

Interpretazioni locali del modello di moschea araba nelle regioni sahariane. Ri-esplorazione dello Ziban nel sud-est dell'Algeria

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L'architettura della moschea araba è stata interpretata in due modi diversi. Nelle grandi capitali, le moschee venivano costruite sotto il patrocinio dei sovrani, che conferivano loro un aspetto monumentale. Era l'epoca dell'emergere del cosiddetto stile "ispano-maghrebino" o "ispano-moresco" che rifletteva la potenza e il prestigio dei governanti. Al contrario, nei villaggi e nelle frazioni, l'adozione del modello di moschea araba era un'arte vernacolare, come nelle regioni sahariane dell'Algeria. Questo articolo indaga le interpretazioni locali del modello di moschea araba prendendo come caso di studio le moschee vernacolari della regione di Ziban. La ricerca ha seguito approcci sia storici che visivi e i dati sono stati raccolti da diari di viaggio, documenti grafici, rilievi architettonici, fotografie d'epoca e interrogando i residenti. I risultati hanno dimostrato che la prima moschea di Okba Ibn Nafaa è stata un modello generativo per le successive dello Ziban. Queste moschee sono caratterizzate dall'uso di materiali da costruzione vernacolari di argilla e legno di palma. Inoltre, l'indagine ha rivelato che il riutilizzo delle rovine romane è una pratica molto antica nello Ziban, come dimostrano le numerose moschee situate nei ksour, vicino alla linea del Limes.

Towards an Understanding of the Local Interpretations of the Arab Mosque Model in the Saharan Regions. Re-exploration of the Ziban in South-Eastern Algeria

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With the growth and spread of Islam since the 7th century, mosques have become significant evidence of the commitment of Muslim communities to religious and ritual life. Due to their functions, mosques are considered the representative buildings of Islamic civilisation. The architectural styles of mosques, as well as their size and shape, vary depending on the region, the density of the population they served, the local building culture, and exogenous contributions¹. Three main styles of mosques emerged over time according to the countries or lands of their origin: the Arab style, characterised by a covered prayer hall adjoining an open courtyard bordered by a portico; the Persian style, known by the iwan and the bulbous dome; and the Ottoman style, distinguished by the monumental dome inspired by Christian architecture. Undoubtedly, each of these styles has its own regional and chronological evolution.

After Islamisation of the Berber Maghreb, Algeria adopted the Arab mosque model but with local interpretations. Indeed, during the governance of the local dynasties in the Maghreb, the architecture of the Arab mosque evolved and was interpreted in two different ways. In major capitals, the mosques

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1. KRAJCARZ 2017.

were constructed under the patronage of the rulers, who gave them a monumental appearance. This was the time of the emergence of the so-called “Hispano-Maghreb” or “Hispano-Moorish” style, which reflected the potency and prestige of the dynasties². On the other hand, in villages and hamlets, the adoption of the Arab mosque model was a “vernacular art” par excellence, notably in Algeria’s Saharan regions.

The Ziban region, located in south-eastern Algeria, constitutes an important field of investigation, particularly with regard to religious heritage, its state of conservation, and its management. In this region, the design, outline, morphology, and materiality of the vernacular mosques express the characteristics of Saharan identity. Indeed, these mosques were built and maintained by the local people according to their modest know-how. Thus, the traditional community was completely responsible for the style of the vernacular mosques and their appearance. From this, the research questions are detailed as follows: did the Ziban region adopt the design of the Arab mosque model or develop its own style according to the local environment? How and in what aspects did the Arab mosque model serve as a basis for the design of the Ziban mosques? What are the constant and changing morphological components in comparison to the Arab mosque model, which flourished in the Maghreb? Is it possible to discuss a certain local style?

This article contributes to the understanding of religious heritage through the formulation of a critical discussion of vernacular mosques in the Ziban region. In particular, it aims to analyse and interpret the typology of these mosques as well as to identify their correlation with the Arab mosque model.

To achieve this objective, the present article followed both historical and visual approaches. The analysis was based on the three types of relationships between form and context (physical and human factors) that Borie, Micheloni, and Pinon³ presented in their work, *Forme et déformation des objets architecturaux et urbains*. These are, successively, the production relationship, the reference relationship, and the meaning relationship. As for the data collection, a combination of research techniques and tools was used:

- texts and travelogues describing the architecture of the mosques;
- graphic documents about mosques sourced from the local archives of the Directorate of Culture;
- old and current photographs of the mosques as well as on-site architectural surveys;
- oral history of the residents.

2. BENYOUCEF 2005, p. 14,18.

3. BORIE, MICHELONI, PINON 2006, p. 15.

The study corpus consists of mosques built from the 7th century until the beginning of the second half of the 20th century. The study was interested in the authentic aspect of the mosques and/or those restored to their original state. For this purpose, investigations were carried out on each mosque. In cases where the mosque is transformed or partially collapsed, a reproduction of its spatial layout was done based on the users' descriptions of the mosque as well as on a logical interpretation of its design. It should be noted that some of the drawings used in this article are only organisational schemes and not detailed drawings; they are intended to highlight the design logic of the architecture studied.

The Ziban region: general considerations for understanding the case study

The Ziban region is located in south-eastern Algeria. It is considered the gateway to the Sahara because of its location in the north of the Sahara. The Ziban is formed of many sub-regions, the capital of which is Biskra.

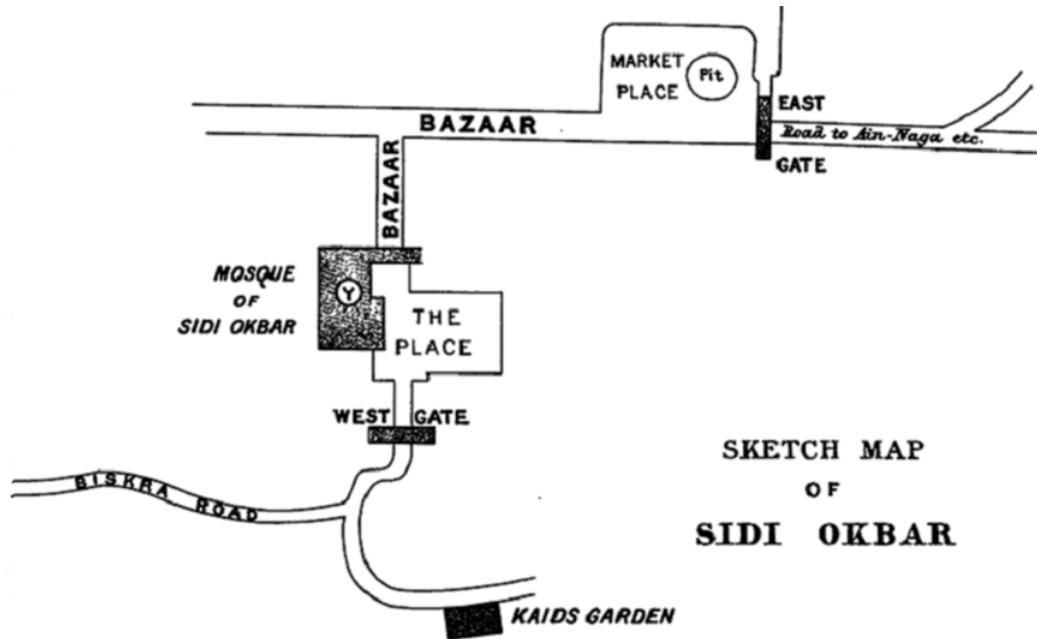
Like most of the Saharan regions, the urbanisation in the Ziban took the form of ksour (plural of ksar). These were founded and evolved under the influence of many factors: geographical factors (location, amenities), religious factors (presence and fame of the wali or marabout), historical factors (evolution of political power and relations between the sedentary and nomadic people), and economic factors (evolution of the caravan trade and the influence of the local market)⁴. The ksour were named after a sedentary community, a significant place, a pious figure, or the geomorphological characteristics of the settlement site.

The Ksour adopted the same urban planning principles as the Arab-Muslim medinas: fortification, centrality around a religious building and the marketplace, as well as the hierarchy from public to private. The main characteristic that distinguishes the Ksour from the Arab-Muslim medinas is their location in the Saharan zone, where the climate is hot and arid. In addition, the ksour constituted an important element of the oasis system.

In the Ziban, the evolution of the ksour generally respected a concentric order. The central area was developed around the jamaa mosque (congregational mosque) and the marketplace for trade and exchange with other communities, followed by the houses, which formed a kind of urban labyrinth (fig. 1). The central area was thus the heart of the traditional urban fabric.

Because of the linear evolution of the urban morphology of the Ksour of old Biskra, the mosques were positioned along the streets and not near the marketplaces, which did not exist in these Ksour

4. KOUZMINE 2007, pp. 55-56.



Figures 1a-c. The position of the Okba Ibn Nafaa mosque near the marketplace: above, sketch map of the mosque's location in the ksar of Sidi Okba (PEASE 1893, pp. 62-63); below on the left, old view of the marketplace of the ksar (<https://www.delcampe.net/fr/collections/cartes-postales/algerie/autres-villes/algerie-sidi-okba-le-marche-112154229.html>, accessed 2 March 2022); below on the right, old view of the place in front of the mosque (https://www.delcampe.net/static/img_large/auktion/000/103/458/814_001.jpg?v=0, accessed 2 March 2022).

(fig. 2). It is worth mentioning that in old Biskra there was a market for the trade of dates near the Turkish-Ottoman fortification (casbah), but it did not have a great influence.

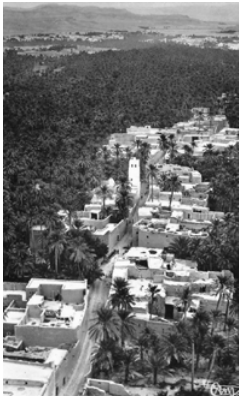
The traditional houses were irregularly shaped and followed almost the same model, consisting mainly of an open courtyard surrounded by a few rooms. A room on the terrace was used as a storage place for dried fruits and vegetables. These houses had a blind and introverted appearance: windows are small to protect the privacy of the occupants from the gaze of strangers, and in many houses, there were no windows overlooking the street. The open courtyards were thus vital spaces in the houses.

The traditional houses of the Ziban region were influenced by locally available materials. They are considered to be earthen architecture, as they were mainly built with adobe (*thob*), which was produced manually in different stages⁵ (fig. 3): 1) extraction of clay from a precise depth; 2) preparation of wooden moulds with precise dimensions; 3) preparation of a homogeneous paste (clay + water); 4) kneading the clay paste by feet; 5) incorporating straw (fibrous material); 6) shaping and sun-drying the bricks.

Using adobe, thick load-bearing walls were constructed on strip foundations. The bases of buildings were usually made of river stones (brought from the oueds) to protect the walls from the capillary rise of water and erosion of their bases during rains or the flooding of the oueds, despite their rarity in the region. The walls were coated with clay-based mortar, giving the buildings a rough appearance.

In the desert environment, the palms provided the building materials. The palms used for construction were those available on-site after natural or accidental damage, or even after a forced elimination (usually for palms that were not productive). Palm trunks were used entirely (for pillars) or longitudinally divided into two or four parts (for beams, joists, and lintel). Roofs were made of palm trunk beams and covered with palm fronds and a layer of clay. The palm wood pillars were usually placed on a stone plinth to avoid damage from direct contact with the house's floor. It should be noted that before palm wood was used in construction, builders treated it with salt water to repel insects. Then it was dried in the sun to prevent its deformation.

All the traditional houses in the Ziban had a flat accessible terrace supported by load-bearing walls and palm trunk pillars. These houses were low and not very extensive, as the mechanical properties, notably the low resistance to bending, of the palm trunks used for the horizontal structure, did not allow for the construction of large-span roofs.



Figures 2a-c. The position of the mosque along the street in old Biskra: above, map of the oasis of old Biskra (PEASE 1893, pp. 24-25); below, views of the ksar of Rass El-Geuria (https://www.facebook.com/photo/?fbid=1340158689397059&set=pcb.1289122244536285&locale=ja_JP, accessed 1 February 2022; <https://picclick.fr/CPA-AK-Alg%C3%A9rie-Biskra-Vue-a%C3%A9rienne-238721-314516350994.html>, accessed 1 February 2022).



Figures 3a-f. The stages of adobe production during the restoration of the ksar of Lichana in 2015 (photos S. Zerari, V. Pace, L. Sriti, 2015).

Analysis of the mosques of the Ziban in search of form-context relationships

The religious architecture of the Ziban region mainly concerns three institutions: the mosques, the *zawaya* (plural of *zawiya*), and the mausoleums of the *wali*. Throughout the history of the Ziban region, the architecture of the mosques, their styles, layouts, and decoration can reveal details about the religious and ritual life of the local people, as well as the social and cultural backgrounds of the builders.

The outline of the present analysis is based on the three types of form-context relationships. These are, successively, the production relationship, the reference relationship, and the meaning relationship. In the production relationship, forms appear as products of human culture and the physical context in which they are found (location, climate, etc.). The forms are studied through function and architectural space rather than directly as they are. As for the reference relationship, the forms appear as the result of a definite model. In the case of the meaning relationship, the forms establish a relationship with an idea or thought; it is thus a question of the retroaction of forms as a sign on their context and no longer about the influence of context on forms⁶.

6. BORIE, MICHELONI, PINON 2006, p. 15.

At first glance, it appears that the heritage mosques in the Ziban followed the design logic of the Arab mosque model with local interpretations. As the Ziban was not one of the main capitals of the local dynasties that ruled the central Maghreb, these mosques were built and maintained voluntarily by the local people according to their modest expertise. The building process was thus a vernacular art, and most mosques were built with palm wood and clay. In his book, “L’esthétique: origine des arts, le goût et le génie, définition de l’art et de l’esthétique”, Veron confirmed that traditional religious architecture often has morphological similarities and a constant relationship with existing houses⁷. In a French military research mission, Commander Cauvet did not hesitate to mention this note to elucidate the diversity of funerary and votive monuments in North Africa⁸. Moreover, several European travellers and tourists have revealed this relationship in their writings on the Ziban.

The mosques of the Ziban were not only gathering places for the prayer rituals but also complexes that contained supplementary spaces intended for a variety of social and cultural practices. As for their interiors, Abbot Hurabielle entered some of the traditional mosques located in old Biskra and noted the similarity between the houses and these places of worship. He said:

«L’intérieur des mosquées est pauvre et presque nu [...]. Quelques colonnes en troncs de palmiers soutiennent une voûte en stipes ; le sol est en terre battue, quelquefois recouverte de nattes d’alfa ; dans un coin, une niche, un placard, quelques vases de terre, une lampe, des oeufs d’autruche et des versets manuscrits du Coran. Cette simplicité du sanctuaire s’harmonise admirablement avec les habitations circonvoisines ; mais, malgré leur dénuement, les mosquées sont fréquentées par les pieux musulmans, et quand reviennent certaines fêtes, elles sont même trop petites pour contenir tous les dévots»⁹.

Despite the subjectivity of this description, it can be attributed to most traditional mosques in the Ziban. The only similarities between mosques and houses appear to be limited to the use of vernacular building materials (palm wood and clay); they all belong to earthen architecture. This neither enhances nor diminishes the sacredness of these places of prayer. Indeed, the value of traditional mosques stems from the abstraction of their physical forms, which are purely functional and devoid of any decoration. Islam refuses to glorify itself through grandiose buildings.

Because of the fragility of the building system made of earthen materials and palm wood, many traditional mosques have deteriorated over time (figs. 4-5). It should be mentioned that the Ziban region is outside the seismic zone; groundwater and rainwater are the main factors affecting the

7. VERON 1878, p. 187.

8. CAUVET 1923, p. 285.

9. HURABIELLE 1899, p. 51.



Figures 4a-c. Old exterior views of deteriorated mosques in the Ziban region: above, the Sidi Ben Fadhel mosque in old Biskra (http://2.bp.blogspot.com/_8bDSAQY5mVI/S6T5b5k0HNI/AAAAAAAAAmU/29MZcfxlb98/s1600/jeuffrin.jpg, accessed 2 February); below on the left, the Sidi Al-Haffi mosque (<https://upload.wikimedia.org/wikipedia/commons/5/5b/Sidi-Okba2.jpg>, accessed 2 February 2022); below on the right, the Feliach mosque (https://www.delcampe.net/static/img_large/auction/001/222/152/190_001.jpg, accessed 4 March 2022).



Figures 5a-e. Current exterior and interior views of the Sidi Mohamed Ben Othmane mosque in Bentius locality (photos S. Zerari, V. Pace, L. Sriti, 2022): above, erosion of the façades; below from left to right, the roof of the prayer hall and the arcades of the prayer hall.

stability of heritage buildings whether religious or residential. In fact, the humidity of given earthen buildings is naturally balanced with the relative humidity of the air, the so-called “water balance”. However, an excess of water can deteriorate the cohesion of the walls and the roofs. The continuous rise in groundwater causes a progressive erosion of the base of walls. In addition, rainwater can destroy earthen buildings through splashing and run-off. The vulnerability of these buildings is that their surfaces can fissure and delaminate in the wake of aridification. They are therefore weak in times of rainfall, although this is rare, which prevents them from surviving very long. If there are defects in the execution of the flat roof, such as the absence of a slope for rainwater evacuation, the damage will be worse because rainwater stagnates on the lower horizontal surfaces. This leads to the infiltration of rainwater from the terraces of the buildings.

The effect of wind is relatively negligible, as human settlements are protected by ingenious strategies such as the compactness of buildings and the presence of palm groves surrounding the ksour.

Since independence from French colonisation in 1962, the vernacular built environment has undergone too many changes. According to the testimonies of the residents, this environment has been deliberately demolished to rebuild it in a more resistant and cleaner way, using modern construction techniques. Mosques, as communal buildings, have been subjected to such acts. Many vernacular mosques have been completely demolished and reconstructed without inventorying their architecture or archiving any graphic trace of their original design, while others have been maintained by unprofessional interventions or abandoned by the residents.

In this context, the Bouchagroune mosque (also known as the Sidi Aissa mosque) is an example. It was destroyed by floods in 1969, and only its minaret survived. Subsequently, the principal building of this mosque was rebuilt with a new design, neglecting its original spatiality and materiality. At that time, the local authorities were principally interested in renewal rather than conservation and management of cultural heritage. Fortunately, between 1876 and 1882, Didier¹⁰ sketched this mosque, and accordingly, its plan has been conserved (fig. 6).

It is essential to mention that modern techniques have increasingly replaced traditional building techniques. Therefore, the number of mosques that retained their original features is very low in the Ziban.

Because of its position on the Limes line, the Ziban region conceals many archaeological sites that the local people exploited to build more resistant and durable mosques. Indeed, certain layouts of the ruined ancient settlements have imposed specific forms on the mosques. As confirmed by Hurabielle¹¹

10. DIDIER 1876-1882.

11. HURABIELLE 1899, p. 154.

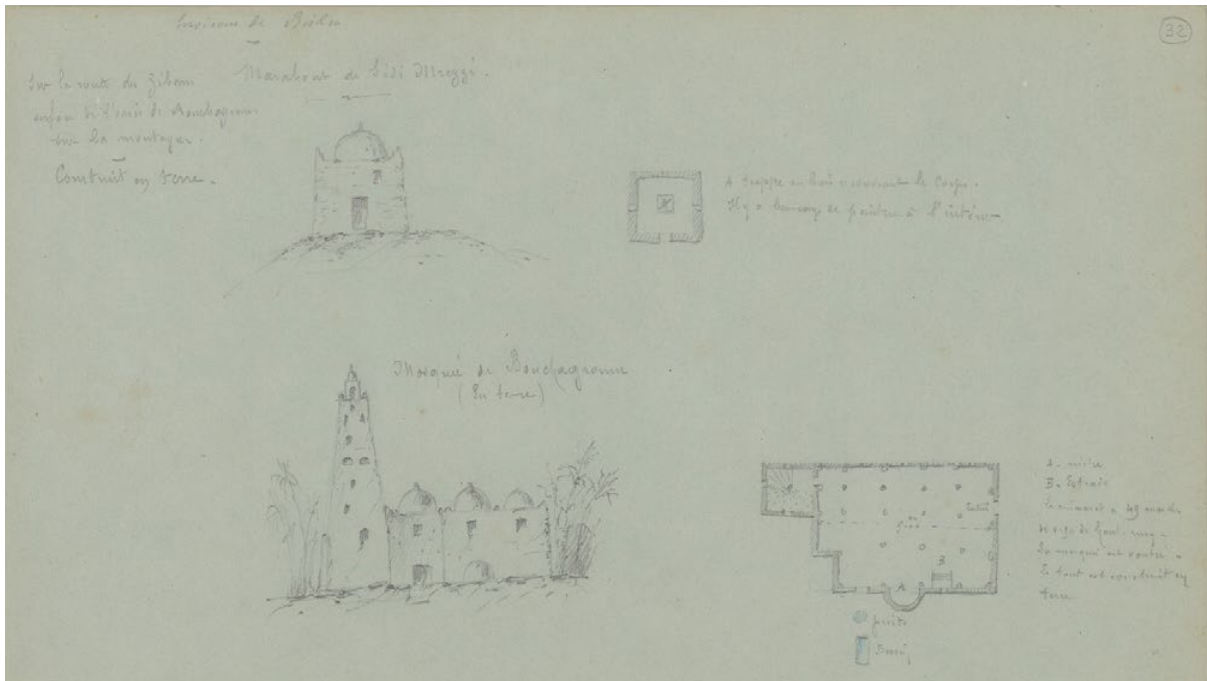


Figure 6. At the inferior part of the panel, a sketch of the Bouchagroune mosque (DIDIER 1876-1882, Bibliothèque nationale de France, département Cartes et plans, GE FF-21248 (RES) online from 25 december 2016).

and Cataldo¹², an example is the Al-Atik mosque in Tolga, which was founded on a Byzantine Castellum, and the base of the walls was constructed of reused stones.

In the history of Islamic architecture, some universal mosques demonstrate the same practice, such as the Great Mosque of Damascus and the Great Mosque of Kairouan, which were built on pre-existing ruins. The Great Mosque of Damascus is located on a site that reflects the long and eventful history of the city. This early mosque was inspired primarily by the Prophet's mosque (PBUH) in Medina, but its morphological appearance was influenced by the constraints of the old temple (some of the outer walls of this temple have remained)¹³. Similarly, the Great Mosque of Kairouan's base and enclosure

12. CATALDO 1988, p. 110.

13. BENYOUCEF 2005, p. 28.

walls were built from the reuse of Byzantine fortresses¹⁴. In addition, the mosque of Al-Kufa was built in 638 with columns and bricks brought from the Sassanid palaces¹⁵.

In the Ziban, the reuse of building materials appears to be a very early practice, as attested by numerous examples of traditional mosques. In the case of the Okba Ibn Nafaa mosque, its palm wood terrace is supported by twenty-six columns collected from a Roman archaeological site (Thabudeos) located in the north of the village of Sidi Okba¹⁶. As a principle of reuse, when the columns' height was insufficient, the builders used a piece of palm trunk to reach the desired height. These columns were reused without foundations¹⁷ and entirely coated with plaster, which gave them the appearance of single homogeneous pieces (fig. 7a). As for the Sahbi mosque, Morizot visited Thouda in November 2008 and described this mosque. This archaeologist revealed that the prayer hall is rectangular (9.90 x 5 m) and has two bays separated by four Roman columns. Outside this mosque, four other thinner fragments of columns are embedded in the west wall; they support semi-circular arches made of adobe. These arches are obstructed with adobe and may correspond to a third bay¹⁸ (fig. 7b). The minaret of the Sahbi mosque has disappeared, and there is no trace of its shape. For their part, Haoui and Chergui¹⁹ noted the reuse of pieces of columns and claustra made of stone in the Sidi Mohamed Ben Othmane mosque located in the locality of Bentious (fig. 5d).

In the locality of Ouled Djellel, the vernacular mosques were distinguished from the other mosques of the Ziban in that they were supported on the inside by marble columns extracted from the quarries on the banks of the oued Djedi (fig. 7c). This gave them a certain finesse that was not found elsewhere in the Ziban region.

In the northern Zab (*Zab Dahraoui*) and the southern Zab (*Zab Geubli*), a few mosques are covered with groin vaults supported by cylindrical stone columns. The Farfar mosque, the Al-Atik mosque in Tolga, and the Dachra mosque in the locality of Sidi Khaled are examples. These mosques are spacious because the groin vaults allow a wider span than the beams and joists of palm trunks used for flat roofs. In the eastern Zab (*Zab Chergui*), the prayer hall of the Al-Atik mosque in Zribet Al-Oued locality is supported by a series of adobe arcades, composed of rectangular pillars and semi-circular arches.

14. PIZZAFERRI 2011, I, p. 60.

15. SAADAOUÏ 2008.

16. CATALDO 1988, p. 116.

17. KHELIFA 2004.

18. MORIZOT 2010.

19. HAOUÏ, CHERGUI 2019.



Figures 7a-c. Views of the heritage mosques of the Ziban region: above on the left, the reuse of columns and capitals in the Okba Ibn Nafaa mosque (PIZZAFERRI 2011, I, p. 54); above on the right, the west wall of the Sahbi mosque (photo S. Zerari, V. Pace, L. Sriti, 2022); below, view inside the Ouled Djellel mosque (<https://i.ebayimg.com/images/g/AqwAAOSwSIBYxIWN/s-l1600.jpg>, accessed 20 January 2022).



Figures 8a-b. Interior views of the Al-Atik mosque in Zribet Al-Oued locality (Archives of the Directorate of Culture of Biskra): on the left, the arcades of the prayer hall; on the right, the olive wood roof.

The bays are covered by a flat olive wood roof (fig. 8). It should be noted that the locality of Zribet Al-Oued was abundant in olive trees, which probably justifies the use of their wood for construction instead of palm wood, as was the prevalent tradition in the Ziban.

The vernacular style can be influenced by exogenous contributions, giving it a hybrid appearance. The Al-Atik mosque in Tolga, which was restored by the French colonial authorities at the beginning of the 20th century, is an example. The intervention work made the main façade more symmetrical and elaborately decorated than previously, as evidenced by a comparison of two old photographs, before and after restoration. Indeed, each of the two openings of the main entrance was provided with a semi-circular arch and a frame composed of one band of faïence; some windows were obstructed, while others were enlarged and fitted with claustra. Recently, the local authorities have eliminated and replaced the ceramic frame as part of restoration work, but no operation has been undertaken to reproduce the original pattern of the faïence pieces (fig. 9).

By focusing on the reference relationship, Texier²⁰ visited the Okba Ibn Nafaa mosque in the Ziban and reported so valuable observations that could be exploited to analyse and discuss the religious architecture of the Ziban. Texier said, «Il était d'autant plus important de visiter cet édifice, qu'il a

20. Charles Texier was general inspector of civil buildings in Algeria during the French colonisation and was responsible for the conservation of historical monuments.



Figures 9a-d. Views of the main façade of the Al-Atik mosque in Tolga: above, the façade before and after French colonial restoration (<https://i.ebayimg.com/images/g/PLwAAOSwm~Fbht4-/s-l1600.png>, accessed 12 April 2022; https://upload.wikimedia.org/wikipedia/commons/7/70/Tolga_grandmosque.jpg, accessed 12 April 2022); below, the façade before recent restoration (Archives of the Directorate of Culture of Biskra, photos S. Zerari, V. Pace, L. Sriti, 2022).

servi de type à toutes les mosquées des oasis, et que c'est là qu'on commence à trouver ce caractère particulier d'architecture qu'on peut appeler architecture saharienne, qui a pour éléments principaux l'argile et le bois de dattier»²¹.

For her part, Oulebsir interpreted this quote concisely, considering that Texier found the Okba Ibn Nafaa mosque representative of a new architectural style unknown and less explored by most Western

21. TEXIER 1848.

architects. Unlike mosques in the Orient, which were built with stone and marble (noble materials), this mosque is distinguished by its vernacular materiality and is attributed to «Saharan architecture»²². In addition, Okba Ibn Nafaa mosque differs from the mosques of northern Algeria, especially those that were built during the governance of the local dynasties. It is the first mosque in Algeria and the Ziban in particular (fig. 10)²³. This early Saharan mosque served as a reference for subsequent mosques and thus constituted a generative model for the architecture of the Ziban vernacular mosques.

From what has just been said, it is evident that Texier and Oulebsir were primarily interested in the material aspects of the mosque and ignored two of its components: the minaret and the mausoleum. This suggests that the presence or absence of these components has little influence on the appearance of the local Saharan mosques from a general perspective, although it confirmed that a large number of vernacular mosques in the Ziban were associated with a mausoleum and an iconic minaret²⁴. The tombs still bear witness to this fact, despite the demolition and reconstruction of many mosques (including mausoleums) since the second half of the 20th century.

As for the construction process of the Okba Ibn Nafaa mosque, many European travellers, tourists, and researchers have written about it, but they have not developed a chronology of its construction process, except for Captain Simon's investigation. In brief, Simon, based principally on the work of great Arab thinkers and historians of the mediaeval period, managed to say that the date of the construction of the mausoleum (the cenotaph and its dome) is uncertain, but it is certainly a few years after Okba's decease. The entire mosque was constructed in stages, and there is no evidence to sequence them chronologically²⁵. Undoubtedly, this mosque was added to the mausoleum on the indication of a dervish honoured in the mountains to further commemorate this Arab-Muslim figure²⁶.

It should be noted that Okba Ibn Nafaa was an Arab general sent by Muawiya I²⁷ in 670 to lead the Muslim armies and propagate Islam and expand its territory. At the end of the 7th century, Okba deceased in Thouda with about 300 horsemen in a Berber ambush led by Koceila. Then, his body was transported from Thouda to a neighbouring village and buried there. Because of the extent of his sanctity, this village was named after him, the "village of Sidi Okba" (fig. 1).

22. OULEBSIR 2004, p. 101.

23. BOURUIBA 1986, p. 5; PIZZAFERI 2011, I, p. 54.

24. ZERARI, SRITI, PACE 2019; ZERARI, SRITI, PACE 2020.

25. SIMON 1909, p. 34.

26. HURABIELLE 1899, pp. 115-116; CATALDO 1988, p. 116.

27. Muawiya I was the first Umayyad caliph of Damascus.

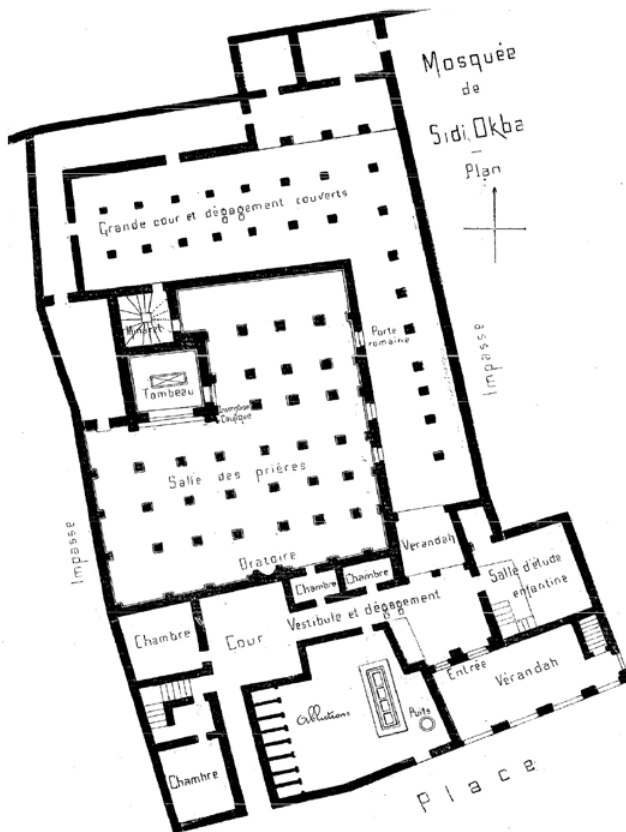


Figure 10. Plan of the Okba Ibn Nafaa mosque (SIMON 1909, no page).

André Ravéreau disclosed, during an interview conducted by Gilles Perraudin on June 11, 2003, that the Okba Ibn Nafaa mosque has a substantial heritage value. He said,

«La mosquée de Sidi Okba près de Biskra qui était d'aspect 'tordu' mais que je savais être intéressante et que le ministère voulait détruire. J'en avais fait une visite avec l'un des responsables de ce ministère, à qui j'avais expliqué la qualité de cette mosquée parce qu'elle avait des travées parallèles à la *qibla*, la position des fidèles en prière. [...] La travée d'origine la plus logique et la plus cohérente est celle qui est parallèle. Ainsi j'ai pu montrer que cette mosquée que l'on voulait détruire était une mosquée qui correspondait aux rites les plus anciens»²⁸.

28. BAUDOÛI, POTIÉ 2003, pp. 164-165.

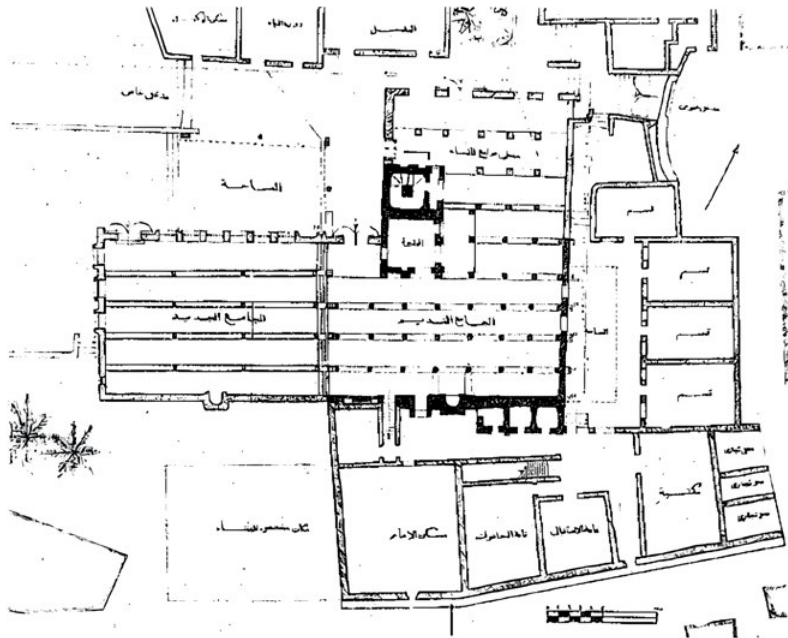


Figure 11. Plan of the Okba Ibn Nafaa mosque by André Ravéreau (BAUDOÏ, POTIÉ 2003, p. 164).

In addition to this description, Ravéreau sketched this mosque to highlight its architectural importance (figs. 11-12). Such an initiative changed the decision of the Ministry in question to preserve and classify the Okba Ibn Nafaa mosque as a national cultural heritage²⁹.

Based on the data presented thus far, it appears that the Okba Ibn Nafaa mosque marks the birth of religious architecture specific to Muslim worship. Since the form appears as a result of a defined model, this mosque itself has a reciprocal relationship, not revealed by the literature, with the layout of the Arab model mosque. However, due to the mausoleum's existence as a burial space, the Okba Ibn Nafaa mosque presents a significant variation that affected the religiosity of people and their ritual lives. Thus, the architecture of the vernacular mosques of the Ziban arose from the creation of a new sort of space dedicated to Muslim worship, influenced by the local social and cultural environment.

29. For more information on the general list of protected cultural heritage in Algeria, please visit <https://www.m-culture.gov.dz/index.php/fr/liste-des-biens-culturels> (accessed 15 May 2023).

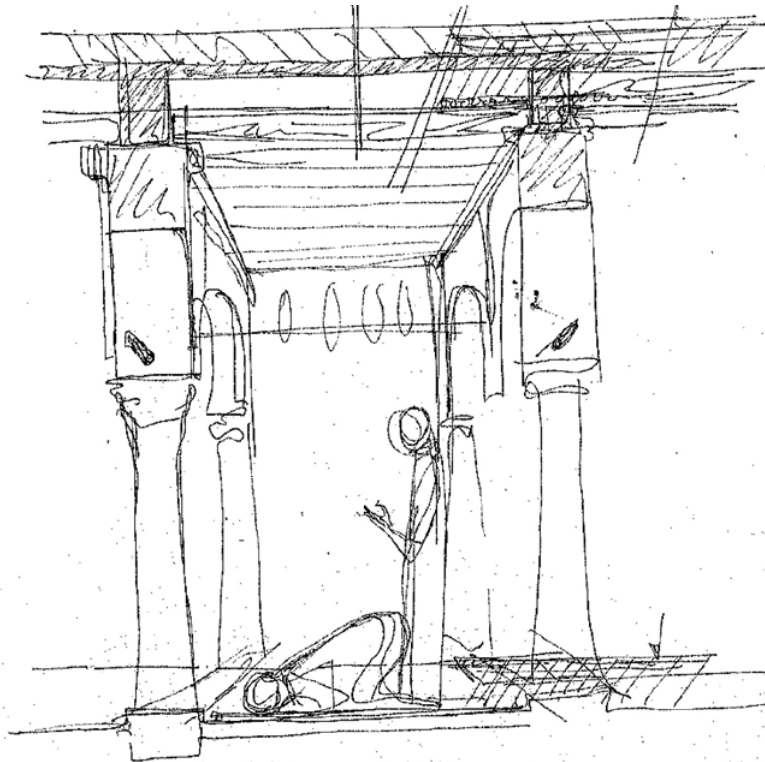


Figure 12. Sketch of a bay in the prayer hall of the Okba Ibn Nafaa mosque by André Ravéreau (BAUDOUÏ, POTIÉ 2003, p. 165).

The vernacular mosques in the Ziban were integrated into the ksourian urban fabric because their outward appearance is similar to that of flat-roofed houses; they were identifiable only by their iconic minaret and the dome above the mausoleum (fig. 4). It is worth noting that the architecture of these mosques combined sacred and funerary spatiality, which led them to function like *zawaya* but without any affiliation to a specific Sufi order. The number and size of the mosques depended on the density of the population and the size of the ksar itself. Indeed, the *jamaa* mosque constituted the core of the ksar; very often, other *masjid* mosques were built over time to house the worshippers during the daily prayers. For instance, at the end of the 19th century, De-Claparede described the oasis of Chetma mentioning two mosques. He said, «Il y a deux mosquées dans l'oasis, [...] qui ne diffèrent en rien extérieurement des autres habitations. L'une sert à la prière du vendredi [c'est-à-dire une



Figure 13. Interior view of jamaa mosque in Chetma. Painting by Maurice Bompard in 1890 (<https://www.wikiart.org/fr/maurice-bompard/mosquee-de-sidi-mohammed-chetma-1890>, accessed 4 April 2022).

mosquée jamaa], l'autre aux dévotions quoti-diennes des fidèles [c'est-à-dire une mosquée masjid]. La population compte environ douze ou quinze cents habitants, tous musulmans»³⁰.

In 1890, the French Maurice Bompard (1857-1935) painted an interior view of one of Chetma's mosques (fig. 13). An attentive perception of the painting reflects the materiality and immateriality of the prayer hall: a wooden roof supported by four reused stone columns, esparto³¹ rugs, slight daylighting, and most importantly, the worshippers waiting for prayer time, each of them is in a different position. This painting represents the jamaa mosque, as evidenced by the presence of a minbar, which is a stepped platform for preaching. Unfortunately, the authenticity and ambience in this mosque have been altered by unprofessional restoration work.

Most of the travelogues from the French colonial period have not provided sufficient information on the process of building traditional mosques in the Ziban. According to the testimonies of the population, however, these mosques were built collectively at the initiative of the local people or Muslim saints

30. DE CLAPAREDE 1896, pp. 63-64.

31. Esparto is a coarse grass with tough narrow leaves, native to Spain and North Africa. It is used to make ropes, wickerwork, and high-quality paper.

(*wali or marabout*) who resided in or visited the region. In the past, the people glorified the local saints, and there was not a palm grove or even a ksar that was not placed under their protection.³² As reported by Fréchox in his description of old Biskra (fig. 2), each ksar was built with its own mosque devoted to a Muslim saint who “lived in the time of legends”³³. Thus, the traditional mosques of the Ziban were either founded alongside pre-existing mausoleums, or the mausoleums were annexed to the mosques later in memory of Muslim saints whom the inhabitants intended to venerate. In general, Muslim saints were men, as women did not have sufficient authority to engage in public activities like those in northern Algeria. These saints dedicated their lives to religious teaching as well as to resolving the social, economic, and political issues of their community; usually, the traditional mosques were named after them. In the Ziban, there were few mosques without mausoleums.

Critical observation and comparison of the organisational schemas of traditional mosques reveal their design logic. As a rule, these places of worship were designed from the Qibla wall and evolved within an enclosure, separating the profane domain from the sacred space.

After the selection of a site and the collective preparation of building materials, the locals constructed a prayer hall in a relatively regular shape, followed by an open courtyard. Then, they built additional spaces around the courtyard, such as the *maqsurah* (room reserved for the imam), a religious teaching room, a storage room, etc. These additional spaces have been removed in most of the traditional mosques.

The ablution space, if existed, was either located inside or outside the mosque and was usually equipped with a well and a basin for ablutions (figs. 6, 7c, 10). As some mosques had no ablution space, it is almost certain that people performed the ablutions at home or used the water canals (*seguias*) that were available in the main streets (fig. 14a). Finally, a minaret, typically built on a square base, was added to give the mosque a distinct identity.

Open spaces, whether in houses or mosques, allow for adaptation to the harshness of the desert climate, characterised by high temperature differences between day and night. The presence of a mihrab in the courtyard of some mosques confirms that it was used as an open prayer space. Indeed, during the summer, the worshippers left the covered prayer hall at the time of the sunset prayer (*Maghreb*) and the night prayer (*Isha*) to perform them in the courtyard, taking advantage of the cool night air. In addition, the courtyard and portico of the mosques were used as cultural and social places during popular pilgrimage ceremonies (*ziyara*) of visiting the mausoleums of Muslim saints. Furthermore,

32. BELGUIDOUM 2005, pp. 226-227.

33. FRÉCHOX 1892, p. 37.



Figures 14a-c. From left to right, old postcard showing the use of canal water for ablution (<https://i.ebayimg.com/images/g/FwgAAOSwJJtbdqHK/s-l1600.jpg>, accessed 18 January 22) and old postcards showing a prayer on the terrace of the Sidi Moussa mosque in old Biskra (<https://www.pinterest.com/pin/458100593347994941/>, accessed 15 March 2022; <https://www.vitamedz.com/fr/Algerie/la-priere-a-sidi-170899-Photos-0-20155-1.html>, accessed 15 March 2022).

they were used as a place of meeting between the residents of the locality before each prayer time. The terrace and open courtyard of the mosques were often exploited when the covered hall is packed with worshippers, notably at the time of the Friday prayer (or weekly prayer) (figs. 14b-c, 15).

In Islam, it is preferable for women to worship at home rather than in the mosque. Indeed, the Prophet (PBUH) emphasised that women's prayers at home are more advantageous than praying in the mosque. For this reason, most probably, there was no prayer space reserved for women in the traditional mosques of the Ziban, as they used to pray at home. It is said that in the past, women tended to go to mosques exclusively to participate in popular pilgrimages and ritual practices.

Religious education is one of the most important and established traditions spread throughout the ksour of the Ziban. Most of the traditional mosques had a room dedicated to the instruction of the principles of the Islamic religion and the memorisation of the verses of the Coran for children. The teaching was done following traditional methods: the children assemble around the sheikh, who has



Figure 15. Old postcards showing the use of open space in the Okba Ibn Nafaa mosque: meeting in the portico (https://www.delcampe.net/static/img_large/auction/000/030/550/154_001.jpg?v=3, accessed 4 February 2022).

sufficient religious knowledge, and everyone is seated on esparto rugs. In 1892, Fréchox describing Biskra oasis said:

«Le Coran, qui impose ce respect à la volonté d'Allah est enseigné dans nombre de zaouïas, petites écoles religieuses installées dans une mesure de boue, sous l'abri des hauts palmiers, au bord d'une seguia. Un vieil Arabe à lunettes y tient, sous sa férule, une vingtaine de jeunes drôles, assis, les jambes croisées, sur un restant de natte. Leurs figures mutines où l'on devine des regrets de liberté perdue, des souvenirs d'école buissonnière, contraste avec l'austérité sainte du professeur. Tous tiennent sur les genoux une planchette blanche barbouillée d'hiéroglyphes arabes, et psalmodient en cadence les versets du livre saint, en soulignant d'une courbette chaque intonation»³⁴.

A few years later, in 1896, de Claparede wrote, «dans l'école attenante à la mosquée [de Okba Ibn Nafaa], vingt-cinq enfants récitaient, à tue-tête et tous ensemble selon la méthode orientale, la leçon que le maître, armé d'une longue gaule, leur indiquait»³⁵.

In the Ziban, there were outdoor schools, notably during the summer, to take advantage of the morning coolness. This oasis lifestyle attracted the interest of many European tourists, photographers, travellers, and painters. Such was the case of Henri Léopold Girardet (1848-1917), who did not hesitate to paint realistic views of traditional teaching in 1879 and 1881 (figs. 16-17).

34. FRÉCHOX 1892, p. 23.

35. DE CLAPAREDE 1896, pp. 57-58.



Figure 16. Traditional indoor teaching in Biskra. Painting by Henri Leopold Girardet in 1881 (<https://image.invaluable.com/housePhotos/artcurial/21/419321/H1118-L44120565.jpg>, accessed 2 February 2022).



Figure 17. Traditional outdoor teaching in Biskra. Painting by Henri Leopold Girardet in 1879 (<https://image.invaluable.com/housePhotos/sothebys/16/152316/H0046-L00484580.jpg>, accessed 2 February 2022).

According to their size and composition, the nature of religious life, and ritual practices, vernacular mosques of the Ziban can be divided into three main types: mosques with mausoleums, mosques without mausoleums, and funerary mosques (table. 1). The first two types of mosques are either “jamaa mosques” or “masjid mosques,” and their minaret often dominates the urban landscape. Funerary mosques, however, are characterised by the absence of a minaret, their limited size, and their location outside the city. They consist of two main spaces: the mausoleum of a Muslim saint and a small prayer room, which was at times used as a space for reciting and memorising the Coran.

It should be mentioned that there are isolated mausoleums, consisting principally of square-shaped burial spaces, sometimes preceded by a restricted open courtyard. Like funerary mosques, isolated mausoleums are mostly found outside of cities, notably in mountains and cemeteries. There are numerous isolated mausoleums in the Ziban, some of which are well-known and others unknown. An example of this is the mausoleum of Sidi Zerzour, located in the middle of the oued Biskra stream (fig. 2a); it was the subject of ceremonial visits on certain days, as Hurabielle reported in his travelogue: «au premier plan, le lit de la rivière [oued], presque toujours desséchée, à part quelques ruisseaux [...]; au milieu se dresse, blanc comme un cygne, le marabout de Sidi Zerzour, théâtre, en de certains jours, de fêtes religieuses fort bruyantes»³⁶.

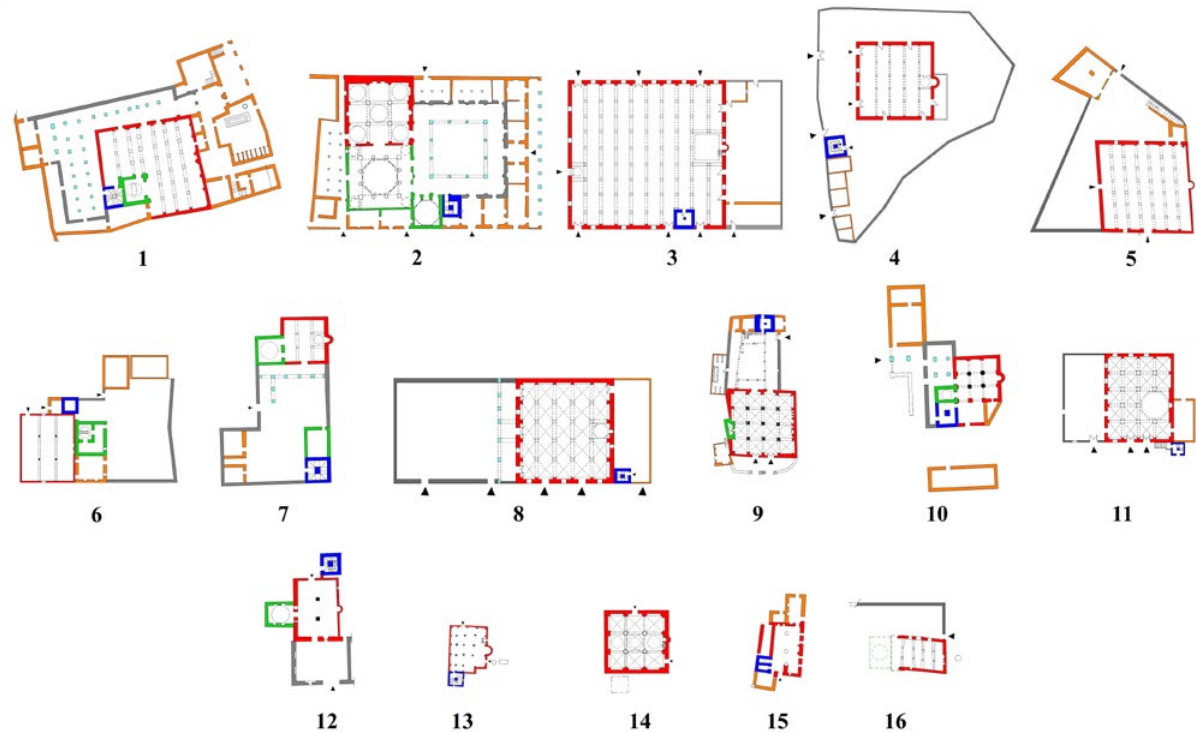
In addition to all these sacred and funerary buildings, there is another space of worship in the Ziban, that of the “musalah”. Traditionally, it was a public open space outside a mosque, principally used for the two Eid prayers (Eid al-Fitr and Eid al-Adha) according to the Sunnah (figs. 18a-d). With the development of society and architecture, the term “musalah” has been used to refer to any public or private place where prayer is performed (for example, a prayer room in a school or institution).

Mosques have elements that respond to the meaning relationship. Indeed, the Ziban mosques, whatever their location, are oriented towards Mecca where the Kaaba is located. The orientation towards this sacred point is the symbolic equivalent of the straight religious path. It is indicated by a mihrab, a niche carved in the middle of the Qibla wall, usually semi-circular in shape and rising in a semi-cylinder. The sacredness of the mihrab stems not from its form but from the direction it points.

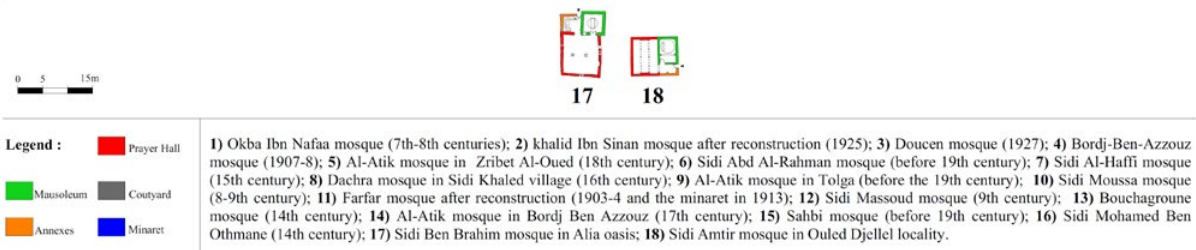
As for the minarets, their role is to call aloud the prayer (Adhan) five times a day, affecting the Ziban Muslim community with a divine awakening reminiscent of paradise, as prayer is one of the five pillars of Islam. The Adhan is a public announcement with standardised phrases in the form of an intoned recitation. During an excursion to the oasis of old Biskra, Fréchox recounted his feelings towards the Adhan. He said, «soudain, du haut du minaret voisin, à peine entrevu sous la haute envolée des

36. HURABIELLE 1898, p. 54.

Spatial layout of jamaa mosques and masjid mosques



Spatial layout of funerary mosques



Legend :	Prayer Hall
Mausoleum	Courtyard
Annexes	Minaret

1) Okba Ibn Nafaa mosque (7th-8th centuries); 2) Khalid Ibn Sinan mosque after reconstruction (1925); 3) Doucen mosque (1927); 4) Bordj-Ben-Azzouz mosque (1907-8); 5) Al-Atik mosque in Zribet Al-Oued (18th century); 6) Sidi Abd Al-Rahman mosque (before 19th century); 7) Sidi Al-Haffi mosque (15th century); 8) Dachra mosque in Sidi Khaled village (16th century); 9) Al-Atik mosque in Tolga (before the 19th century); 10) Sidi Moussa mosque (8-9th century); 11) Farfar mosque after reconstruction (1903-4 and the minaret in 1913); 12) Sidi Massoud mosque (9th century); 13) Bouchagroune mosque (14th century); 14) Al-Atik mosque in Bordj Ben Azzouz (17th century); 15) Sahbi mosque (before 19th century); 16) Sidi Mohamed Ben Othmane (14th century); 17) Sidi Ben Brahim mosque in Alia oasis; 18) Sidi Amtir mosque in Ouled Djellel locality.

Table 1. Spatial layout of jamaa mosques and masjid mosques in the Ziban region (elaboration by authors based on surveys; DIDIER 1876-1882; SIMON 1909; HAOU, CHERGUI 2019; Archives of the Directorate of Culture of Biskra).



Figures 18a-d. View of the Eid prayer ceremony in a musalah in the locality of Biskra: the first phase (https://www.delcampe.net/static/img_large/auction/000/184/809/915_001.jpg, accessed 2 February 2022); the second phase (https://www.delcampe.net/static/img_large/auction/000/184/809/885_001.jpg); the third phase (https://www.delcampe.net/static/img_large/auction/001/426/909/835_001.jpg?v=3); Khutbah (sermon) after prayer (<https://i.ebayimg.com/images/g/MtoAAOSw8fVbVhXb/s-l1600.jpg>).

palmes, une voix retentit éclatante: Dieu est grand ! clame-t-elle, lançant au loin des vibrations de foi si in-tenses, que les vieux palmiers, endormis dans le calme du crépuscule, sem-blent frémir sous l'ardeur de cette prière, répandue sur leurs cimes comme la rosée du soir»³⁷.

Jean Hurabielle also wrote about the call to prayer during his visit to the Ksar of Oumeche, 25 km from Biskra. He expressed himself in these words:

37. FRÉCHOX 1892, p. 24.

«Le ksar d'Oumache est le type des villages sahariens des Zibans. [...] Un marabout domine le ksar: c'est le tombeau d'un personnage vénéré dont les Arabes ne franchissent le seuil qu'avec respect. Sur une petite esplanade qui avoisine le sanctuaire les indigènes aiment à faire leurs dé-votions, après avoir religieusement absorbé plu-sieurs tasses de *caoua* et fait de longues siestes à l'ombre même du saint sépulcre. Toutefois, il y a dans ce coin, si animé au milieu de l'immense solitude qui l'environne, une poésie singulière, et quand la voix du muezzin retentit plusieurs fois par jour avec des intonations mélancolique-ment prolongées, je ne sais quel trouble et quel attendrissement s'empare du coeur des touristes les plus sceptiques : c'est qu'il est grandiose cet appel à la prière, fait dans un décor incomparable, en face de solitudes infinies et d'un soleil éternel-lement brillant, sous un azur qui ne s'altère ja-mais!»³⁸.

In addition to the retroactive significance of the mihrabs and the minarets, there are other very important elements, the mausoleums. These mausoleums, whether isolated or associated with the mosques, were the places of ceremonial visits and various ritual practices of the local people (the cult of saints). Morphologically, a mausoleum is a square-shaped space covered with a hemispherical dome, slightly raised, lowered, or pointed at the top. This dome is often erected on top of a drum pierced with small openings, allowing penetration slight daylighting. Inside the mausoleum, there is certainly a tomb, on which there is a carved wooden catafalque, often covered by green draperies. It is equipped with seating for visitors and has niches in the walls used to place candles and incense during ritual practices (fig. 19). Table 2 synthesises the main characteristics of jamaa mosques and masjid mosques in the Ziban region.

Conclusion

This paper investigated local interpretations of the Arab mosque model by taking the traditional mosques of the Ziban region as a case study. The analysis of these mosques revealed that the early mosque of Okba Ibn Nafaa served as a generative model for subsequent vernacular Saharan mosques in the Ziban. These mosques are derived from the particularities of the local environment and are opposed to monumentality and prestige. They are characterised by their materiality, notably using clay and palm wood as the main building materials. The vernacular mosques have similarities with houses; both are part of earthen architecture, in which the physical forms are purely functional and devoid of any decoration. Due to the location of the Ziban region on the Limes line, many mosques were built with Roman ruins. In addition, the study revealed that the fundamental spatial layouts of vernacular Saharan mosques in the Ziban have a reciprocal affiliation with the components of the Arab mosque model. However, the prevalence of mosques associated with mausoleums underlines that

38. HURABIELLE 1898, pp. 103-104.

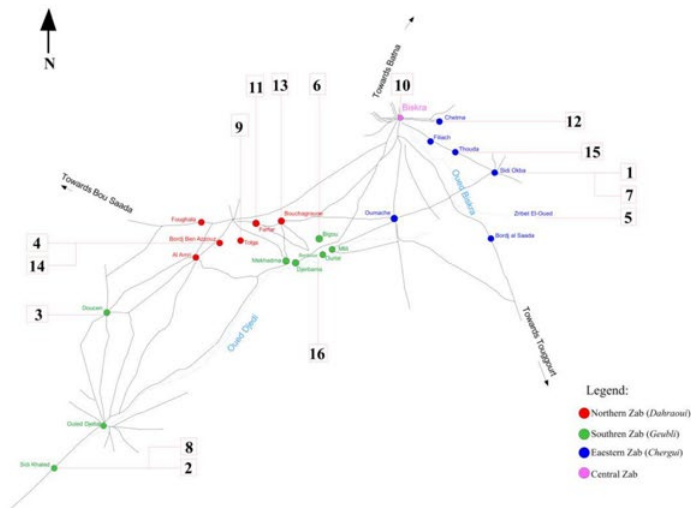


Figures 19a-e. Views of the Sidi Abd Al-Rahman mosque in Bigau village (photos S. Zerari, V. Pace, L. Sriti, 2022): above, outside the mausoleum; below, inside the mausoleum (the walls are smeared with Henna as part of ritual practices).

these places of worship functioned like *zawaya* without any affiliation to a specific Sufi order. These mosques were distinguished within the urban landscape by their emblematic minaret and dome covering the mausoleum.

The lack of previous in-depth studies on the heritage mosques of the Ziban was a major difficulty in carrying out this investigation, which ultimately proved its contribution to filling the gap in research on the religious heritage specific to the Ziban mosques.

Localisation of mosques



Mosque codes	Main criteria						
	Main building materials*			Mausoleum		Minaret	
	Walls**	Roofs***	Pillars	Presence	Absence	Presence	Absence
1	Adobe	Palm wood	Stone	x		x	
2	Stone	Stone	Stone	x		x	
3	Stone	Stone	Stone		x	x	
4	Stone	Palm wood	Stone		x	x	
5	Adobe	Olive wood	Adobe		x		x
6	Adobe	Palm wood	Palm wood	x		x	
7	Adobe	Palm wood	Stone	x		x	
8	Stone	Stone	Stone		x	x	
9	Stone	Stone	Stone	x		x	
10	Adobe	Palm wood	Stone	x		x	
11	Stone	Stone	Stone		x	x	
12	Adobe	Palm wood	Stone	x		x	
13	Adobe	Palm wood	Palm wood		x	x	
14	Stone	Stone	Stone		x	x	
15	Adobe	Palm wood	Stone		x	x	
16	Adobe	Palm wood	Stone	x			x

Notes

* The characterisation of the building materials was done based on the original state of the mosques.

** The walls used in the construction are load-bearing walls.

*** If the roof was made of wood, it took the form of a flat terrace, but if it was made of stone, it was a vault.

Table 2. Synthesis of the main characteristics of *jamaa* mosques and *masjid* mosques in the Ziban region (elaboration by S. Zerari, V. Pace, L. Sriti).

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