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ARCHITECTURAL OTTOMAN HERITAGE IN CONSTANTINE, ADAPTATIONS AND INFLUENCES (CASE OF MOSQUES)

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ARCHITECTURAL OTTOMAN HERITAGE IN CONSTANTINE, ADAPTATIONS AND INFLUENCES

(CASE OF MOSQUES)

ABSTRACT :

AUTHOR1

During the Ottoman era (fifteenth - eighteenth century), Algeria was marked by a flourishing period of Islamic art. Ottoman architectural masterpieces were characterized by their unique stylistic touches but also their integration of the specific heritage of each region, drawing on local knowledge. Unfortunately, the design of contemporary mosques neglects the cultural context of their respective region. The Algerian city of Constantine, a city of rich heritage especially in religious architecture, was famously known as "the city of 100 mosques" prior to French colonization. Today, only three mosques in Constantine - Sidi El-Kettani, Sidi Lakhdar, and Hassan Bey - have preserved elements of Ottoman architectural expression, for example Hassan Bey mosque had, for the first time, reproduced an ottoman plan with several small cupolas without the large central dome, also referred to as the Ulu Cami.

This article presents an architectural monograph of these Ottoman era mosques, in order to reveal their distinct architectural expressions and highlight regional specificities as well as the importance of reviving this architectural heritage and passing it on faithfully to future generations, to serve as a source of inspiration for contemporary designs, especially that of mosques.

KEYWORDS:

architectural heritage, Constantine, mosque design, Ottoman influences, regional specificities."

AUTHOR2

INTRODUCTION

In Algeria, colonial policies aimed at dismantling collective identity and erasing cultural heritage led to the loss of the forms and functions of mosques. After independence, Algerians were looking for a style of Islamic architecture to adopt (A. Hagedorn et al., 2008, p.586-590) [1], despite the richness of the pre-colonial architectural heritage. During Ottoman rule in Algeria (from the fifteenth century onward), Islamic art reached its peak. For their masterpieces, the Ottomans not only added their distinctive touches but also drew inspiration from the architectural heritage of each region, leveraging local craftsmanship, especially for monumental structures such as palaces and mosques.

The Medina of Constantine, known as the city of a hundred mosques, still preserves jewels of "local" Ottoman architecture, including Moorish baths, zawiyas, mosques, and the famous Ahmed Bey Palace. This article undertakes a monographic study of three Ottoman mosques in Constantine, which retain a certain architectural authenticity. The mosque edifice was chosen for its role and significance in society. It is a religious structure sacralized by the community, with a "cultic" functional value that ensures its longevity (Pierre-Henri PRÉLOT, 2017) [2]. Mosques are inherited, perpetuated, and often preserved either intentionally by authorities or spontaneously by the local population.

To frame our discussion, we pose the following question: If the Ottomans ruled Constantine for over three centuries, leaving behind a significant legacy of religious buildings (over a hundred mosques at the time of the French arrival), how did Ottoman architectural influences shape mosque design during that era? What traces remain today, and how can they be transmitted to future generations? Additionally, what local adaptations were incorporated into these structures?

Among the objectives of this study are:

- *Identifying architectural characteristics: To analyze the Ottoman-style features of mosques in Constantine.
- *Highlighting Ottoman influences: To reveal the architectural influences of the Ottoman era on these mosques and their contribution to Algeria's religious architecture.

*Historical understanding: To examine how the Ottoman period shaped religious architecture in Constantine.

*Preserving heritage: By emphasizing the architectural characteristics of mosques from this period, the study contributes to the preservation and promotion of Constantine's cultural heritage

*Guiding restoration efforts: By providing a reference for potential mosque restorations that respect the authenticity of historical elements.

*Raising awareness: Among academics, professionals, and civil society about the importance of Ottoman-era architectural heritage.

*Inspiring contemporary design: By establishing reference frameworks derived from Algeria's varied heritage to illustrate its regional architectural specificities and inspire current designs.

The conceptual framework of this study involves presenting the architectural characteristics (Moorish style) of mosques in Algeria before the Ottoman regency, as well as the Ottoman model (influenced by Byzantine and Seljuk styles). Through an analysis of three Ottoman mosques in Constantine, we examine Ottoman influences and local adaptations. Previous studies on this subject include the works of G. Goodwin and Kuban Dogan on Ottoman architecture in general, and those of R. Bourouiba, A. Dahdouh, and Fatima Zahra Guechi, which focus on the architecture of mosques (Maghreban ones and Ottoman) in Algeria, often adopting an archaeological-historical and descriptive approach. However, few studies have explored the interaction between Ottoman and Maghrebi styles in Algerian mosques, resulting in what is known as the "local Ottoman style." This study focuses on Constantine as a case study, analyzing three Ottoman mosques, though similar cases can be found in other Algerian cities such as Oran, Annaba, and Algiers.

METHODS:

For the methodology, we adopted a historical-descriptive method and an architectural monograph approach. The latter, utilized by Dr. Chiraz Mosbah (2006) [3], combines historical research with textual, graphic, or photographic descriptions. A theoretical section precedes the analysis to define the historical context and some architectural criteria of mosques (Moorish/Ottoman). The study focuses on mosques as a category, selecting samples based on

authenticity and integrity. Three of the most intact Ottoman-era mosques in Constantine were chosen.

After analyzing these mosques and examining their architectural and aesthetic features, it became evident that they were not merely religious buildings but also embodied a blend of Ottoman traditions and regional specificities. This fusion was likely due to the contributions of local artisans and the Ottoman rulers' insistence on incorporating distinctive Ottoman elements.

In conclusion, we identified the local Ottoman style in Constantine mosques on three levels: conceptual, urban, and aesthetic, reflecting characteristic features of Ottoman works. These criteria serve as sources of inspiration and reference frameworks for mosque designers and researchers in Islamic architecture.

1-MOORS AND OTTOMANS IN ALGERIA:

The Moors originated in the Maghreb region, encompassing modern-day Morocco, Algeria, Tunisia, and parts of Libya. Many were Berbers, the indigenous people of North Africa, who embraced Islam after the Arab Muslim conquests. Over time, they adopted elements of Arab culture, language, and religion, creating a unique Islamic identity rooted in North African traditions.

In the field of art and architecture, the Moors were renowned for their architectural achievements, characterized by intricate geometric patterns, arabesques, and calligraphy. Their designs influenced structures such as the Alhambra in Spain and mosques across North Africa. The Moorish style, an Arab-Islamic architectural style developed by the Moors, had a significant impact on the Iberian Peninsula (Andalusia). This style employed distinctive expressions and techniques, leaving a lasting mark on both Andalusia and North Africa, particularly through the dynasties that succeeded one another: the Almohads (North Africa), Almoravids (Morocco and Algeria), Merinids (Morocco), Zianids (Algeria), Hafsid (Tunisia), among others. Despite their differences, these dynasties shared common characteristics, especially in mosques, emphasizing arches, domes, monumental sculpted doors, mosaics, and faience. On another note, the Ottoman period in the history of the Maghreb began following Spanish actions against the main North African ports. In the 16th century, the Ottoman Empire expanded its influence in North Africa, establishing itself in Tunisia, Algeria, and Libya. These territories were incorporated into the Empire as provinces,

administered by beys appointed by Istanbul, the imperial capital. The Barbarossa brothers, true heroes of the sixteenth-century Muslim world, were then called upon as saviors by the Moors of Algiers in 1515. Their intervention marked a decisive turning point in the history of Algeria and Tunisia, particularly in the face of Christian attacks. The Ottoman Empire, emerging as the new Muslim power in the eastern Mediterranean, opposed the European Christian monarchies (https://www.univ-usto.dz/images/coursenligne/IE_Dalila_Senhadj.pdf) [4], but they also left a profound cultural influence on Algeria that shaped the regional, social, political and artistic landscape. Under Ottoman rule, Algeria became a key province of the empire, introducing new cultural elements that blended with local Berber and Arab traditions, creating a unique Algerian identity. For instance, in the field of architecture, the Ottomans introduced distinct styles especially for palaces and religious buildings, such as domed mosques, intricate tilework, and elegant courtyards, among others. Notable examples include the Ketchaoua mosque in Algiers, the Bey's mosque in Oran, the Salah bey mosque in Annaba, and several mosques in Constantine such as Hassan Bey Mosque, Sidi Lakhdar Mosque and Sidi el Kettani Mosque. These structures reflect Ottoman design and aesthetics combined with local influences.



FIGURE 01: Territories occupied by the Ottomans (zones of influence)

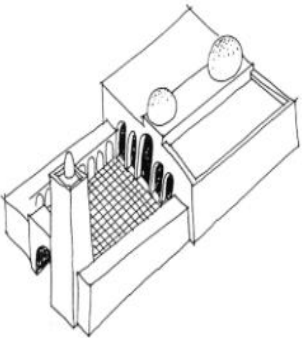
1-1-Characteristics Of Mosques In Algeria Before The Ottomans 'Moorish Style' (Hispano-Maghrebian):

Moorish mosques In Algeria where marked by:

- Diversity of materials: Brick was used for both construction and decoration, with stone cladding or combined with brickwork.
- Stucco decoration: Use of zellige (glazed tiles with geometric patterns).

- Arches: Horseshoe arches, poly-lobed arches, and arches with lambrequins.
- Minaret: A single minaret per mosque, square in section, decorated with brickwork or stucco motifs and muqarnas (stalactite-like decorations) made of wood or plaster. It could either be part of the mosque or a separate structure, as seen with the Almohads (H.Munis ,1978, p.86) [5].
- Domes: Domes covered with two-slope roofs, typically covered in green glazed tiles.
- Decoration: Use of interlaced gypsum or brickwork, with paired arches separated by columns, poly-lobed or interlaced arches, or even stacked arches.
- Calligraphy: Utilized Naskh Maghrebi style, particularly the Kufic script.
- Reuse of construction elements: Incorporation of columns and capitals from Roman and Byzantine periods.

Tableo1: Mosque With an Arabic Plan (Adopted in North Africa).

Arab Plan Mosque
Hypostyle: (from the Greek) an architectural form originating in ancient Greece; a prayer hall whose roof is supported by columns, with a courtyard featuring porticos, with or without a fountain. The term is primarily used in Islamic architecture to refer to the prayer hall in a mosque (hypostyle mosque with an inner courtyard) (M.Hattstein et al., 2008, p.610) [6]. The "Arab plan" refers to a hypostyle prayer hall with longitudinal naves intersected by transverse aisles, annexed by a courtyard.
 <p>FIGURE 02: Hypostyle Mosque – Prototype (M.Frishman)</p>

Source: authors

1-2-Characteristics Of Ottoman Mosques:

Ottoman mosques are distinguished by their central domed prayer halls, a design strongly influenced by Byzantine architecture, especially the Hagia Sophia (Goodwin, 1971, p. 334) [7]. The architectural language reflects a synthesis of functional utility and aesthetic harmony, inspired by earlier Seljuk and Byzantine traditions.

Table 02: Ottoman mosques features

Design Features
<p>Key elements include: Courtyards bordered by galleries, the integration of domes, half-domes, and corner domes for spatial coherence and grandeur, the inclusion of multiple slender, pencil-shaped minarets.</p> <p>*Plan Schemes: Ottoman Mosque plans evolved from two primary inspirations:</p> <p>a-Central Dome Plan: Dominated by a large central dome supported by half-domes, freeing interior space with the help of large piers.</p> <p>b-Ulu Cami Type: Characterized by multiple small domes covering the prayer hall, reminiscent of Seljuk models.</p> <p>Both layouts ensured practicality in worship while enhancing structural and spatial integrity (see Table n°03 for examples).</p> <p>* Façade Features:</p> <p>Ottoman mosques emphasize symmetry and proportionality on their facades. Common features include: Slender cylindrical minarets flanking the structure, often in multiples, prominent domes visible from afar, acting as iconic symbols of the skyline, courtyards surrounded by arcades, contributing to a cohesive exterior design.</p>
Structural System and Architectural Elements
<p>The structural ingenuity of Ottoman mosques lies in their balance of aesthetics and engineering: Large piers and arches support the massive domes. Half-domes and smaller domes distribute the load, ensuring stability.</p> <p>The use of materials like stucco, marble, and ceramics enhances durability and ornamentation.</p> <p>The integration of the mosque into a Külliye—a multifunctional complex—further emphasizes its structural and societal significance (Kuban, 2010) [8].</p> <p>* Spatial Features:</p>

Interior spaces of Ottoman mosques are designed for openness and functionality.
The use of large piers ensures the central dome's stability while freeing up the prayer area.
Half-domes and corner domes create a sense of layered spatial hierarchy.
Light is strategically introduced through stained-glass windows.

Aesthetic Features and Ornament

Ottoman mosques are celebrated for their rich interior decoration, which includes:
Intricate stucco and marble carvings.
Ceramic tiles adorned with geometric and floral patterns.
Colored stained-glass windows that filter light in dynamic, vibrant ways.
The decoration reflects a fusion of Islamic artistic traditions and local influences, achieving both visual beauty and spiritual resonance (Hattstein et al., 2008, p.609). [6]

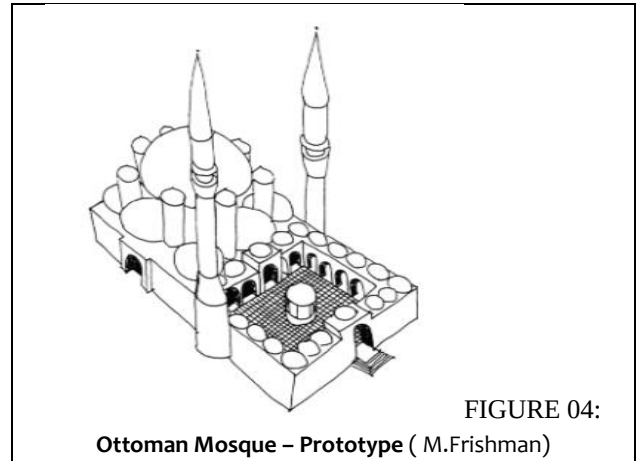


FIGURE 04:

Ottoman Mosque – Prototype (M.Frishman)

Source: authors, 2020

2-THE OTTOMANS IN CONSTANTINE (HISTORICAL OVERVIEW):

At the end of the 15th century, Constantine was still under the governance of the Hafsids, based in Tunis under the rule of Sultan Moulaï Mohamed. However, it is difficult to specify the exact date of the Ottoman arrival in Constantine, but it seems to have occurred after the conquest of Tunis by Kheir Eddine, around 1535. From then on, Constantine broke away from the Hafsid control and fell under Ottoman rule until the French colonization.

2-1-Ottoman Heritage In Constantine:

The Ottoman presence in Constantine lasted for several centuries and deeply influenced the city's history. It left a significant legacy, particularly in the city's culture and architecture. Ottoman presence is still visible in monuments across Constantine city (in the east of Algeria) with mosques, madrassas (Qur'anic schools), and palaces built on the ottoman style; so ottoman heritage is still visible in some of the city's monument especially mosques, in fact, in 1837, the year of the French colonial siege of Constantine, the city counted 'a hundred religious' establishments, including main mosques, prayer halls, medersas, and zaouïas (R.Bourouiba, 1978, P157) [10]. However, the state of conservation of these buildings varied case by case. For example, the majority of mosques were converted into cathedrals or churches during the French colonial period, undergoing minor modifications and sometimes reconstructions. After independence, these buildings were reconverted to reclaim their original function (mosques). Below, we analyze three mosques that retain a certain level of authenticity from the Ottoman period.

2-2-Architectural Monograph Of Three Ottoman Mosques In Constantine:

Table 03: Mosque Forms Adopted in Ottoman Turkey.

Ulu Cami Mosque
<p>Meaning "Grand Mosque," it first appeared at the Bayezid I Mosque in Bursa (1396-1400 CE) featuring 20 identical domes and no courtyard (https://islamicart.museumwnf.org/database_item.php?id=monument;isl;tr;mono1;22;en). [9] Ottoman architecture can be divided into two distinct periods. The first period is marked by Seljuk influence, notably characterized by pillar-supported mosques like the one in Bursa, where the domes rest on massive pillars [D.Senhadj, 2017). [3]</p>

FIGURE 03: Ulu Cami Mosque (Bursa) – Plan (Islamic Art Museum)

Mosque with Central Dome and Slender Minarets (Ottoman Plan)

It should be noted here that the Ottomans generally adopted the local architectural style for the regions they occupied, using local techniques and materials, as well as local labor (O.Grabar, 2000, P.50) [11]. However, they always introduced some "distinct touches" from Ottoman architecture.

2-2-1-Hassan Bey Mosque (Souk El Ghezal): (1703-1730 A.D.):

Built for the service of Bey Hussein Bou Kemia, this mosque incorporates Ottoman architectural expressions blended with local adaptations and elements from the French colonial era and post-independence period. It is a majestic masterpiece that dominates Didouche Mourad Street (formerly Rue de France) and Si El Haoues Square, located right next to the Ahmed Bey Palace. The name (Souk El Ghezal) comes from the wool market (Ghezal) that was once nearby.

After independence, it was renamed "Hassan Bey" in reference to its patron. Its construction, entrusted to the Moroccan architect A. Ben Alloul Djelloul, began in 1703 and was completed in 1730 (A.Menhour , 2012). [12]

Table 04: Monography of Hassan Bey Mosque

DESIGN
<p>Plan with small domes:</p> <p>This is the only mosque in Constantine that adopted an Ottoman plan from the early period (influenced by the Seljuk style), called ULU CAMI (Yekta Demiralp ,2024) [13]. In the Hassan Bey Mosque, the naves (seven of which are perpendicular to the qibla wall and five parallel to it) are covered with 17 small domes and 18 alternating vaults, lacking the large central dome and a courtyard. It is distinguished by its spherical corner domes, which were previously whitewashed, sitting atop a tiled roof. This roof covers most of the small domes and vaults. (A.Menhour, 2012) [12].</p> <p>The area of the mosque, from its original construction, has been preserved until today (18.25x24.25m), except for the covering of the courtyard by a large lateral dome (added during the French colonial period when it was converted into a cathedral: "Notre-Dame des Sept-Douleurs". Originally, the mosque had a rectangular open courtyard with a Maida (ablution basin) and restrooms oriented to the north.</p>

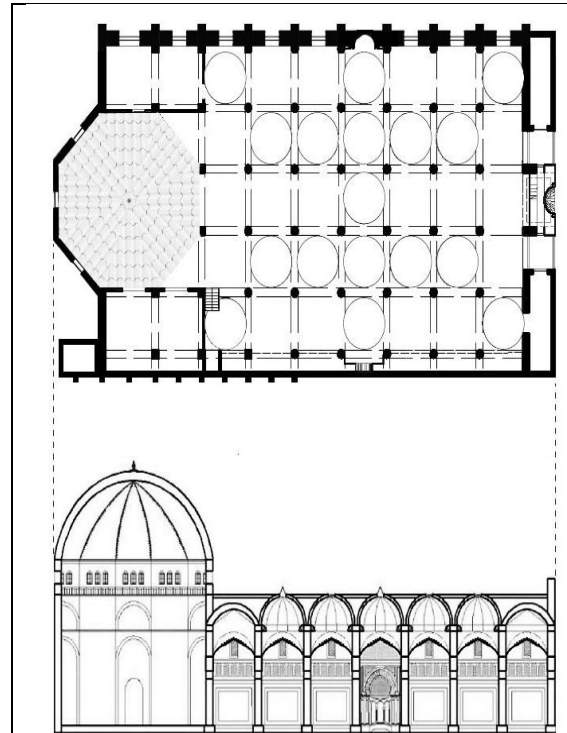


Figure05: Plan and section of Hassan Bey Mosque (author)

Architectural/Structural Elements



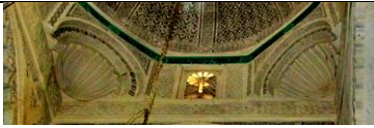
figure 06: arcs with lambrequins (2024)

arcs with lambrequins: This type of arch was used by the Almohads in the thirteenth century (originating from the Taifa kingdoms in Andalusia). It spread mainly among the Almoravids and Merinids : western Algeria and Morocco (R.Bourouiba, 1987, P.137) [14]



figure 07: square-section minaret

square-section minaret: The mosque was equipped with a single square minaret (according to R. Bourouiba) [14], located on the southwest facade (which has been modified several times during the colonial era and after independence).

 <p>figure 08: shell-shaped squinches</p>	<p>Use of shell-shaped squinches that transfer the loads of the small domes. It should be noted that in the Maghreb, the loads of domes are often transferred by squinches.</p>
 <p>figure 09: Keyed pendentive vaults</p>	<p>Keyed pendentive vaults are alternately arranged with the small domes, all covered by a sloped roof of tiles.</p>
<p>Aesthetic Aspects</p>	
 <p>figure 10: Zellige</p>	<p>(tiles) with floral patterns in blue, yellow, and green. Among the themes used: the tulip flower, which is the emblem of the Ottomans, and its patterns are identical to those used in the Ahmed Bey Palace and even in the Hammam Souk el Ghezal nearby.</p>

¹ a-Chamsiet: (name derived from the Arabic word Chams -which means sun) :these are openings allowing sunlight to penetrate, formed by geometric interlacing patterns, protected by Mucharabieh (to attenuate the intensity of the lighting.)

 <p>figure 11: the qibla wall</p>	<p>Use of finely carved stucco: for interlacing of floral and geometric motifs as well as calligraphy (in Naskh style), bordering the qibla wall and part of the east wall.</p>
 <p>figure 12: Moucharabieh</p>	<p>(Wooden Window Screens): The execution of these is done within a wooden frame, filled with fresh plaster that is cut into floral or, typically, geometric patterns—polygons, rosettes, etc.</p>
 <p>figure 13: Colored Stained Glass</p>	<p>Use of Colored Stained Glass (Chamsiet and Qamariet): In Algeria, colored stained glass was only used during the Ottoman period, and it was used for their monumental buildings. Here, the qibla wall contains six fixed, raised-arch windows with colored glass, each of small dimensions, and each opening overlooks a nave. The colors present a mosaic of red, green, yellow, and ochre.</p>

b-Qamariet: (from the Arabic word Qamar which means moon), which refers to circular or semi-circular openings with colored stained glass windows, usually placed in the upper parts of walls or domes to let in the soft light of the moon.

2-2-2-SIDI LAKHDAR MOSQUE (1157H/1743):

Located on Boulevard Chedid Salah, it was built under the order of Hassan Bey ibn Hossein. It is reported that its name comes from the dominant green color both inside and outside, rather than from the famous marabout (F.Z. Guechi, 2005)[15]

Table 04: Monograph of Sidi Lakhdar Mosque

DESIGN
<p>Suspended Mosque: Refers to the arrangement of the prayer hall on the upper floor (Abdelkader Dahdouh,,2010) [16]; it is accessed by two doors facing the qibla wall and a staircase. The mosque is composed of five naves. For this type of mosque, the ground floor is dedicated to annexes: commercial activities - Waqf² - stores (activities, Waqf, stores), etc. The ground floor is reserved for businesses, with a passage with shops on either side, as well as the tombs of the Bey and his family. According to G. Marçais (1954) [17], this model was first introduced by the Ottomans in Algiers in 1622, and later to Constantine with the mosques of Djamaa Lakhdar and Sidi el Kettani (G.Marçais , 1954, P.427). [17]</p> <p>Tombs of the Bey and his family: (his wife and son, among others). Located in a closed room on the ground floor of the mosque. This tradition was introduced in Constantine by the Ottomans. In fact, several Ottoman mosques in Turkey contained the tombs of rulers and their families, such as the Suleiman the Magnificent complex (Sakir Çakmak,2024). [18]</p> <p>Annexed Madrasa: Salah Bey ordered the construction of a madrasa next to the Lakhdar mosque in 1789 (At the time, madrasas served as theological education institutes, not to be confused with primary schools called Kouttab). It is reported that Sheikh Abd el Hamid Ben Badis³ trained his disciples at this madrasa (Courreye, Charlotte, 2024, P.162-179) [19]. It should be noted that it was common for the Ottomans to place mosques within a larger complex consisting of souks, hammams, and madrasas, imitating the Ottoman complexes known as külliye (urban complexes; the word külliye comes from the Arabic word "koul", meaning "the whole").</p>

2 Waqf : is an Islamic legal concept of a charitable endowment where a person dedicates some property or assets in perpetuity for religious or charitable purposes.
³ Ibn Badis (1889-1940) was an influential Algerian Islamic scholar and reformer. He was the founder of the Association of Algerian Muslim Ulama (1931) and led an

Architectural/Structural Elements



FIGURE 14: Twisted Columns Supporting the Dikka

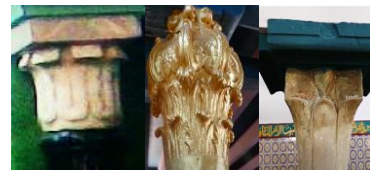


FIGURE 15: Capitals in the prayer hall

a- Almohad / b- Bulbous / c- Hafside ,Capitals

Smooth marble columns / twisted columns; and varied capitals: This mosque is distinguished by its twisted marble columns and its admirable sculpted capitals. These include Almohad style capitals (a) at the mihrab (on two paired columns); bulbous capitals with pinecone designs at the corner of the Dikka (b) — unique in Algeria according to R.Bourouiba (1987) [14] — and Hafside style capitals (c) above the smooth column (supporting the Dikka).

important Islamic reform movement in Algeria during French colonial rule.

He focused on preserving Algerian-Arab identity, Religious-Islamic and social reforms, his famous slogan was "Islam is my religion, Arabic is my language, Algeria is my homeland."

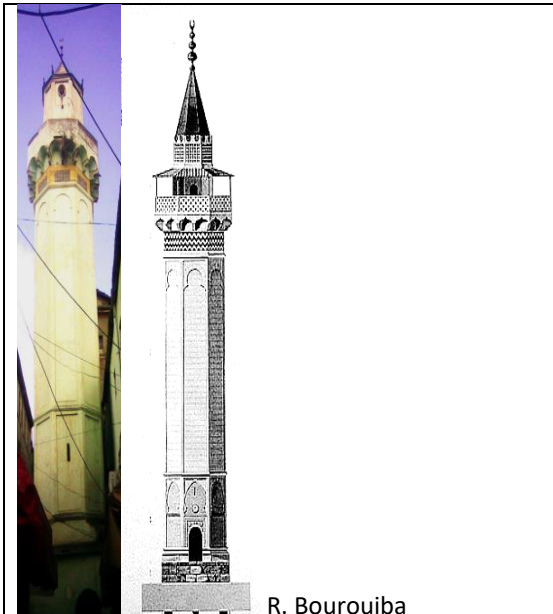


FIGURE 16: Octagonal Minaret

Use of an Octagonal Minaret:

In Algeria, the octagonal minaret first appeared in the Djamaa El Saffar mosque (1535) in Algiers and later at Djamaa Lakhdar in Constantine. It has a single minaret at the northeast corner, with a square base surmounted by an octagonal shaft with two levels. A lantern is placed atop the shaft, finished with a pyramidal roof, and niches with consoles form the support for the balcony.

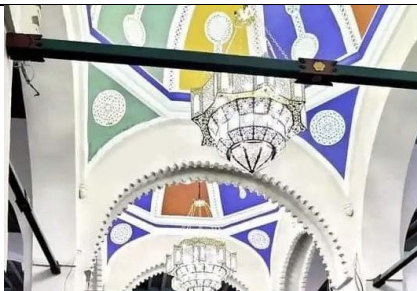


Figure 17: Pendants

Pendants for the dome / (after restoration in 2023)

The structures connecting the base of the dome to the supporting elements at the four corners are squinches, pendants, or muqarnas (stalactites). Here, the two octagonal-based domes each feature four pendants, reflecting Ottoman influence.



Figure 18: dikka in the prayer hall

Presence of Dikka:
A wooden platform supported by four columns located at the 4th bay of the central nave, perpendicular to the qibla wall. This common element in Ottoman mosques is used by the muezzin for the final call to prayer. It was, however, introduced to Algeria by the Ottomans.

Aesthetic Aspects



Figure 19: Calligraphy (Thuluth style)

Calligraphy (Thuluth style): The most commonly used styles in Constantine are Maghrebi Naskh, Kufic, and Thuluth, the latter being used by the Ottomans. Here, we find epigraphic friezes in Naskh and Thuluth: "Above the ceramic tiles continues an inscription reproducing a few verses from the Borda, a poem composed by Al-Busiri in honor of the Prophet." (R.Bourouiba, 1974 , p.113) [20]



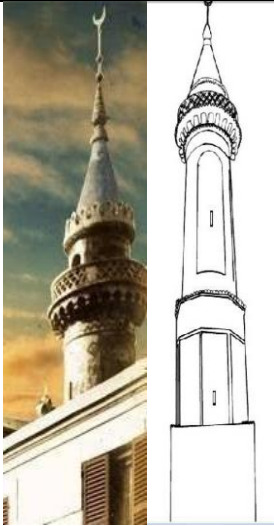
Figure 20: Ceramic tiles

Ceramic tiles: called zellige in the Greater Maghreb, these tiles display a variety of motifs. These include stylized vegetal patterns, such as digitate leaves, dianthus flowers, four-petaled flowers, eight-lobed rosettes, stems, and geometric designs like eight-pointed rosettes, interlacing patterns, and twelve-pointed stars

2-2-3-SIDI EL-KETTANI MOSQUE:
Better known as Djamaa El Kettani or El Kettania (referring to the ensemble of mosque, madrasa, and tombs, also known as Salah Bey). Its construction dates

back to 1776, on the edge of the famous Souk El Aser near the Casbah. It illustrates the strong reign of Bey Saleh Ben Mostafa (1771-1792 CE / 1185-1207 AH), who was one of the most significant beys of Constantine. He also laid the foundations of the madrasa, an annex intended for higher education for all the youth of the province.

Table 05: Monograph of Sidi el Kettani Mosque

Design	
	
Figure 21: Entrance of sidi el kettani mosque	
Monumental Entrance: The Sidi el Kettani Mosque features two exterior facades. The main facade, opening onto the square, is adorned with a projecting porch decorated on all three sides.	
	
Figure 22 :Cylindrical (Tapered) Minaret:	
Cylindrical (Tapered) Minaret: The minaret of Sidi el Kettani consists of a cylindrical main tower (pencil-shaped), in contrast to the square minaret of the Hassan Bey Mosque and the octagonal minaret of the Sidi Lakhdar Mosque. It is topped with a balcony and a conical shape at its	

summit. The cylindrical minaret design first appeared in Iraq during the Abbasid era, and later developed and widely used by the Ottomans in their mosques. In Algeria, the first cylindrical minaret was that of the Sidi el Kettani Mosque, followed by the Salah Bey Mosque in Annaba; both were constructed during the reign of Salah Bey. (K.Ben Bella,2008 , P.294-295) [21]



Figure 23: marble minbar

Marble Minbar: While the minbars of the Souk el Ghezal and Lakhdar mosques are made of wood—typical of Maghreb mosques—the present minbar is made of marble. It is a true masterpiece imported from Livorno, Italy, where Salah Bey sourced most of the precious construction materials.



Figure 24: dikka

Dikka: This is a wooden platform supported by four marble columns.

 <p>Figure 25:Marble columns</p>	 <p>Figure 26:</p>
<p>Marble columns</p>  <p>Figure 26:</p>	<p>Composite capitals</p>  <p>Figure 27:</p>
<p>Use of Zellige with floral and geometric patterns: As seen in the mosques of Hassan Bey and Lakhdar, most of the walls in the prayer hall of Sidi El Kettani are covered with zellige, featuring floral patterns, especially the "tulip" flower and the "dianthus" flower.</p>	<p>Shell-shaped trompe</p>
 <p>Figure 28:</p>	 <p>Figure 29: Wooden carved door</p>

<p>Use of colored stained glass (a) for windows and musharabiya screens (b) like in the Hassan Bey mosque, colored stained glass is an Ottoman influence.</p>	<p>Wooden carved door</p>
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RESULTS AND DISCUSSION:

In summary, we can easily identify the style called 'local Ottoman' through the adaptation of the local 'Moorish' style, introducing some Ottoman touches in the analyzed mosques as follows:

*On the conceptual level:

The design of suspended mosques reflects Ottoman influence, where the prayer hall is located on the upper floor, such as in the Sidi Lakhdar and Sidi El Kettani mosques. The ground floor is reserved for shops, waqf properties, or annexes like madrassas, tombs, etc. Notably, the use of the "Dikka," which was uncommon in Algerian mosques before the Ottoman arrival, is present. Additionally, the marble minbar imported from Italy for the Sidi El Kettani mosque contrasts with the Maghreb tradition of using wooden minbars, as seen in the Hassan Bey and Sidi Lakhdar mosques. Stone or marble minbars were introduced to Algeria by the Ottomans, such as the minbar of As'sayda mosque in Algiers, later moved to Djamaa El Djedid – Algiers (K.Ben Bella, 2008, P. 310). [21]

Regarding minarets, while the minaret of Sidi El Kettani mosque is cylindrical, that of Sidi Lakhdar mosque is octagonal, contrasting with the square-sectioned Maghrebi minarets like that of Hassan Bey mosque. Traditionally, mosques in the Muslim West featured a single tower-like minaret (R.Bourouiba,P.266) [14] – the "Maghrebi minaret" – until the Ottomans arrived, merging local traditions with Ottoman influences. Algeria's first cylindrical minaret was built for Sidi El Kettani mosque, followed by Salah Bey mosque in Annaba. The first octagonal minaret was constructed in Djamaa El Saffar (1535) in Algiers, followed by Sidi Lakhdar mosque and Djamaa El Bacha in Oran (1792) (A.M.Laaradj,2002, P.532) [22], as well as the external (1818) and internal (1818) mosques of Algiers' Casbah. (all from ottoman era in Algeria)

*Urban planning:

The three mosques were constructed in harmony with the urban fabric. While marked by monumental features compared to residential areas, they were functionally integrated into the urban ensemble of markets, hammams, palaces, etc., often with annexed madrassas. These mosques were not isolated from the urban atmosphere or social life of their time – a quality that is often sought after in contemporary projects.

*Aesthetic/decorative aspects:

The wall coverings, featuring zellige (ceramic tiles) in the Moorish style, highlight Ottoman influence in themes and motifs. This includes colorful stained glass and Tulut-style calligraphy, which were widely used by the Ottomans, alongside local styles such as Naskh or Kufic, expertly crafted by Maghrebi artisans skilled in chiseling stucco with varied patterns. The imported Italian marble minbar reflects the use of foreign materials in Ottoman-era monuments, especially in mosques and Bey palaces.

CONCLUSION:

In summary, mosque architecture of this era reflects a fusion of the local Moorish style with foreign Ottoman elements. The three mosques have an Arab plan, with or without a courtyard, and feature hypostyle prayer halls with columns or pillars supporting slanted tiled roofs. None of them adopted the Ottoman plan of large domes and slender minarets, which are common in many other Ottoman-era mosques in Algeria. We can conclude that despite nearly three centuries of Ottoman presence and the construction of hundreds of mosques in major cities (Algiers, Constantine, etc.), the urban skyline of these cities was not significantly marked by Ottoman religious architecture, which is typically characterized by slender minarets, cascading domes, and spherical roof forms. However, the isolated Ottoman influences identified in these mosques could inspire contemporary mosque designers to emphasize the regional architectural specificities of Constantine's mosques, granting them a unique and distinctive architectural identity.

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