

The Impact of Urban Jurisprudence on the Architecture of Desert Palaces

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Abstract:

The desert palaces in Algeria are considered a valuable architectural heritage, as they represent a distinctive architectural style that combines the urgent need for stability with the culture of the local inhabitants. These desert palaces emerged as a necessity for survival and settlement; however, they were not random or chaotic constructions but rather a well-thought-out architectural system. All aspects were carefully considered to ensure comfort and stability, while also providing the conditions necessary for communal life within the palaces.

When discussing desert palaces, they adhere to specific natural conditions related to construction, as well as rules, teachings, and customs linked to identity and belonging. By applying some principles from urban jurisprudence to these palaces, we can observe the inhabitants' awareness of these teachings through the architectural systems, which greatly took into account the intellectual and spiritual aspects of the palace dwellers.

Keywords: Urbanism; Palace; Heritage.

INTRODUCTION

The desert palaces in Algeria's Sahara region represent a unique form of urban architecture characterized by features not commonly found in other areas. These palaces are distinguished by their compact structures, surrounded by an outer wall often topped with towers featuring small openings for surveillance and defense.

The palaces are generally centered around a mosque, which is surrounded by houses, public squares, alleys, and streets—similar to the layout of ancient Islamic cities built by early Muslims. The architectural elements are arranged in a highly consistent manner, whether in houses or public facilities such as alleyways, squares, shops, and market areas.

This architectural system, found in many of the desert palaces across Algeria, raises numerous questions about the conditions, engineering, and materials used in their construction. Many studies agree that these desert palaces, despite their small size and limited population, are indeed Islamic cities. They meet the criteria for Islamic urban development as documented by historians and also align with many of the principles outlined in urban jurisprudence.

To study the origins of these palaces and their relationship with Islamic cities, we pose our central question about their formation: to what extent do these palaces adhere to the conditions of Islamic urban jurisprudence? In this paper, we aim to conduct a general study based on observations of several palaces, focusing on their layouts, architectural masses, and structural elements.

1. Urbanism in Islamic Civilization:

When discussing the subject of urban jurisprudence in desert palaces, it is essential to provide a general overview of Islamic urban jurisprudence, including its regulations and conditions. Additionally, we must address the concept of desert palaces in terms of their architectural structures, distribution, and adherence to the rules and guidelines of urbanism. This will be explored through the following two elements:

1.1 Islamic Urbanism:

It is well-known that Muslims placed great importance on building cities and settlements in every region they inhabited or conquered, imprinting them with their distinct Islamic architectural style. They paid close attention to the selection of locations and their planning,¹ extending their care to the aesthetic forms of architectural structures, as form follows function. This means that architecture typically balances form and the intended purpose of the building, considering natural conditions, intellectual factors, and available materials in the surroundings to achieve its goal of serving human needs.

One of the most critical steps in urban planning and construction is the choice of a site for settlement, with a focus on sustainability and the longevity of the structures, which are influenced by the surrounding environment. This environment plays a significant role in shaping growth and life. It is commonly accepted that there are two types of environments: the first is the natural environment, created by God, encompassing everything on the Earth's surface that forms the natural landscape, including mountains, valleys, deserts, rivers, lakes, and so on. The second is the urban environment, created by humans, comprising structures built on the natural environment, including buildings, roads, open spaces, gardens, and other constructions.²

By examining the physical remains of ancient Islamic cities, it becomes clear that Islamic architecture adhered to a set of conditions commonly found in these cities, particularly in terms of natural fortification, proximity to pastures and water sources, and the availability of all necessary resources within the city itself, eliminating the need to seek them outside its boundaries.

Over time and through experience, a clear vision of Islamic urban thought emerged among scholars of Islamic political jurisprudence. They discussed the guidelines that must be observed when establishing cities and urban centers, based on precise conditions.³

As Islamic law served as the legal framework throughout the Islamic era—from the time of the Prophet Muhammad (peace be

upon him) until the end of the Ottoman period, when secular laws replaced Islamic legal rules and regulations—this marked the beginning of Westernization, which influenced many aspects of life in Islamic societies, including architecture. This highlights the importance of considering Islamic architectural jurisprudence in the intellectual development of both archaeologists and architects.⁴ This value is evident in the physical remnants of Islamic cities, palaces, and fortresses, as well as in the manuscripts that addressed issues related to urbanism.

Islamic architecture varied between religious, civil, and defensive structures. Civil architecture, in particular, adhered to a set of rules, especially regarding privacy, respect, avoiding harm or inconvenience to neighbors, and other general and specific provisions in the construction of houses. The same is true for religious architecture, which was deeply influenced by the spiritual aspect of Islamic civilization. Architecture became a reflection of civilization and a gathering place for the arts, as is often said. One of the most significant branches of Islamic art influenced by spirituality is "architecture," whose primary purpose, according to early Muslims, was to serve religion. Consequently, religious buildings developed rapidly in line with the progress of Islamic civilization. Their forms and styles multiplied, adapting to the varied and evolving functions they were intended to serve.⁵ As Islamic architecture evolved, it was accompanied by a set of regulations within Islamic urban jurisprudence, reflecting the dynamic life in its social, economic, and political dimensions. This jurisprudence addressed the organization of life in the city in all its details, from the planning of roads, markets, buildings, and properties, to the protection of the environment and natural resources, and the regulation of relationships between residents. When these legal regulations governing relationships were strong and well-established, society experienced stability, comfort, and security. However, if these rules were disrupted, the relationships faltered, leading to chaos and disorder.⁶

The physical layout of the Islamic city reflects the various dimensions that shaped its planning, including its different aspects.

Planning typically begins with the choice of location (**Situation**), meaning the city's position and its relationship to the surrounding area. Several factors influenced the choice of location for Islamic cities, varying from one city to another, especially those related to military or political considerations.⁷ Nonetheless, Islamic cities fulfilled all the necessary conditions for human settlement, starting with site selection and the requirements it must meet. The city's layout often followed a tree-like plan, radiating from the central mosque, with the different architectural structures distributed accordingly, all while adhering to the urban regulations derived from religious teachings, particularly in civil architecture.

1.2 Architectural Features of Desert Palaces in Algeria:

The architecture of desert palaces in Algeria represents a unique model of traditional architecture that provided what was necessary for humans to live in harsh desert conditions. Most of these palaces share similarities in their architectural composition, and even their locations and the choice of construction sites were carefully considered. They were built based on the availability of water, fortification, and grazing land for livestock. In addition to this, efforts were made to practically fortify the palace through its construction. Below is a general overview of the components of a traditional palace in desert areas:

Religious Architecture:

Religious architecture is a distinctive feature in all Islamic cities, primarily represented by the mosque, which serves as the center of the community and the authority for resolving all matters related to the inhabitants of the palace, whether internal among the residents or in their relations with those outside the palace. No palace is without this religious and social institution. The mosque is the focal point of the Islamic community and its tangible physical structure. The community is incomplete without a mosque that connects its members, where they gather for prayer, exchange opinions, and stay informed about the affairs of their community. It is also a place where they meet with their leaders. The mosque is not only a

religious necessity but also a political and social necessity for each individual Muslim and for the Muslim community as a whole.⁸

In the desert palaces, the congregational mosque, where the community gathers, is typically located in the center of the palace. From this central point, the main streets radiate, making the mosque the nucleus and heart of the palace. Sometimes, additional small prayer spaces are distributed throughout the palace, designated for prayer only. During our visits to many palaces, we found that some included a mausoleum or had a mausoleum adjacent to them, which is a distinctive feature in many regions.

Civil Architecture:

Civil architecture encompasses both private and public buildings and structures within the palace. Public structures include squares, streets, and all the facilities shared by the palace residents. Private structures refer to houses, shops, baths, mills, and other similar facilities, which generally do not serve a defensive or religious function, except in rare cases. The civil architecture can be described as follows:

Houses in Desert Palaces:

Civil architecture consists of a collection of houses that are arranged sequentially and in an interconnected manner, characterized by simplicity. These houses lack any luxury or ornamentation, adhering to the demands of the surrounding environment. Houses in the palace typically have one or two floors⁹ and make up the majority of the architectural fabric. They are closely packed together, with their relationship to the outside often limited to the width of the door connecting them to the public walkway. However, connection to the external environment is primarily established through the upper parts of the house, reflecting a direct relationship with the natural surroundings.¹⁰

Streets, Alleys, and Paths:

The streets in desert palaces vary, but a common feature among them is the presence of three types of streets: the main or public

streets, which extend from the mosque towards the public squares and the palace's main gates; secondary streets or alleys, which lead to the inner squares and neighborhoods within the palace; and paths, which are private passageways leading directly to family homes.

Public Squares:

Every palace contains three or more public squares. Some are used as daily markets for the residents' needs, while others serve as open spaces for ventilation, relaxation, community gatherings, and children's play.

Defensive Architecture:

Humans have always sought stability for themselves, their communities, and their dwellings, and this is evident in most ancient cities, fortresses, and villages, which were naturally fortified or protected through various means to ensure the safety of the inhabitants and their cities. While naturally fortified locations were often chosen, it was necessary to enhance these defenses with walls, towers, moats, and other protective measures.

This was also the case for the desert palaces of Algeria, especially since many of these palaces were located along well-known trade routes or pilgrimage paths. Their architectural design, including fortified walls, towers, and secure entrances, reflects the need to protect against external raids.¹¹

Defensive architecture in the desert palaces, as observed through various field studies, primarily consists of an outer wall that is thicker at the base than at the top. This wall typically rises higher than any other structure in the palace, and it often includes an internal walkway for guards to patrol without descending to ground level. The walls are punctuated by a series of towers positioned to encircle the palace, each equipped with narrow slits known as "mazaghel," used for surveillance and shooting arrows during attacks.

In addition to the walls and towers, these palaces usually have between three and four large, main gates that open in the morning and close at night. In some palaces—although rare—there are

deceptive gates that lead to dead ends or covered corridors, which do not provide direct access to the interior of the palace. These were likely designed as a defense mechanism against intruders.

2.Desert Palaces in the Context of Islamic Urban Jurisprudence:

2.1 Urban Composition and Social Need:

Desert palaces are residential clusters inhabited by a group of people who may share a common ethnic origin or come from diverse ethnic backgrounds. These clusters are typically equipped with a defensive system, primarily consisting of a surrounding wall with fortified towers for surveillance and defense.¹² The palace serves as a window into the civilization of its people, acting as a tool for intellectual, cultural, and civilizational expression, while also shaping the lifestyle framework and its development in all aspects.¹³

The palace holds geographical, social, and economic significance, representing the product of a socio-economic system existing in the oases. In this system, the social, economic, and architectural aspects are interwoven and complement each other. It is difficult to separate one aspect from the other, as these three dimensions together form the essence of the palace.¹⁴

The desert palaces were built along the banks of underground valleys, such as Ouad Righ, Ouad Mya, Ouad Souf, Ouad M'zab, and Ouad Saoura, because of the underground water resources these valleys provide. This phenomenon is similar to that observed in most ancient cities, which were built along riverbanks, as water was crucial to the life of any human settlement.¹⁵

The urban fabric of the palace follows architectural traditions rooted in Islamic teachings, which emphasize the necessity of social solidarity and the protection of personal privacy. In accordance with these principles, the local architect designed the palace with an architectural style that respected personal family freedoms while protecting the spirit of neighborliness, thus fostering a sense of social and familial closeness.¹⁶

The architectural fabric of the desert palaces draws its features from the climatic conditions of desert regions, as well as from the cultural traditions and social factors prevalent in the area, most of which are derived from the teachings of Islam, which promote privacy, modesty, and respect for neighbors.¹⁷

Typically, the desert palace adopts a pyramidal morphological shape. At the vertical center lies the mosque or prayer hall, symbolizing spiritual strength. Surrounding this center, a cohesive spider-web-like network extends, with the houses located closer to the center, followed by the market, then the walls. Facilities located outside the walls, such as gardens and cemeteries, along with irrigation networks, are integrated into the overall layout of these residential clusters.¹⁸

The relationship between the buildings was not rigid; rather, it influenced the behavior of the inhabitants, ensuring that they respected public morals. Neighbors had the right to enforce these rules, even through legal action. The records of Sharia courts are filled with cases that demonstrate the solidarity of residents in a district or neighborhood against those who violated the norms. The principle of "no harm and no reciprocation of harm" (لا ضرر ولا ضرار) and the "application of " custom" in construction rulings led to the development of the concept of "possession of harm," which shaped the Islamic city in a comprehensive manner.¹⁹

Regarding building materials, the use of earth and mud architecture dates back to ancient times and can be observed in structures across the world, particularly in Algeria. These materials were commonly used by all segments of society because they were inexpensive and had properties that made them ideal for construction. Mud, in particular, was a primary material in hot regions due to its ability to withstand temperature fluctuations and harsh climatic conditions. These desert palaces represent various types of desert architecture, whether in civil buildings like houses and palaces, religious structures like mosques and zawiyas (Islamic schools), or military constructions such as forts and citadels.²⁰

2.2 Religious and Social Values Reflected in the Architectural Style of Palaces:

A thorough study of the desert palaces scattered across the Algerian Sahara, especially when conducted through an interdisciplinary approach, reveals a relatively complete picture of the essence of these palaces. We can describe them as urban, social, and political entities that serve the people of the region, meeting their needs in the face of harsh climatic conditions, whether in times of peace or war. This architectural entity has evolved to align with the needs of its inhabitants. A set of religious and social values can be discerned through the architectural structures and layout of these palaces, which can be summarized as follows:

- The central location of the mosque in the palace reflects its spiritual significance for the local inhabitants, as it serves as a crucial hub for managing all the affairs of the palace.
- The layout of public squares demonstrates the efforts of builders to maintain tranquility in the inner parts of the palace, thus better preserving the privacy of the homes and residents.
- The streets are divided into three types, as mentioned earlier, which illustrates the respect for both individual and communal privacy allowing for both public and private spaces.
- The external facades of houses are often plain and devoid of windows or openings, signifying the importance of privacy and the sanctity of homes.
- The "broken" or angled entrance of most houses was designed to create a barrier between the inner and outer spaces, ensuring that the inside of the house remains private and unseen from the outside.
- Shops and markets are often located on the outskirts or even outside the palace, which helps reduce noise and congestion within the palace and maintains its cleanliness.

- Water distribution in the palace, often through traditional techniques such as the *foggara* system, followed a precise and regulated system overseen by a fair authority, ensuring equal access for all residents.
- The simplicity and humility of most homes reflect the culture of the residents, demonstrating modesty and the absence of ostentation or showing off.
- The close proximity of houses in the palace symbolizes the spirit of community and solidarity, representing one of the core values of the Muslim society.
- Keeping walls between neighbors at a lower height was an enforced rule in Islamic urban jurisprudence to maintain social harmony.
- Downspouts were designed not to direct water onto a neighbor's property, to avoid causing harm.
- Toilets (*kinif*) were located at the farthest end of the courtyard, away from view, to avoid embarrassment and unpleasant odors.

Conclusion:

In conclusion, we can affirm that the architecture of desert palaces was not the result of chance or chaotic work merely for survival. Rather, their construction was based on accumulated knowledge and past experiences in building practices. These palaces were designed in an organized and harmonious manner, both in terms of form and functionality.

What caught our attention the most during repeated field visits to various desert palaces is the presence of religious and spiritual values, particularly reflected in most of the structures, especially the civil ones. This indicates that the construction was carefully planned to preserve spiritual values, social customs, and even the traditions of the palace inhabitants.

We can say that the religious aspect, embodied in Islamic urban jurisprudence, is the most prominent feature of desert palaces. This is evident in the proximity of houses and the public facilities, which ensure that every individual's dignity and privacy are respected. These values further enhanced the cohesion and solidarity among the residents. After all, humans are shaped by their geographical, social, and cultural environment, which is clearly reflected in the values we previously mentioned.

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