

The Architecture of Mosque Integration of Decoration, Functionality, and Spirituality: An Overview of Najd Region Mosque Architecture

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ABSTRACT

Mosques are among the most advanced forms of religious architecture. With the Muslim community's rapid expansion through modernity along with clearly defined Islamic life needs activities, setting aside an enclosed area in small settlements or large towns became necessary for established communal worship. The purpose of this study is to analyze and develop the structure, structural decoration, and material and design choices made by mosques during the traditional period of Najd, Saudi Arabia's central region. While mosque architecture during the traditional Najdi Muslim period demonstrates its religious identity, as is frequently noted, secular architecture's ideas are not spiritually motivated in a cosmic sense. Indeed, the architectural concept and material selection and the functional and aesthetic uses of an object all contribute to determining what it expresses. A process that incorporates standard materials, skilled labor, innovative ideas, and socioeconomic and geographical factors may be used to construct any magnificent architecture. Thus, this study provides an overview of the historical architecture of the current syntax of "Najd Mosques Architecture" to facilitate knowledge and comprehension when designing contemporary mosques that incorporate elements of history and culture, religion, the environment, and sustainability.

Keywords: Mosque; Syntax; Traditional; Najd; Saudi Arabia

INTRODUCTION

Heritage is the accumulation of a society's experience in its dialogue with nature, the mutual experience between a person and his or her surroundings, whether at the individual or group level. Heritage incorporates every concept related to human history in the experiences of a person's past, their life in the present, and their outlook on the future. Civilization and cultural heritage are the possessions and treasures bequeathed on future generations by the ancients. They are the material and immaterial bonds that form nations and peoples. Through civilization and cultural heritage, a society derives its roots and its originality or uniqueness. Civilization and cultural heritage are in continuous development over time, preserving a society's identity and originality.

Architectural urbanism is one of the basic elements of heritage. It is distinguished from other elements of heritage by its physical presence, thus resurrecting the civilizations of previous generations in a direct and unquestionable manner (Heath, 2009). Architectural urbanism also recognizes and makes note of a continuum of cultural, social, and religious experiences and values across generations. Therefore, architectural urban heritage is one of the fundamental manifestations of human development throughout history, and an expression of the capabilities that humanity has achieved in overcoming the surrounding environment and defining spaces to meet the desired goals of inhabitants.

The primary role of any mosque is to unite the Muslim community around the world in its worship of Allah (God, YHWH). After setting up a mosque in the city of *Al Madinah Al Munawwarah* ("the enlightened city", or more simply, *Madinah*, "The City", previously named *Yathrib*) to serve the newly formed Muslim community, Prophet Muhammad (PBUH) began this custom. For many centuries, no other religious or spiritual institution has been able to rival the mosque's purity, sanctity, and allure in the world. It is a place where Muslims contemplate their relationship with Allah, and a place where they can pray and reflect (Raeisian, and Badreh, 2014).

Over time, there are a variety of ways in which Muslim society has made use of mosques, aside from their primary religious function. To put it another way, mosques went from serving simple, individual roles to serving more complex, institutional ones (Omer, 2012). Muslims' daily lives are so intertwined with their religious practices that Islamic society, which bases its decisions on Islamic principles, has had to consolidate the roles of mosques in order to meet the demands of both the religious and the political spheres (Saniei, and Delavar, 2012). Muslims and non-Muslims alike benefit from mosque architecture because it provides a platform for interfaith communication and fosters Muslim unity (Asif, and Utaberta, 2016). Mosques play an important role in helping to resolve social issues and build a more cohesive community, especially in areas where Muslims make up the majority of the population (Hillenbrand, 2004).

Increasing levels of urbanization and population growth have led to a wide range of physical, social, economic, and even moral challenges for urban communities. Because of this, urban entities such as mosques must be assessed in light of the current environment. Thus, this research aims to explore the various traditional Najdi Mosque designs to assist modern approaches for appropriate use by and application to modern Najdi Mosque design.

Here, it is important to note that the basic elements of early mosques, such as the trellis covering the part of the mosque next to the qibla wall, and the *sufra* around a place in the

mosque and the pulpit, remained intact. The historical mosques have maintained a consistent pattern, with only minor changes over time, if we take the time to study all their components. In this regard, a comparative study of Najdi historical/traditional mosques will be conducted in this study, which will help us understand the region's mosque architectural syntax.

THE TRADITIONAL MOSQUE

Traditional mosques include mosques built in accordance with local conditions, such as their geographic location, their climatic environment, and other aspects of their local area. Four main factors influence traditional architecture in Saudi Arabia:

- the climate,
- locally sourced building materials,
- already-existing skill sets, and
- the sub-cultural background of the builder.

Typically, traditional architecture refers to weather-sensitive dwellings in the Arabian Peninsula. Key features of traditional architecture include creative solutions for rainwater drainage, multiple openings to enable ventilation, and wall carvings or openings for cross-ventilation. Traditional architecture makes use of locally available building materials. In the Najd region, these include timber, tamarix tree log beams, stone, clay, and thatch. Najd region architecture has a unique style that includes openings, carved wall panels, an arcade element, and a well-designed "mihrab" with intricate floral gypsum motifs. Therefore, the observer may distinguish Najdi architecture from the architecture of other Saudi Arabia regions by the Najdi architecture's highly detailed craftsmanship that expresses the uniqueness of the Najdi architectural style.

MOSQUE CASE STUDIES

It is uncommon to find mosques in the Najdi region that are autonomous or separate from the context of their surroundings. Rather, traditional mosques in this region are frequently incorporated into the urban landscape. Additionally, we could say that the mosque is the origin, or starting point, of the development of urban communities and that it forms the center of these communities, setting the architectural tone for its surroundings: the architecture of the built environment that surrounds each mosque takes its architectural cue from the mosque. For the purpose of analyzing and comprehending the mosque architectural syntax in the Najd region, this study selected three Najdi Mosque case studies as its subjects in Figure 1.

The Mushrafa Mosque (case 1) in the town of Raudat Sudair in Al Majma'ah, and the Husseini Mosque (case 2) in the town of Shaqra in Riyadh are two of the most significant mosques in the region. There is also a "friday" mosque in residential neighborhoods of each town that serves multiple residential neighborhoods. Smaller mosques surround these friday mosques. The smaller mosques serve population groups that reside within the residential neighborhoods. One example of this is the (3) Al-Dwaihra Mosque, which is located in the Al-Bujairi neighborhood of Diriyah in Table 1.

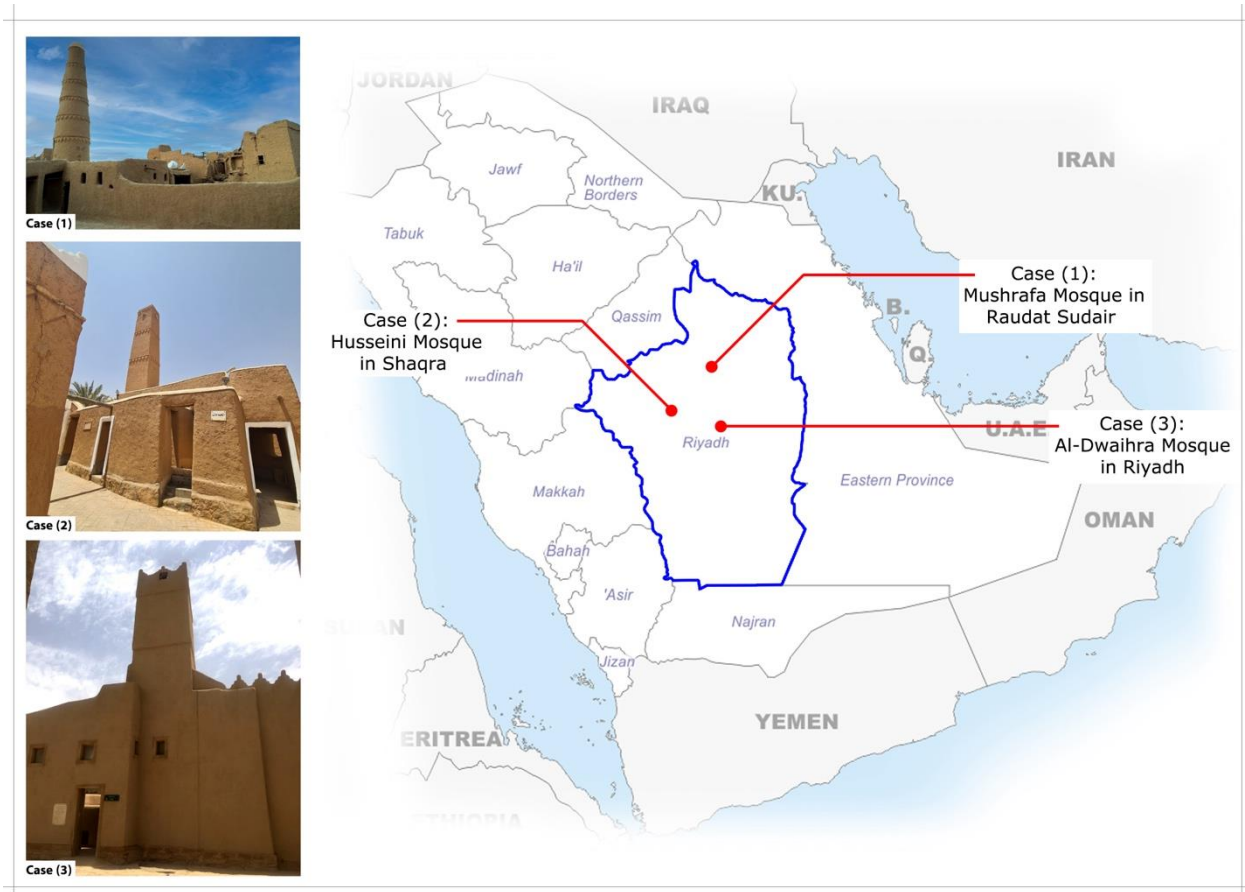
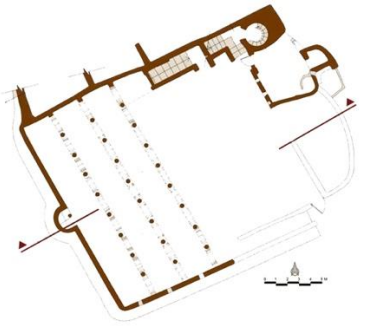
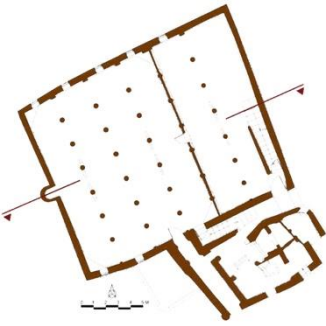
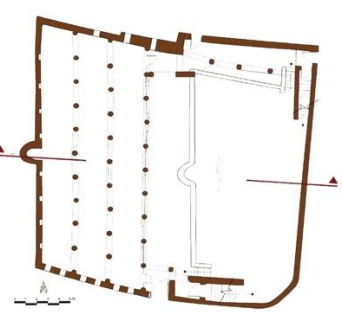
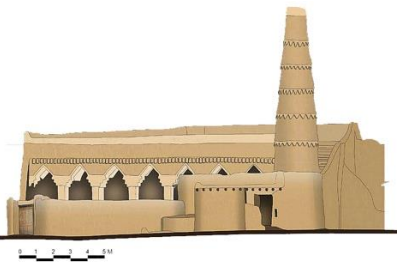
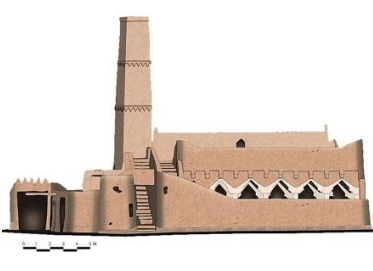
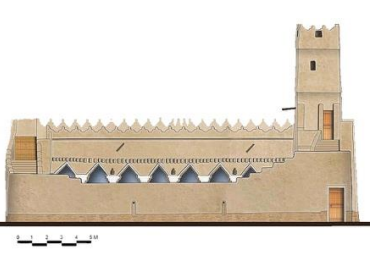





Figure 1. The location of the three mosques study cases.

The historic Mushrafa Mosque can be found in Raudat Sudair, Majma'ah Governorate, Riyadh. The mosque has a history that dates back to the early twelfth century A.H. (*Anno Hegirae*, or eighteen century A.D., *Anno Domini*). The mosque is notable for its Najdi-style construction, and it is considered one of the most prominent historical buildings in Raudat Sudair; however, due to its significant historical importance and for safeguarding the mosque does not currently offer prayers.

The Husseini Mosque is placed in Riyadh's Shaqra Governorate. The establishment of the mosque also dates to the twelfth century A.H. The mosque is notable for its Najdi-style construction. The mosque is one of the most prominent historical buildings in Bashqara's old town, and it is still in use and open to communal prayer. The Al-Dhawairah Mosque is located in the Diriyah Governorate's Al-Bujairi neighborhood. The mosque's history dates to the establishment of the first Saudi state. The mosque is distinguished by its distinct Najdi style, and it is currently in use and open for prayer.

Table 1. The study three traditional Najdi mosques. Source: Redeveloped from (Saudi Commission for Tourism and Heritage, 2019).

Mushrafa Mosque	Husseini Mosque	Al-Dwaihra Mosque
		
		
		

METHODOLOGY

Understanding the processes that generate mosque architectural form in Saudi Arabia and its impacts on heritage value present significant methodological challenges due to the underlying interdisciplinary nature of the topic. These challenges are compounded by the fact that the topic itself is interdisciplinary. As a result, the present research utilized a multifaceted methodology that includes an ethnographic approach, as well as a literature search, an investigation of archival databases, and an examination of photographs and maps.

MOSQUES AND THEIR INFLUENCE ON THE NADJI BUILT FORM

In addition to its role as a place of worship, the mosque is an important architectural element that contributes to Najd's overall built form. It is, by far, the most important religious building in Islam; in addition to being a place for Muslims to come together in worship of Allah, it also fulfills a variety of other functions for a Muslim community (Mizan & Anuar, 2005). The placement of a mosque within a built form influences its shape and form as well as influencing the shape, form, and usage of the buildings that are adjacent to it. As a result, the mosque is an essential component of the traditional Najdi built environment, which plays an important role in the organization of the relationship between the public and semi-private spheres. The fact that a mosque may serve both religious and secular purposes while still maintaining the spatial order that separates the two spheres demonstrates how well the local community understands and values both the religious and socio-cultural functions of mosques. Even though the placement of a mosque as a physical form within the built environment is done with care to ensure a reasonable walking distance for all inhabitants, a number of forces at the urban level influence the production of mosques.

Mosque architects consider the social needs of the community in developing a mosque and its components in such a way that the mosque may serve a variety of purposes at various times. Consequently, whether a mosque is large or small in size, it not only serves to accommodate a large number of people praying to Allah or God, but it also serves as a learning space for the community. This is and has been true regardless of the size of a mosque. This is significant because it indicates that there is sufficient flexibility that leads mosque design to accommodate two distinct, but closely related, needs in one place, supporting religious and socio-cultural requirements. These requirements include the need to have a place where people can worship and a place where they can socialize in Table 2.

The Mushrafa Mosque is notable for its construction in the Najdi style, with mud and stone walls and a roof made of timber and palm fronds (14.9 m by 10.66 m). The mosque also has a basement (14.40 m by 11.42 m) and a minaret of approximately 13.17 m (5.37 m by 4.10 m) to the northeast of the mosque. The mosque has three entrances, which are located on the mosque's southern and eastern façades.

The Al-Hussaini Mosque is constructed of mud and stone, with a roof also made of tamarisk wood and palm fronds (14.62 m by 10.93 m) and the mosque also has a basement (14.65 m by 13.11 m), and its minaret, a tower, usually tall, in which the call to prayer is sung¹, is located south of the mosque along with a well, a basin, and a washing room near the prayer hall and courtyard.


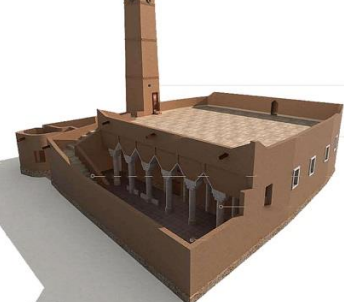




The architectural style of the Al-Dwaihra mosque is one of simplicity and beauty. The mosque's primary building material is clay, and it has an area of about 190 m² and its minaret is in the mosque's western wing. The mosque consists of three corridors parallel to the *Qibla wall*, the wall in a mosque facing Mecca, each with a *mihrab*, a niche architectural element that indicates the direction to Mecca, and an open courtyard (16.5 m by 7.5 m) located in the

¹ A "muezzin" sings the call to prayer. Minarets also serve as landmarks for inhabitants and visitors as well as subtly indicating an area in which Muslims make their home.

eastern part of the mosque (18.5 m by 7.5 m) for women, each with a mihrab. In addition, the minaret, which stands approximately 13.5 meters high, is located to the north of the mosque.

Having said that, this pattern is not exclusive to the region of Najd; rather, the pattern is repeated in other regions of Saudi Arabia, such as the city of Hofuf in Al-Ahsa, located in the eastern region of Saudi Arabia. There are Friday mosques in the primary neighborhoods, such as the *Al-Jabri Mosque* in the *Al-Kut* neighborhood and the *Imam Faisal bin Turki Mosque* in the *Al-Naathel* neighborhood. In Jeddah, the *Al-Shafi'i Mosque* and the *Al-Mimar Mosque* are both incorporated into their respective urban environments. An observer can only differentiate each mosque from its surroundings by the mosque's minaret.

Table 2. The built form of three Najdi Mosques.

Mushrafa Mosque	Husseini Mosque	Al-Dwaihra Mosque
		
		

NAJDI MOSQUE COMPONENTS

The functions and components of Najdi mosques are typically the same; however, the presence or absence of certain components can be contingent on the mosque's geographic location and the size of the building. Additionally, the distribution and orientation of these components may be affected by the location of the mosque and the context in which it is situated, such as the presence of private residences. As a result, the findings of this research indicate that the typical Najdi Mosque is comprised of the following four primary components in Figure 1:

- *Al-Sarha* (courtyard),
- *Al-Misbah* (prayer hall),
- *Al-Sath* (roof), and
- *Al-Khalwa* (basement)

Looking at the three Najdi Mosque case studies, all three mosques contain the four components. They vary in their location of the Qibla wall as well as how the adjacent urban

context has influenced their formation. The key insight is that whatever the mosque size and wherever the mosque is located, the community found ways to implement these four components in their local mosque to represent the Najdi Mosque identity (Table 3). Also, the size of each component depends on the climatic forces of each geographic mosque. In Abdul Salam’s *Al-Mashiqh* study, Salam examined the traditional Najdi Mosque, analyzing the climatic changes experienced by mosques during the year and how those changes impacted mosque usage.² He concluded that the local community tends to use the different four spaces in a *masjid al-juma’a* (Friday Mosque) to practice their rituals in different ways, depending on the season. He mentions, for example, that the *Al-Misbah* (prayer hall) space is the most used space during the year. It is more occupied in the summer as it the main covered area in the mosque. Meanwhile, in the winter the *Al-Khalwa* (basement) space in the basement is the most active space. The *Al-Sath*, or roof space, is the most used space in the fall and the *Al-Saraha*, or courtyard space, is the most used space in springtime (*Al-Mashiqh*, 2019). It is worth noting that individuals use three of these spaces at any season and time during the year. The *Al-Khalwa* space is the exception, as typically the space is locked, and the space is only open during the winter for security purposes and under certain conditions.

Table 3. The distribution and location of the Najdi Mosque components.

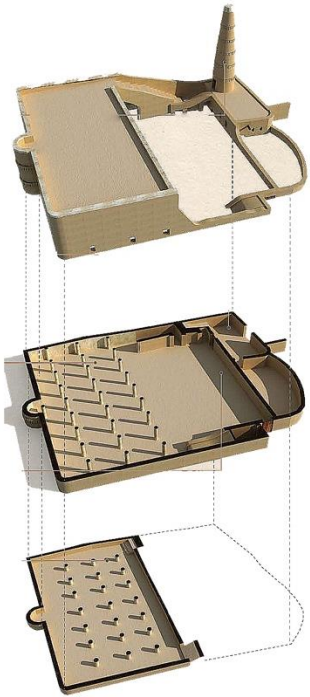
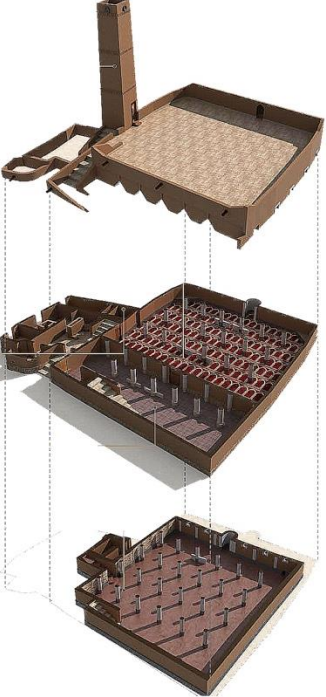
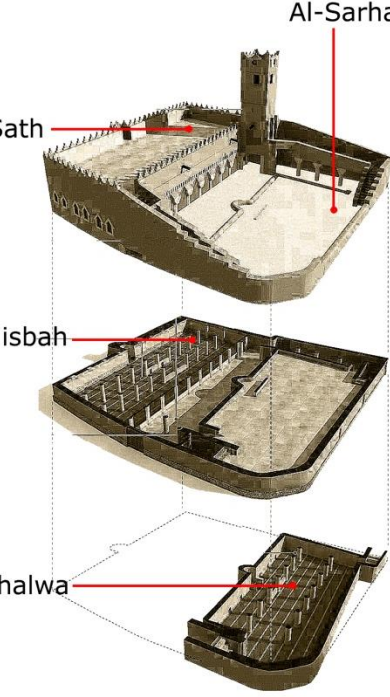
Al-Saraha	Al-Misbah	Al-Sath	Al-Khalwa

² High temperatures are characteristic of the central region’s climate during the summertime with low temperatures for three or four months in the winter. There is a significant difference in daytime and nighttime temperature throughout the year.

The prayer hall (*Al-Misbah*) is the mosque's most important component. It is usually rectangular in shape and has an area of about 180 m². The prayer hall of the Najdi Mosque is usually parallel to the Qibla wall, and arcaded and arcuate columns and arched stone walls support the roof. The number of pillars is mostly determined by the size of the mosque; however, there are usually two to four parallel corridors of pillars. The courtyard (*Al-Sarh*) is located mostly on the mosque's east side, in front of the prayer hall. It is essentially an open rectangular courtyard surrounded by three walls. It frequently houses the mosque's main entrances, the Al-Khalwa entrance, and the staircase leading to the rooftop and minaret. In the winter, this open space is usually used as an open prayer hall and for social activities in Table 4.

Al-Khalwa is located at the bottom of the mosque (basement) and is typically rectangular in shape, with corridors similar to those found in the prayer hall and running parallel to the Qibla wall. Its roof is supported by round stone columns with a rectangular stone capital (*qanaya'*). It has a mihrab in the center of the qibla wall, and Al-Khalwa typically has two entrances, one from inside the prayer hall and the other from Al-Sarh. The roof of the Al-Khalwa usually has ventilation openings and, as mentioned previously, the space is usually used to pray in the winter when it is extremely cold. The roof (*Al-Sath*) is the polar opposite of Al-Khalwa, where the space above the prayer hall is used for praying in moderate weather conditions during the summer.

Table 4. The mosque component locations of the three cases. Source: Redeveloped from (Saudi Commission for Tourism and Heritage, 2019).

Mushrafa Mosque	Husseini Mosque	Al-Dwaihra Mosque
		

It's interesting to see how different mosques place their minarets. This is likely a result of the numerous urban contexts that act as constraints on this behavior and the resulting response to the severe weather. We contend that the minaret's placement is a direct response to

neighboring homes, eliminating any potential for privacy invasion. Abdal-Majeed Daghistani provides support for this view by stating, the traditional organization and urban design represents a design solution that is environmentally efficient, which has evolved and responded to the social and economic needs of the resident, and which satisfies the moral and religious requirement[s] of Saudi Islamic society (Daghistani, 1985). Islamic law permits people to build as tall as they like so long as they don't hurt anyone else, but the Najdi local society created a novel method of organizing urban form through the development of a set of local customary laws (Urf's).

The manner in which communities distribute the four components of Najdi mosques has an effect on the structure's final shape and form. The final form of each mosque emerges as a local response to the requirements of the community and is determined by the Qibla direction as well as the forces of obstruction that come from the adjacent physical context. Because of this, this research found, based on its preliminary findings relating to the topology of the Najdi Mosque, that the four primary components are arranged in a variety of ways and in a variety of locations that directly respond to the physical context, community needs, and climatic challenges of each mosque and its users in Figure 2.

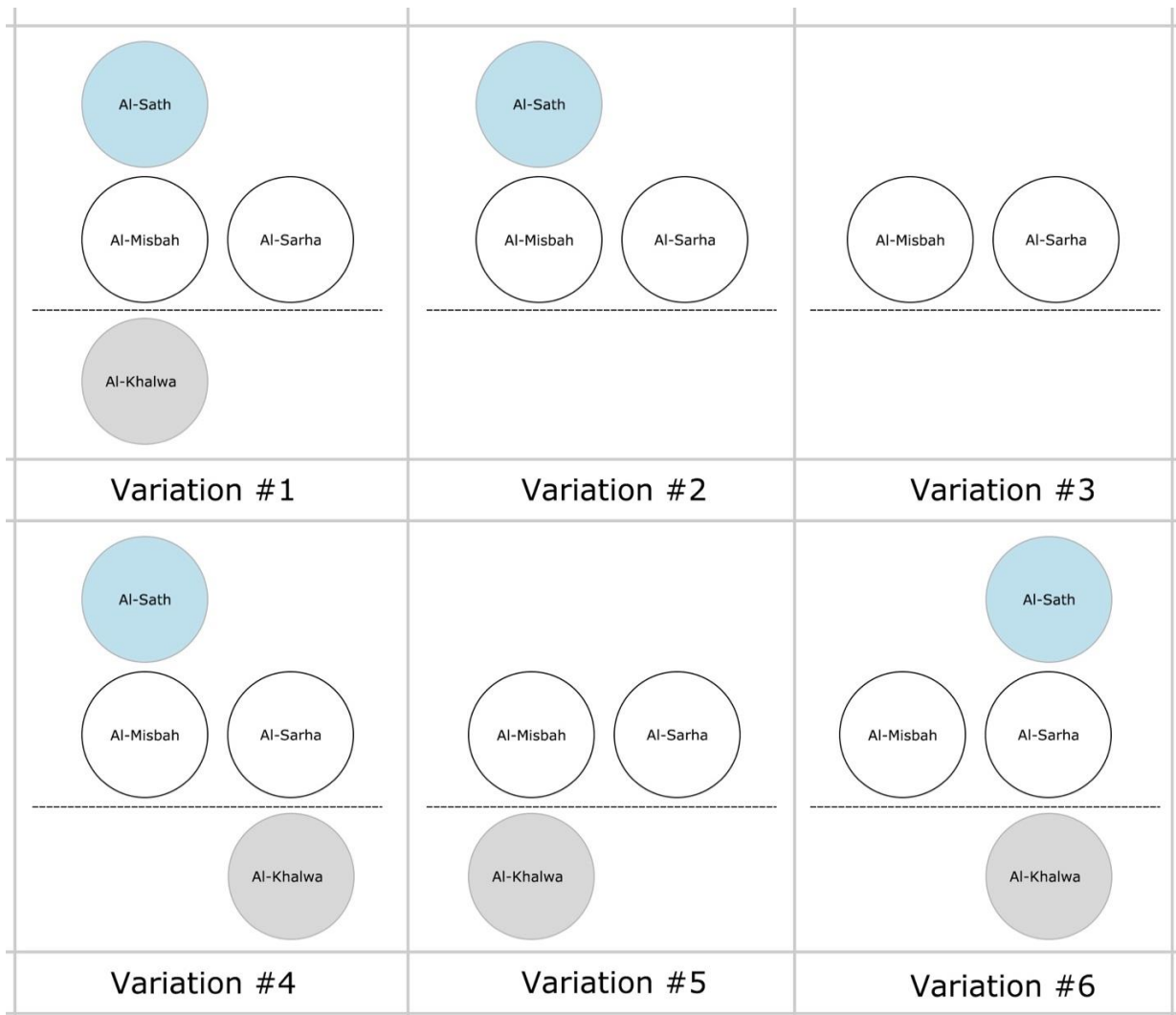


Figure 2. Possible variations in component location of a Najdi Mosque.

These variants aren't arbitrary; rather, they're the result of creative problem-solving by dwellers who want to make sure that the mosque's design features won't cause a privacy conflict with the surrounding urban environment, as well as responding to climatic solutions to enhance the space thermal comfort. In this way, significant buildings can be recognized by their height. They stand out more, are close to public areas, and are separated from more intimate spaces. People can find their way from the area's deep, private masses to its public spaces with the aid of landmark buildings (Alnaim, 2021). This pattern of behavior is especially evident in mosques, where minarets serve as both a symbol of public space and a means of orientation in dense urban environments. As a result, the heterogeneity of the traditional built environment is not challenged by the numerous component variations found in mosques; rather, all components and elements converge to represent a unified visual appearance that supports this homogeneity.

NAJDI MOSQUE ARCHITECTURAL ELEMENTS

The Najdi Mosque is primarily composed of round stone columns, which serve the function of supporting the mosque's roof. Stone beads are stacked atop one another and then plaster of clay and plaster are used to cover the column, which can be seen from the prayer hall, the basement, and a portion of the courtyard. Typically, the prayer hall is composed of a group of columns that are laid out in a pattern determined by the number of existing prayer rows. These columns are then adorned with stone crowns and knots in the shape of triangles in Figure 3.

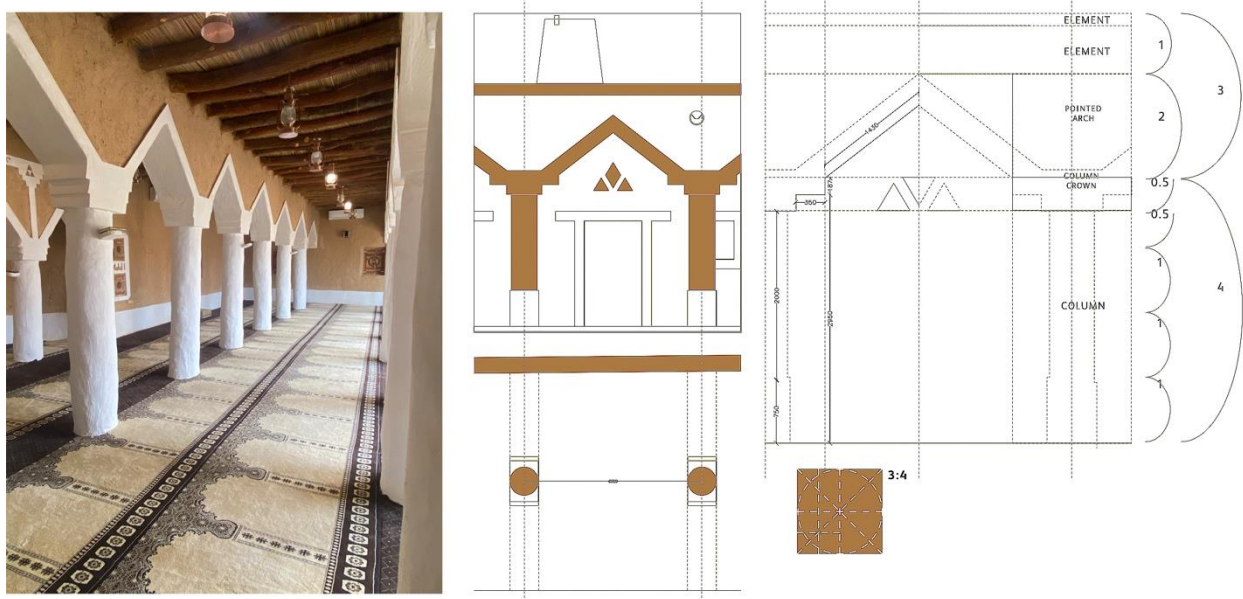
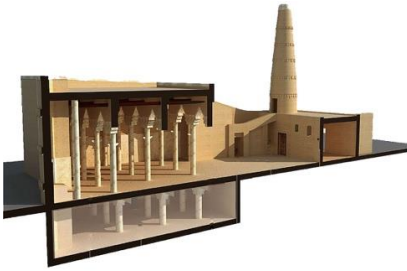

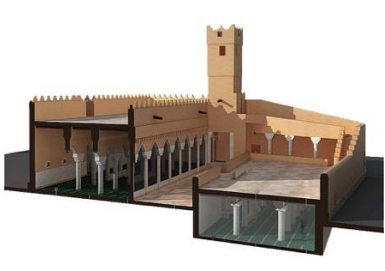





Figure 3. The detail and ratio of the Najdi arcade element.

In all three instances, the crafting of the columns and arcade elements is strikingly similar in terms of their general appearance. The only difference across the cases is the number of columns and arcade rows, which affects the level of congestion in the prayer hall. In addition, the arcade application may display some subtle differences depending on the column height and width. In general, the columns and arcade elements formed in the Najdi Mosques are representative of the traditional mosques found in the central region and express their identity in a way that is distinct from those mosques in other Saudi regions in Table 5. For example, in the typical Najd Mosque, the roofs of the mosques are constructed out of wooden beams that

are made from the trunks of tamarisk trees and stacked horizontally with a precise distance of between 20 and 40 centimeters. A layer of palm leaves and a layer of mud that is 15 centimeters thick holds up the roof, and the palm leaves and mud are supported on the edges by the walls and also receive support by the round stone columns with stone capitals and triangular vaults.

Table 5. Najdi mosque arcade element.

Mushrafa Mosque	Husseini Mosque	Al-Dwaihra Mosque
		
		

In general, Najdi Mosques are less ornate than other types of mosques and have a very straightforward appearance, with only a few small openings and wall recess shelves. Because of this, the existence of columns is significant because they serve as a decorative element by forming the arcade pillars. As a result, the presence of columns is significant and with the utilization of white plaster, a textural contrast is produced with the application of adobe material. Because of this, the arcade element component can be found in virtually every Najdi Mosque.

In Najdi mosques, the minaret serves multiple purposes: as a symbol of craftsmanship, clearly identifying the mosque's location in the urban context, and as a decorative element to enhance the mosque's overall architectural form. Minaret configurations and placements varied among the three case studies, a reflection of the differences in their immediate surroundings. However, the minarets of the Najd region have a distinct look and feel that is influenced by the extruded triangular strip known as the "*afrieze*," as well as the clear and plain walls all of which contribute to the architectural identity of mosques in the region as well as other built forms in the Najd region in Table 6.

The mosque's final visual shape was determined by the construction techniques and materials used. This is not to say that they shaped the masses or decided where the elements should be placed, but they did contribute to the mosque's visual identity. The complementary processes that brought together socio-cultural, natural environment, and construction techniques to generate the final mosque forms aided the Najdi people in reproducing similar

mosques without necessarily copying each other (Alnaim, 2022). As a result, the height and shape of the mosque minaret vary depending on the mosque's significance within its urban context, as does the mosque's placement and proximity to other private dwellings. As a result, the three study cases differ in terms of mosque form and minaret design.

Furthermore, the addition of various decorative elements may improve the mosque's built form identity as well as the quality of the living space. Recessed openings in the walls serve as shelving areas for the Qur'an. A band of white gypsum motifs, also known as "nora," added to the adobe wall can add another level of contrast to the overall appearance. The "mihrab" area of Najdi mosques is decorated with a variety of motifs that distinguish it from the rest of the building's design in Figure 4.

Table 6. The architecture of Najdi Mosques minarets.

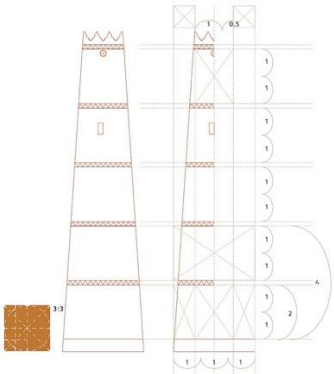
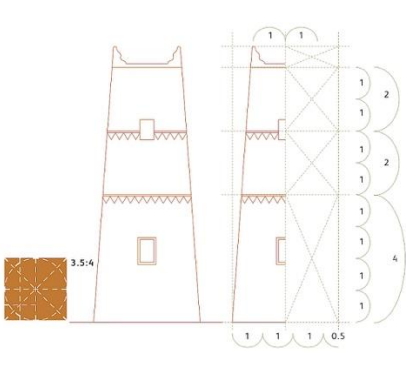
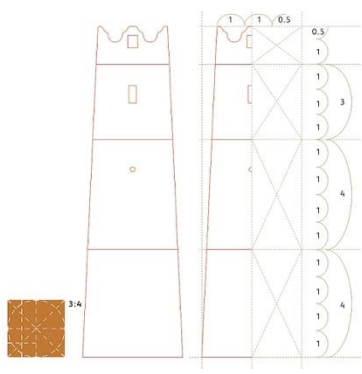



Mushrafa Mosque	Husseini Mosque	Al-Dwaihra Mosque
		
		



Figure 4. Samples of decorative details inside the Najdi Mosque.

CONCLUSION

Historic mosques are one of the most visible elements of the Kingdom's national urban heritage. Urban planners should preserve and protect historic Najdi Mosques from demolition or insensitive remodeling. Given their symbolism and importance to Islamic society, historic mosques are an important destination for learning and socializing in addition to being a place of worship. Najd communities built mosques with openness, flexibility, and clarity in mind, and this is evident in their design and construction. We contend that the process of creating spatial and physical forms expresses two meanings that are understood through practice and collective forces (social production), as well as their material manifestation (construction know-how). In this sense, the Najdi people understood their needs at the urban and building levels, and as a result, the mosque components and various variations were formed. They then applied the same principle logically to organize the internal spatial order of their mosques. As a result, residents in the Najd region adopted some of the same concepts within their mosques, albeit modified and reproduced to fit the settings of their mosques. The Najdi Mosque was a multi-purpose space, as this study revealed. In addition to performing religious rites, Najdi Mosques served other functions. The prayer hall and its surroundings were able to accommodate a large number of people for social activities due to their multi-functionality.

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