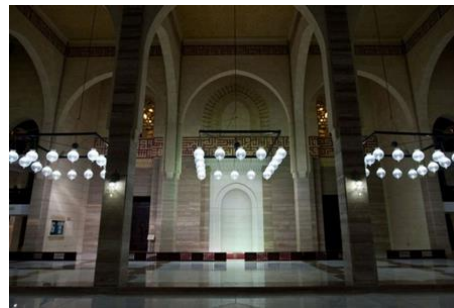
Table 1. Influence of design elements while applying spiritual sensory and bodily experiences

Case 1. The Grand Mosque	Spiritual sensory & bodily experiences in the design				
	Touching	Warm	Sound	Visual sensory	Smell
elements of the design of indoor Spaces design elements (Architecture design)					
a. Ablution area	●	●	NA	●	●
b. The Mihrab	●	●	NA	●	●
c. The niche	●	●	NA	●	●
d. Lamps	●	●	NA	●	NA
e. wooden minbar	●	●	□	●	●
f. Qur'an holder	●	●	□	●	●
Finishing Materials					
a. Flooring (carpets)	●	●	●	●	●
b. Walls and partitions	●	●	●	●	NA
c. Ceiling	●	●	●	●	NA
d. Furniture	●	●	●	●	■
e. Accessories	●	●	●	●	NA
Outdoor Landscape archit. design elements					
a. Hardscape					
i. Artistic elements.	●	●	■	■	●
ii. Water elements.	■	■	●	●	●
iii. Fences and barriers.	●	●	NA	●	□
iv. Site furniture.	●	●	NA	●	
v. Lighting.	NA		NA	●	NA
vi. Shadings.	NA		NA	●	NA
vii. Waste disposals & Garbage bins	NA		NA	●	NA
b. Softscape planting (Vegetation)	■	●	■	●	■

Suitable: ● Average: ■ Minor: □ Does not exist: □ Not applicable: NA



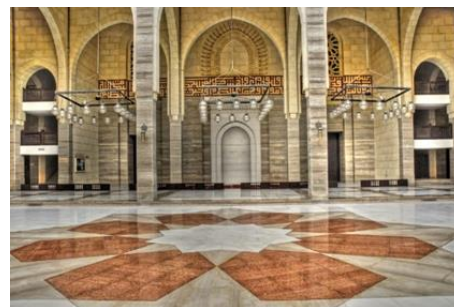
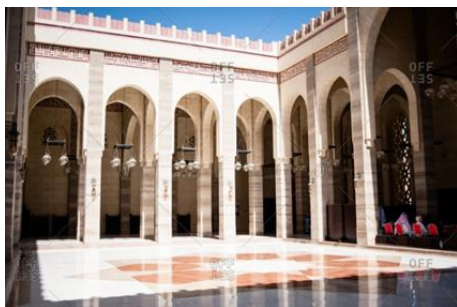
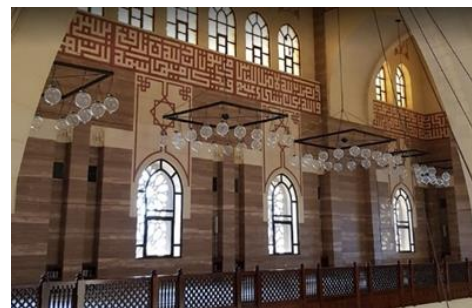
Qibla of the Mosque (the researcher)



The arcade at the back of the Sahn (the researcher)



The interior space of the mosque shows the elements of interior design (flooring, lighting elements, wood) (the researcher)



Images showing the courtyard of the mosque (Elghonaimy & Eldardiry, 2019)

Figure 8. The architectural design elements of the mosque

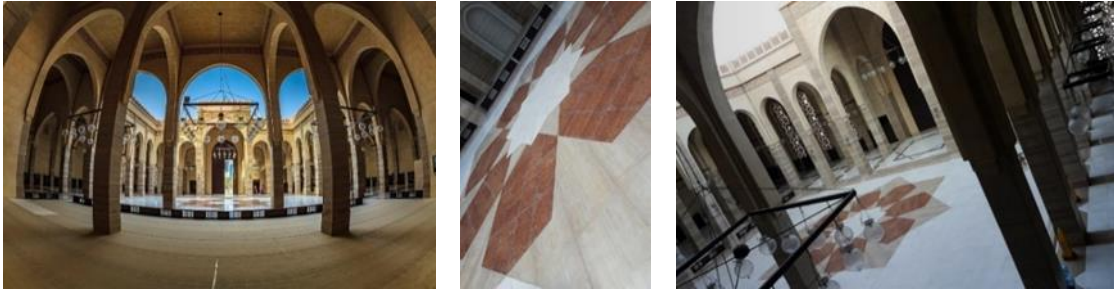


Figure 9. The courtyard finishing materials (the researcher)

c. Economic factors

- Courtyards provide the advantage of cooling air passing through and inside the mosque, thus reducing the need for air conditioners. Hence, it is economically advantageous in the winter months. Although air passes during the summer, air conditioning units must consider Bahrain's hot and humid climate.

d. Social factors

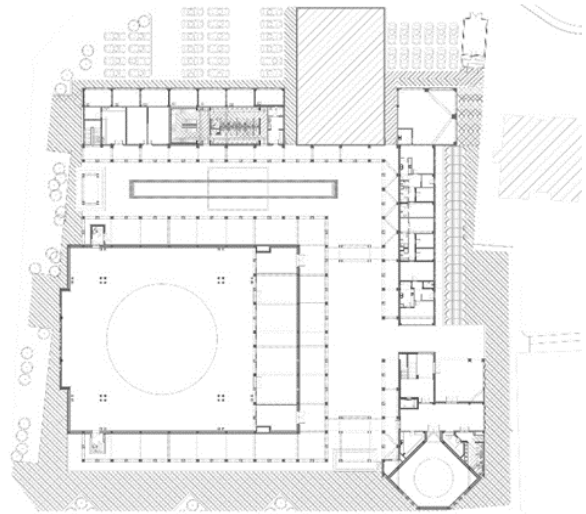
- Privacy is considered a significant advantage of a courtyard, as it separates the outer area and the main prayer hall.
- All social activities can be carried out comfortably in the courtyard, which is the private area of the mosque, and secured from all four sides as it is covered by the walls/arcades.
- One disadvantage is that this courtyard area is not very large and does not accommodate many people.

Each code gives a degree of consideration to the bodily experience in each mosque.

b. Mosque 2: King Khalid Mosque

The King Khalid Mosque, also known as the Um Al Hassam Mosque, was built by King Khalid and can accommodate 300 worshippers. It is located in Bahrain/Um Al Hassam district. The mosque has a nice view of Sha'ak Isa Bin Salman Road. It has different facilities, such as the Qur'an Teaching Center, library, and stores. In addition to the prayer hall and significant components of the mosque, it has an L-shaped courtyard surrounded by highly ornamented walls, and one corner is the link between the two spaces. A bridge connects the market area to the mosque. (Al-Fozan, 2019)

The courtyard is essential to provide spirituality to worshippers and is one of the oldest elements of mosque architecture. Architecturally, courtyards provide adequate ventilation to mosques. It also helps prepare the worshippers' mood for the mosque's presence before entering the praying hall. It is a transition area for worshippers from an active to spiritual life.



The location of the King Khalid Mosque. (Al-Fozan, 2019)



Images of the King Khalid Mosque for the main elevation (the researcher)

Figure 10. King Khalid Mosque is known as the Um Al Hassam Mosque

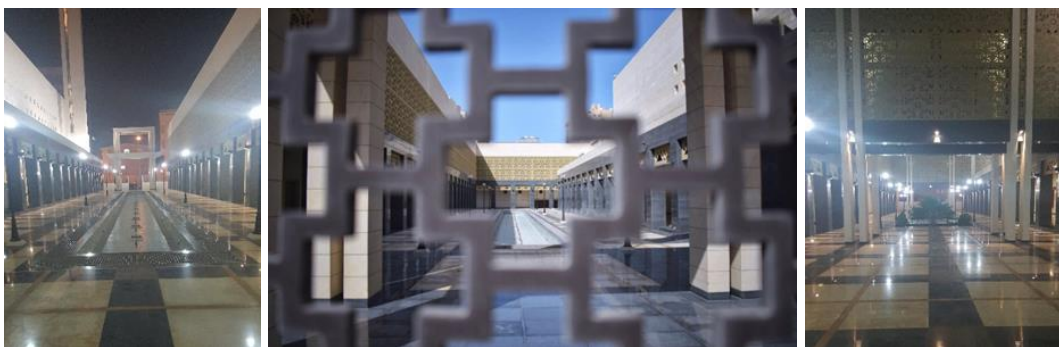


Figure 11. A view of the courtyard (the researcher)



Figure 12. The panorama photo shows the façade and the large dome covering the praying hall (the researcher)



Figure 13. The flooring design used three different types of materials (the researcher)

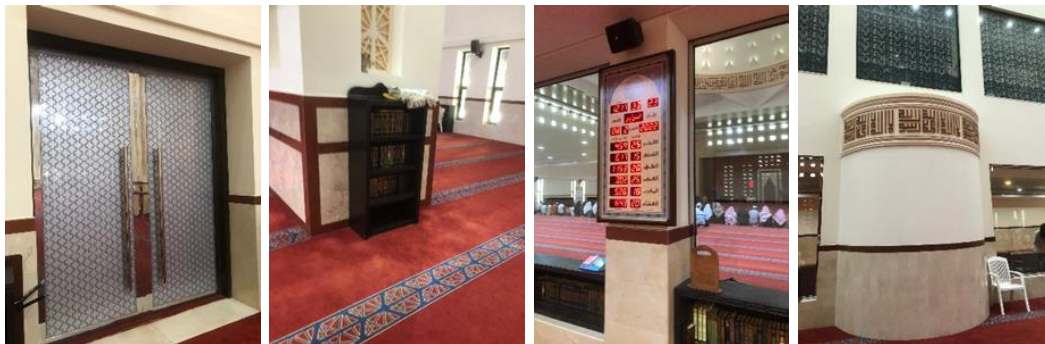


Figure 14. The accessories and decorative design elements influence the spiritual, sensory, and bodily experiences (the researcher)

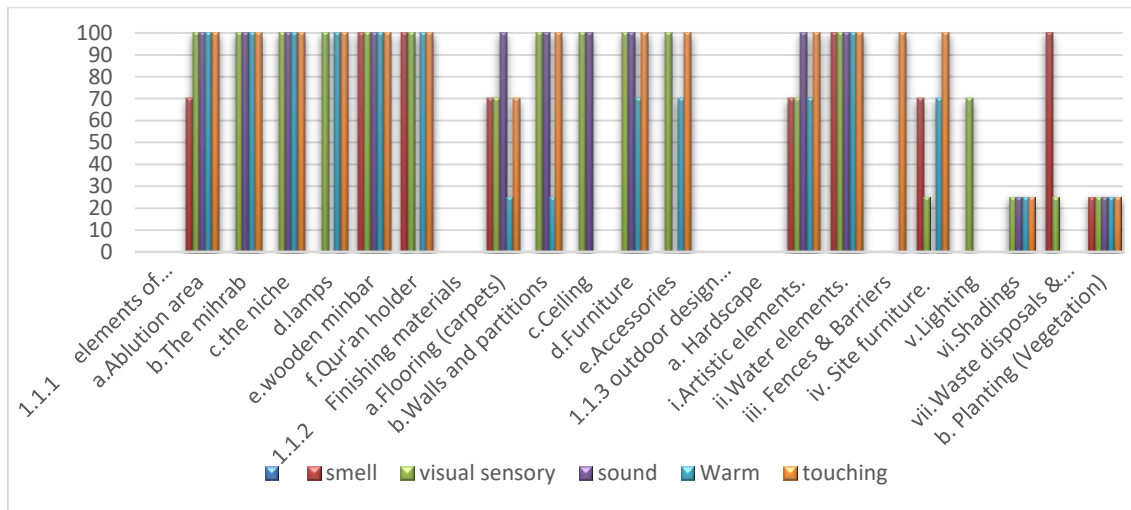


Figure 15. Lighting elements are used in outdoor spaces and fountains in mosques (the researcher)

Table 2. Design elements influence the spiritual, sensory, and bodily experiences

Case 2. King Khalid mosque	Spiritual sensory and bodily experiences are considered in the design.				
	touching	Warm	sound	visual sensory	smell
elements of the design of indoor spaces design elements (Architecture design)					
a. Ablution area	●	●	●	●	■
b. The Mihrab	●	●	●	●	NA
c. the niche	●	●	●	●	NA
d. lamps	●	●	NA	●	NA
e. wooden minbar	●	●	●	●	●
f. Qur'an holder	●	●	NA	●	●
Finishing materials					
a. Flooring (carpets)	■	□	●	■	■
b. Walls and partitions	●	□	●	●	NA
c. Ceiling	NA	NA	●	●	NA
d. Furniture	●	■	●	●	NA
e. Accessories	●	■	NA	●	NA
outdoor design elements (Landscape architecture)					
a. Hardscape					
i. Artistic elements.	●	■	●	■	■
ii. Water elements.	●	●	●	●	●
iii. Fences and Barriers.	●	NA	NA	NA	NA
iv. Site furniture.	●	■	NA	□	■
v. Lighting.	NA	NA	NA	■	NA
vi. Shadings.	□	□	□	□	NA
vii. Waste disposals & Garbage bins	NA	NA	NA	□	●
b. Softscape planting (Vegetation)	□	□	□	□	□

Suitable: ● Average: ■ Minor: □ Does not exist: □ not applicable: NA



The flooring design used four different types of materials for the floor covering. Granite tiles (Noraplan Unita 6450), marble tiles (Calacatta Extra), and (Alpenina) were used with glossy finishes and ceramic tiles (Serie Jeans PO Barbados). These three colors created harmony between the praying hall and the courtyard. People living near the mosque are daily users. An interview was conducted with some of the worshippers, asking them about the effects of the courtyard. The responses summarized that the courtyard area acted as a link between the different functions of the place. It created a separation between the market area and the prayer hall, which helped them feel that they were leaving everything out and going to do their prayer. In the lighting design, three different types

of lights are used in the outdoor spaces of the mosque: iron cast with glass lighting, one of the most popular in Bahrain. A fully shielded wall-pack spotlight was placed on the column to illuminate the pathways.

Furthermore, the lighting used for the fountain was aluminum isolated with a plastic glass LED. Water in mosques is crucial to the fountain, especially in prominent mosques. Even for courtyards, water is one of the central elements. It is in front of the mosque's main entrance, instilling a spiritual feeling in the courtyard. The sound of the water movement creates a different atmosphere for the worshippers

c. Mosque 3: The Rashid Al Zayani Mosque

The Rashid Al Zayani Mosque was located in Qalali, Bahrain, and was completed in 2015. It is located on a plot area of 4,800, with a total built-up area of nearly 3,000 sq.m; the mosque adds significant urban qualities to the community of the new Muharraq. It is an establishment for worship and accommodates majlis, classrooms, and a community center, operating at different times of the day. The unique features of this mosque include Turkish-style pencil minarets, domes, and half domes, with beautiful calligraphy of Qur'an verses adorning the interior, a forecourt, and a fountain enveloped by vaulted arcades tallest Mihrab displaying the direction of the Qibla. Additionally, a particular retail ribbon with eight outlets was provided at the far end of the parking lot.

The returns from this building are to be utilized for mosque supervision, ensuring that it is self-funded and sustainable (Engineering, 2015). Bahrain's imposing of the new Rashid Al Zayani Mosque takes a classic form and uses it grandly. The mosque had a capacity of up to 1230 worshippers. A magnificent 16-meter diameter composite dome, beautifully completed in bronze, included the main prayer hall, a prayer place for women, a courtyard, a Majlis for special events, and six classrooms. The mosque was envisaged as a community hub with shops and apartments (Zayani, 2014).



Figure 16. The location of Rashid Alzayani Mosque (Google, 2022)



Figure 17. The main approach and the enormous overall volume of the mosque (the researcher)



Figure 18. The unique features of this mosque include Turkish-style pencil minarets (the researcher)

Table 3. Influence of design elements while applying spiritual sensory and bodily experiences

Case 3. Rashid Alzayani Mosque	Spiritual sensory and bodily experiences in the design				
	touching	Warm	sound	visual sensory	smell
elements of the design of indoor spaces design elements (Architecture design)					
a. Ablution area	●	■	■	●	●
b. The Mihrab	●	●	NA	●	NA
c. The niche	●	NA	NA	●	NA
d. Lamps	NA	NA	NA	●	NA
e. Wooden minbar	●	●	NA	●	NA
f. Qur'an holder	●	●	NA	●	●
Finishing materials					
a. Flooring (carpets)	●	●	●	●	●
b. Walls and partitions	●	●	●	●	●
c. Ceiling	NA	NA	●	●	NA
d. Furniture	●	■	●	●	●
e. Accessories	●	●	●	●	■
outdoor Landscape architecture design elements					
a. Hardscape					
i. Artistic elements.	●	■	●	●	●
ii. Water elements.	●	●	●	●	●
iii. Fences and barriers.	□	□	□	□	□
iv. Site furniture.	●	■	NA	●	●
v. Lighting.	●	□	NA	●	●
vi. Shadings.	□	□	□	□	□
vii. Waste disposals & Garbage bins	□	□	□	□	□
b. Softscape planting (Vegetation)	□	□	□	□	□

Suitable: ● Average: ■ Minor: □ Does not exist: □ not applicable: NA

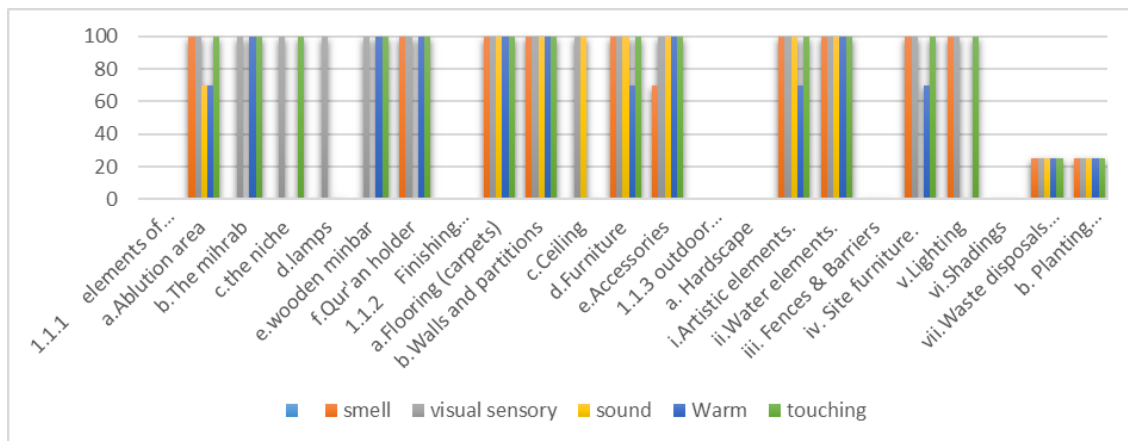




Figure 19. The forecourt and a fountain enveloped by vaulted arcades are the tallest Mihrab (the researcher)



Figure 20. The domes and half domes with attractive calligraphy of Qur'an verses adorn the interior (the researcher)

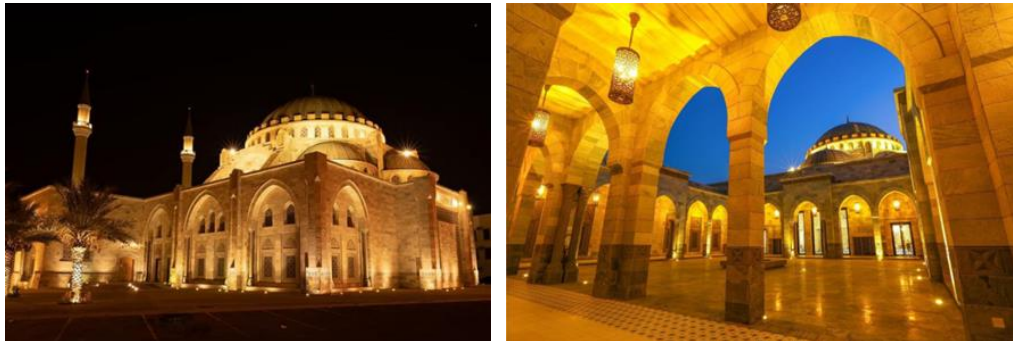


Figure 21. Lighting design shows prestigious and spiritual sensing for the overall volume of the mosque and the forecourt (the researcher)

5. Discussion

a. The mosque as the primary place:

The three mosques characterized by high design levels of mosque architecture were chosen for the study. The selected interviewees were randomly interviewed as a place of worship to evoke personal spirituality. The results of the analysis were not significantly different. It emphasized that A mosque can generate successful value through spiritual worship. The interviewers mentioned that after experiencing the worship ritual in this mosque, every one of them felt a deep spiritual meaning compared to other mosques they visited in other places, which made them feel deep and unique spiritual feelings. They

showed their intention to return and practice religious activities again. The level of spiritual feeling in the mosque environment has made the interviewers feel free to worship peacefully. The appropriate main design should satisfy the people who also need solitude and alienation to establish private communication with Allah. This sense of being alone frees worshippers from confiding, complaining, praising, and pleading their hearts. Spiritual sensations create a more consequential ambiance of solitude and contemplation, where light and quietness build spiritual sensing. However, a mosque is a public space that creates intimate thinking and atmosphere (Korkmazer *et al.*, 2019).

b. Mosque ambiance supporting factors

Visually, the mosque form is a dominant factor in a supportive atmosphere to determine the value of spirituality, as illustrated by Arg (1986), Lee (2002), and Cold in Horvath (2010). The overall form and interspaces were the most validating factors, as people saw from a distance first when entering the neighborhood. Unity in the shape of the mosque is the prevailing choice, as evidenced by the fact that the spiritual occurred because the atmosphere of the mosque was able to evoke a positive emotional atmosphere. Furthermore, the atmosphere is created by artificial lights, which give emotion to the grandeur aspects of the mosque. Furthermore, great emotions are instilled in worshippers' sensations. This is supported by the time factor, where the dominance of morning and evening prayers provides the most significant contribution, as indicated by the letters of the Qur'an and hadith. Since the community believes in the superiority of merit, prayers at these times sensed higher quality. Additionally, the factors of silent in the morning and evening encourage the gathering to worship. More free time away from mundane jobs, provided a sense of peace.

Furthermore, Ramadan had a religious effect due to the atmosphere that it created throughout the city. In the end, the spirit of worshippers emerges spontaneously and advances in quantity and quality. The heart is a factor that cannot be forgotten. Genuine and sincere preferences obtain higher usefulness and quality levels. These differences did not impact readiness for religious understanding. Anyone senses that spiritual aspects arise when there is a firm's intention.

c. Spatial and visual experience factors as spiritual values

a. Smell: The analysis illustrated that the unpleasant and pungent smell factor is very annoying. This follows the hadith, which states that the Prophet Muhammad recommends wearing perfume during a visit to the mosque. This letter implies a recommendation to maintain a pleasant smell and use good fragrances, but exaggeration is not required

b. Vision: The interior decorations that potentially distract the attention of worshippers can be listed as follows:

- i. Color: Contrasted colors had a profound impact on respondents' concentration levels. Dark colors are also opposed, as they provide the appearance of a different feeling. As explained above, green provides a sense of coolness but can turn the room into a frightening atmosphere if the gradation is too dark.
- ii. Motives of ornament: Although geometric and arabesque motives on carpets were designed following Islamic rules, they tend to incite specific fantasies and distract the concentration of female respondents. Non-motive and single-colored

carpets are preferable. Stained carpets should be cleaned immediately, as they could incite specific fantasies in female congregation members.

- iii. Hijab height: The hijab tends to block the vision of female respondents, particularly if it is made of opaque materials and is relatively high in place. Female worshippers prefer that the hijab is made of perforated material and is half-transparent so that they can still observe the gestures of the imam.
- iv. Calligraphy: Calligraphy (Arabic calligraphy) is an artistic practice on walls or, on the Arabic script, or by extension, bookmaking in the lands, reflecting the shared Islamic artistic legacy. Muslims have long used calligraphy in their respective languages. They used it to represent the name of ALLAH because not possible to represent the name of ALLAH using images. The calligraphy is verses from the Qur'an that provide contemplation on the meaning and provide the worshiper with the occasion and opportunity for remembrance. The existence of calligraphy can be pretty disturbing for worshippers who are literate in Arabic. They are tempted to read it repeatedly, especially if it is placed on the Mihrab. Worshippers believed that calligraphy should be presented only in the Qur'an.
- c. Audio: The analysis showed that noise also dramatically affected the spiritual atmosphere. Both indoor and outdoor activities cause noise. The indoors are through congregations performing activities outside of regular worship, which is disturbing. This is mainly due to the diverse functions of the mosque within a limited space. Outdoors is due to vehicles from outside, which are noise from other congregations.
- d. Touching: The analysis shows that the finishing materials are essential in detecting roughness and softness when the designer needs them. For example, the rocks outdoors reflect life's hardness, whereas the marble's softness appears when the worshipper deals with inner spaces. Therefore, designers will provide a sense of intimate space for worshippers in the mosque and a sense of touching the materials by their appearance.

6. Results

The significance of the study and results are presented in the spiritual sensory design matrix, which shows that implementing the design elements that encourage the instilling of bodily experiences while designing the mosque will lead to a deep spatial feeling in the worshippers. The study shows that the five senses of human beings (smell-vision-sound-warmth-touch) in the design are essential to instill complete spiritual feelings in the worshippers. The analysis shows that the designers do their job successfully when applying the synergistic effects between worshippers' bodily experiences and the mosque's design elements. The literature reviews and the interviewer's opinions show that without applying the sense, there were many conflicts in the case of not understanding the profound relationship between the design elements for mosque architecture and users. The aspects of indoor design and architectural design, the finishing materials of the spaces, and the elements of landscape architecture combine directly to affect the experiences of worshippers in the mosque.

7. Conclusions

The mosque is the most critical building for expressing Islamic religiosity and the combined identity of Muslim institutions. It is a bodily expression of the widespread

existence of Muslims and acts as a point of convergence for Islamic social and intellectual activities. The evaluation matrix of the design elements helped evaluate the spiritual sensory aspects of the mosque design. This matrix will help designers create a successful layout that can create worshippers a spiritual sense of the space. This matrix of design elements respects the users' intentions in indoor and outdoor mosque spaces. Consider the bodily experience of the worshippers for the area (their five senses) concerning the architecture of the mosque characteristics and the design of landscape architecture.

Acknowledgment

The author acknowledges the supporting teamwork for their aide provision with this research.

References

- Al-Fozan. (2019). King Khaled Grand Mosque. Khobar, Saudi Arabia: Abdullatif Al Fozan Award for Mosque Architecture. Retrieved Jan 30, 2022, from <https://mosqpedia.org/en/mosque/167>
- Al-Khalifa, H. (2017). *The Friday mosque of the Arabian Gulf: defining its spatial and formal languages-1975-2010* (Doctoral dissertation, Cardiff University).
- Bahauddin, A., Jaki, M. (2022). The 'Sense of Place' Creation through Cultural and Architectural Preservation of Timber Construction of Malay Mosque Architecture. *International Journal of Asian-Pacific Heritage Studies*.
- Basha-Jakupi, A., Osmani, K., & Hoxha, E. (2021). Public art the catalyst for the creation and regeneration of public spaces—case study Prishtina, Kosovo. *New Design Ideas*, 5(2), 124-134.
- Canby, S. (2000). The Mosque. Retrieved Jan 24, 2022, from The Metropolitan Museum of Art: <https://www.metmuseum.org/learn/educators/curriculum-resources/art-of-the-islamic-world/unit-one/the-mosque>
- Carlsson, R. (2020). How to get an emotional response from museum goers.
- Dechaicha, A., Daikh, A., & Alkama, D. (2021). Monitoring and Landscape Quantification of Uncontrolled Urbanisation in Oasis Regions: The Case of Adrar City in Algeria. *Journal of Contemporary Urban Affairs*, 5(2), 209–219 <https://doi.org/10.25034/ijcua.2021.v5n2-5>
- Dewiyanti, D., Kusuma, H.E. (2012). Spaces for Muslims spiritual meanings. *Procedia-Social and Behavioral Sciences*, 50, 969-978.
- Eagleton, T. (1983). *Literary theory: An introduction*. Oxford: Basil Blackwell.
- Eldardiry, D.H., Konbr, U. (2022). Using Phenomenological Theory for Sustainable Renovation of Historical Open Spaces in Bahrain. *International Journal of Sustainable Development & Planning*, 17(2), 559-568. <https://doi.org/10.18280/ijdsdp.170221>
- Elghonaimy, I., & Eldardiry, D. (2019, November). The Revival of Courtyard Consolidation in Mosque Architecture. In *The 2nd International Conference on Mosque Architecture* (Vol. 1). <http://alfozanaward.org/>
- Elghonaimy, I., Al-Haddad, M.H. (2019, April 15). Towards reviving the missing noble characteristics of traditional habitual social life: “Al-Farej “In Kingdom of Bahrain. *International Journal of Contemporary Urban Affairs IJCUA*, 3(2), <https://doi.org/10.25034/ijcua.2018.4699>
- Elghonaimy, I., Mohamed, W. (2019). Urban Heat Island in Bahrain: Urban Perspective. *Buildings journal*, 9(4), 96. <https://doi.org/10.3390/BUILDINGS9040096>
- Engineering., G.H. (2015). Rashid Al Zayani Mosque. Manama, bahrain: Gulf House Engineering. Retrieved Jan 30, 2022, from <https://www.ghe.com.bh/rashid-al-zayani-mosque-galali-bahrain-project>

- Fouche, F. (1993). Phenomenological theory of human science. (In J. Snyman (Ed.), Ed.) *Conceptions of Social Inquiry*, 87-112.
- Frishman, M., Khan, H. (2002). *The Mosque: History, Architecture, development and regional diversity* (2nd ed.). London: Thames and Hudson.
- Groenewald, T. (2004). A phenomenological research design illustrated. *International Journal of Qualitative Methods*, 3(1). Retrieved from http://www.ualberta.ca/~iiqm/backissues/3_1/pdf/groenewald.pdf
- Groenewald, T. (2004). A phenomenological research design illustrated. *International journal of Qualitative Methods*, 3(1), 42-55. <https://doi.org/10.1177/160940690400300104>.
- Job, S., Elghonaimy, I. (2022). Experiencing Public Parks through Phenomenology: Case of Riffa Walk Park, Bahrain. *Civil Engineering and Architecture*, 10(1), 224-235. <https://doi.org/10.13189/cea.2022.100119>
- Korkmazer, E., Bektas, Y., Aykanat, M., Jevdzade, S., & Yücel Caymaz, G.F. (2019). Study of Light Pollution in Urban Lighting in Nisantasi Example. (D.H. Nia, Ed.) *Journal of Contemporary Urban Affairs*, 3(2), 8–15. <https://doi.org/10.25034/ijcua.2018.4696>
- Linda Norris, L., Tisdale, R. (2013). Creativity in Museum Practice. Retrieved from Linda Norris and Rainey Tisdale: <https://creativityinmuseumpractice.wordpress.com/>
- Meteorological Services. (2022, May 9). Retrieved May 9, 2022, from Ministry of Transportation and Telecommunications Kingdom of Bahrain: <https://www.mtt.gov.bh/content/meteorological-services>
- Mosque. (2013). Merriam-Webster.com Dictionary, 1. Retrieved Jan 25, 2022, from Merriam-Webster: <https://www.merriam-webster.com/dictionary/mosque>
- Naghizadeh, M., Goodarzisoroush, M. (2011). Explaining the Criterion to assess the Islamic architecture and city 1 A survey in an overt and covert reality in Islamic architecture and city. *Ijaud Journal of Architecture and Urban Development*, 1(2), 45-50. <https://doi.org/20.1001.1.22287396.2011.1.2.5.9>
- Pecorino, P.A. (2010). The Mosque. Retrieved from Lumenlearning: <https://courses.lumenlearning.com/atd-herkimer-worldreligions/chapter/the-mosque/>
- Rahbarianyazd, R. (2017). Sustainability in Historic Urban Environments: Effect of gentrification in the process of sustainable urban revitalization. *Journal of Contemporary Urban Affairs*, 1(1), 1-9. [https://doi.org/10.25034/1761.1\(1\)1-9](https://doi.org/10.25034/1761.1(1)1-9)
- Rahbarianyazd, R., Raswol, L. (2018). Evaluating energy consumption in terms of climatic factors: A case study of Karakol residential apartments, Famagusta, North Cyprus. *Journal of Contemporary Urban Affairs*, 2(1), 45–54. <https://doi.org/10.25034/ijcua.2018.3658>
- Rothstein, S. (2009, July 23). Hassan Fathy - a mosque in New Mexico. Retrieved 3 2, 2023, from <https://artfoundout.blogspot.com/2009/07/hassan-fathy-mosque-in-new-mexico.html>
- Shafik, Z., El-Hussiny, M. (2019, 12 1). Re-visiting the Park: Reviving the “Cultural Park for Children” in Sayyeda Zeinab in the shadows of Social Sustainability. *Journal of Contemporary Urban Affairs*, 3(2), 84–94. <https://doi.org/10.25034/ijcua.2018.4704>
- Shanaa, L. (2021, November). The feasibility of using a phenomenological approach to explicate the experience of being-in-community: experience of reviving the marine heritage in Bahrain. *BAU Journal - Creative Sustainable Development*, 3(1) <https://doi.org/2664-9446>
- Shirazi, M. (2009). Architectural Theory and Practice, and the Question of Phenomenology. *Published PhD dissertation, der Brandenburgischen Technischen Universität Cottbus, Erlangung.*
- Spencer, M. (2018, Feb 6). What is spirituality? A personal exploration. Retrieved 10.01.2023, <https://positivepsychology.com>
- Zayani, A. (2014). Rashid Al Zayani Mosque, Bahrain. Manama, Bahrain. Retrieved Jun 30, 2022, from <http://www.bfginternational.com/architecture-and-infrastructure/projects/rashid-al-zayani-mosque-bahrain>
- Zhang, D. (2017, 12 1). Courtyard Housing in China: Chinese Quest for Harmony. *Journal of Contemporary Urban Affairs*, 1(2), 38–56. <https://doi.org/10.25034/ijcua.2017.3647>