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# Urban and architectural ambiences' complexities in the nineteenth-century colonial markets: the case of the Saharan city of Biskra, Algeria.

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# **Urban and Architectural Ambiances' complexity in the 19th colonial adapted markets: The case of the Saharan city of Biskra, Algeria**

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## **Abstract**

In Algeria, adopted colonial markets (halles) highlight how various environmental parameters created a distinctive architecture in which daylight, ventilation and acoustics were centrally based on sensorial relationships. Using thematic content analysis, this research aimed to explore which human-centred sensorial features were intrinsic to colonial markets in Algeria. These sensorial dimensions were determined from a collection of travellers' diaries and postcards containing stories and iconographies describing and illustrating the halles in Algeria. Thus, this chapter presents an investigation of a specific aspect of these buildings regarding the multiple ambiances they radiated from within to inspire a dynamic, urban setting. A case study of a colonial market in the city of Biskra located in northeast Algeria in the Sahara Desert was investigated. This building differed from the usual European steel-framed halle model but remained a large covered, shaded, and open area. Although the market itself was demolished after a fire in the 1970s, visualizing its atmosphere was made possible by the precise descriptions collected from the various written sources. These descriptions were cross-checked to substantiate the authenticity of the environmental perceptions of different users, and further confirmation of the sensorial atmospheric feeling described in the written accounts was gathered from selected old postcards.

## **Introduction**

Markets are a crucial element of urban and economic life in different parts of the world. Initially, they were held outdoors but over time efforts were made to provide a more permanent and secure environment for both merchants and shoppers (Jones, Hillier & Comfort, 2007). Many researchers trace the birth of the market hall to two main factors. One is the separation of the market from the street and its relocation into a new, enclosed, but not necessarily fully covered, central space, and the other is to a widespread shift in market ownership from private to public (Schmiechen & Carls, 1999).

Western market halls date back to the medieval period (Manco, 2013). On the ground floor, there was a covered area for traders, and above was the guildhall, town hall and tax office; this plan can be traced back to 1215 in the Palazzo del Broletto in Como, Italy. The structure of medieval market halls consisted of stone or timber pillars supporting the roof. In medieval Europe, these markets were magnificent but very different to the great souks of the early Islamic world, such as Al-Medina in Aleppo, Khan el-Khalili in Cairo, and the Grand Bazaar in Istanbul, and indeed several market hall designs evolved. From the spatial and construction perspectives, European market hall structures typically featured a centrally organized hall and a metal frame, while those for the souks were characterized by a network of shopping streets built with heavy masonry walls, arcades, and vaulted roofs (Moosavi, 2005). In nineteenth-century Europe, during the Industrial Revolution, metal became more

widely used as a construction material. This fact, combined with shifting perceptions of public health and standards of urban hygiene, led to the creation of new, central markets which allowed those trades which created noise pollution and smells to be gathered and fully enclosed within vast and lightweight structures.

The advances of the Industrial Revolution were transferred from mainland France to its colonies, and as such Algerian colonial market halls are representative of this transfer. These new markets were commonly located in the new, colonial city districts where European communities lived and/or new districts were created to house the local Arab population. These structures had, however, to be adapted to local climates and, although their design and construction was modified, they retained some of their original characteristics, such as openness, lightness and transparency. It is common to observe a ventilation enhancement or supplementing shading device as a response to warmer, local climatic conditions. Local materials were also used, an approach often dictated by cost constraints. The first markets built in Algeria used imported steel components from France, and the monumentality of the building's style was adopted as an urban design concept for newly expanding areas. For instance, Oran, a city in western Algeria, witnessed urban development that focused on the location of the market and an exterior monumental appearance (Feninekh, 2001, 2005).

While many studies have focused on the urban and architectural characteristics of this type of building, this research addresses the type from the perspective of ambience (Thibault, 2012). Here, ambience or atmosphere concerns the sensory relationship linking a person to a physical environmental parameter, such as sound, light, smell, and texture, within an urban or architectural space. As such, the study considers the perception and behaviour of the users of the market building to the elements of natural or non-natural physical environments, such as sunlight, air, heat, sound, and odours, and ambience occurs when the user's perceptions and behaviours are affected by these physical signals (Amphoux, 1998). Conceptually, ambience is defined as a set of mutual, instantaneous, and flexible relationships between: 1) the perception and behaviour of the user of the space; 2) the conformation and activities in the architectural space; 3) the physical environment(s)/the signal(s); and, 4) the context —climatic, social and cultural (Belakehal, 2013).

Outside the fields of contemporary urban and architectural design (Belakehal et al, 2009a, 2009b), an atmosphere-based approach has been developed to study built heritage (Belakehal, 2012; Ziani et al., 2021). Several studies have applied this approach to the investigation of the ambiances of both vernacular and contemporary built heritage (Belakehal, 2014, 2019; Mahroug & Belakehal, 2016; Zidelmal, 2016; Chtara, 2019; Gharbi & Belakehal, 2021; Ziani et al, 2021; Zid et al, 2021). Due to the age of the market of Biskra and the fact that all its former users are now deceased, as noted this study of the heritage environment uses travel accounts and descriptions taken from novels. These texts remain a reliable and useful source of information related to both real and imaginary space. Consequently, the content analysis method was selected as the most appropriate for investigating the ambience of Biskra's market hall, as attested in several studies (Belakehal & Farhi, 2008; Chtara, 2016; Zidelmal, 2016; Zid et al, 2021). In this regard, the chapter is organized into three sections: the presentation of the study's textual corpus, consisting of four travel stories selected for the analysis of the ambiances in Biskra's market; an analysis of these ambiances, including auditory, visual/luminous, thermal/aeraulic, taste, olfactory,

and tactile sensations, as recorded in the travellers' diaries and historic postcards; and, the research conclusions.

### **Biskra town centre's covered market: a historical overview**

When the French military occupied the city of Biskra in 1844, they established themselves in the old city. Although by then in ruins, part of the old city had been used as a fort since the Ottoman era. Seven districts surrounded the old city to form the city of Biskra. Until 1855, Biskra was a Saharan oasis within a palm grove. In the same year, a new French colonial district was added, near the newly built Fort Saint-Germain, and located between the oasis and another external Ottoman fort, known as the Turkish Fort. A development plan from 1847 illustrates the construction of the perimeter wall of Fort Biskra. From Fort Saint-Germain, the French military controlled the waterways that irrigated the palm tree plantations.

Near the French fort, a new district called Ras el-Ma (the Source of the Water) was built, thus indicating the starting point of these waterways. This area was the first point of contact between the French military and the local Arab population (Agli, 1988). Military engineering plans available at the Archives Centre of the Chateau de Vincennes, France, attest to this and describe the creation and growth of this new district. Built on a grid plan, the Ras-el-Ma district contains a market surrounded by a set of blocks. The various city plans found in Vincennes' archives show not a marketplace but a covered market with a central open-to-sky courtyard.

No information was found about the inhabitants of Ras-el-Ma in the Vincennes archives. However, what could be extracted from the available plans is the fact that this district was designated as a village, similar to the traditional districts of Biskra, meaning that Ras-el-Ma could have been a place solely for the European aristocracy. The urban development of this new human settlement could have been accelerated and enhanced by a marketplace, supported by Biskra's function as an economic and commercial centre.

Another plan dating from 1881 depicts a church built between the military fort and Ras-el-Ma, set in an urban square called Place Napoleon in front of a military club, or *Cercle des Officiers*. Undoubtedly, the presence of this religious building reveals the beginning of a period of civil colonization and hence the arrival of French and European settlers into the city and the region. It must be noted that a local civil government was established in 1870, and following this a new era of mixed society emerged. As a place where social exchanges could take place, the covered market provided obvious opportunities for mixing. In contrast, the large public garden seems to have been reserved for settlers, as illustrated in some photographs of the era.

The market building, with its open courtyard, was more adapted to the local architecture and climate and did not adhere to the prevailing French enclosed steel-framed model of halles. A closer look at old postcards and the building plan indicates that successive extensions have been made to the building but, unfortunately, no dates are provided. At first, the market was a modest halle-type building, largely open to the outside, with heavy enclosure walls supporting a tiled roof—an unusual feature in the region. Outside the main entrance on the south-eastern facade, the superior arched part of the entry bays featured wooden solar protection (Figure 1). Later, stalls were added and attached to the exterior facades. These additions appeared only at the southern corner, and to a lesser degree to the

north. The arrangement suggests a desire to highlight those market entrances which led to the Grand Mosque (Figure 2) and the Place du Village on the south and north sides, respectively. The addition of the stalls caused modifications in the treatment of these altered facades, with the new design being essentially a series of three small, arched bays which ornated the top of the facades. These bays were designed to provide cross-ventilation for the interior of the covered market.

Regarding the interior of the market halle, the old, rare postcards show that initially it contained more vending stalls than shops separated by walls. Later, an interior street separating two rows of shops was created parallel to the four sides of the courtyard, away from the south side of the hall. As Biskra municipality's archives reveal, in 1937 several upgrades and embellishments were undertaken within the market (public toilets and refrigeration rooms) as well as in the area surrounding it, known as the marketplace (Figure 1). In June, 1972, the covered market of Biskra was ravaged by an accidental fire, according to oral sources, and the building was demolished. The site remained a simple square and later a new covered market was built in a different architectural style.



**Figure 1:** Main entrance of the market on the south-eastern façade (authors' collection)





**Figure 2:** Main entrance of the market on the south-eastern façade after the addition of stalls (authors' collection)

### **Travellers' descriptions of Biskra town centre's covered market**

Four travel stories were considered for this study on the market's ambiances by means of content analysis:

- 1) *En Algérie* by De Claparède (1896)
- 2) *Au Pays des Palmes. Biskra* by Hautfort (1897)
- 3) *Au Pays du Bleu. Biskra et les Oasis Environnantes* by Hurabielle (1899)
- 4) 'Illustration algérienne, tunisienne et marocaine' (IATM) by M. Fechner (1907), published in the 35<sup>th</sup> issue of a review dedicated to Biskra.

These documents were selected from those in the digital library Gallica (2015), as they included a special section on Biskra market in the colonial town centre.

### **Biskra town centre's covered market: a set of heritage ambiances**

The description of the social life in and around the market enables the discovery of its various ambiances. The content analysis considered both manifest content (i.e., clearly and directly expressed) and/or latent content (i.e., indirectly said and hence of a deduced significance) (Mucchielli, 1998).

#### *The auditory atmosphere*

The most important auditory ambiance is generated by the crowd strolling, buying, and communicating in the area (Figure 1). This crowd, according to De Claparède, was mainly composed of the local community and was 'A swarming crowd [...] from Biskra' (1896, p. 35). Additionally, people from different regions and ethnicities helped create this special

multilingual soundscape, as Hautfort noted: ‘All the duly sampled races of Shem and Cham, going about, discussing, quarrelling in bitter dialects’ (1897, p. 10). Hautfort also noticed how the local craft industry constituted another source of noteworthy sounds from ‘...blacksmiths who beat iron on thin anvils’ (1897, p. 18). Fechner found that the same was true of the modest rotisseries, where ‘...on the embers of the stoves, bloody liver skewers sizzle’ (IATM, 1907, p. 7). Even animals added a particular auditory atmosphere, with ‘Camels howl[ing] horribly when loaded’ (De Claparède, 1896, p. 35), and ‘the [flies] wings’ buzzing, a swarm of life’ (IATM, 1907, p. 7).

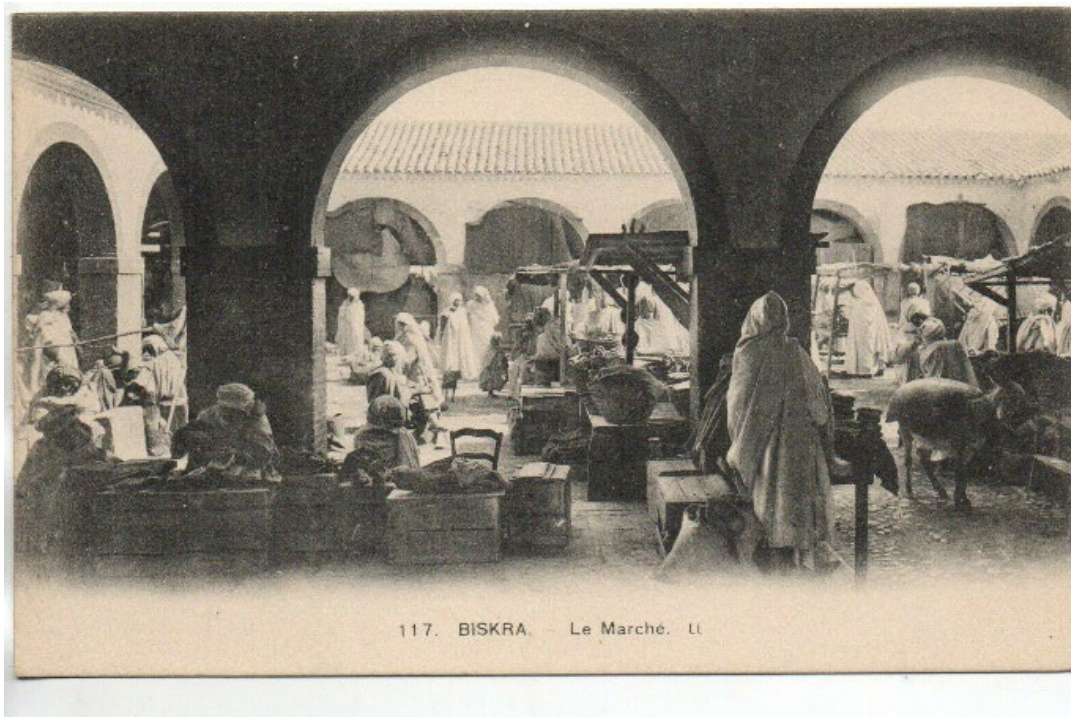
### *The visual/luminous atmosphere*

Several references were found to the colour and quality of the visual and luminous ambience. The perpetually clear and sunny sky that characterizes Biskra provides a unique, natural visual and luminous signal which predominates in the related descriptions of the market. The sky vault is described by Fechner as ‘a fiery sky’ with a ‘relentless light’ (IATM, 1907, pp. 6–7). People’s facial characteristics (their shape and colour) represented visual signals constituting inherent parts of the general ambience. Such a description was mentioned by Hautfort, who described pedestrians in one context as, ‘The Kabylie’s people<sup>1</sup>, with bulging foreheads’, and in another as having a ‘...light bronze-coloured face framed with a curly, black beard’ (1897, pp. 10–11, 17). The colour of the buildings around the market is linked to the local context through their description as ‘grey mud plastered houses’. The writer considered that ‘the light grey colour belongs to objects of the desert’ (IATM, 1907, p. 6). Additionally, the appearance of the constructions surrounding the market and other external aspects attracted the travellers, specifically the ‘buildings’ and the ‘arcades’ heaviness’ (IATM, 1907, p. 6) (Figure 1).

The arcades surrounding the market played a vital role in climate control, as they offered shaded areas. These protected areas represented a particular luminous environment which would have contrasted with the harshness of the adjacent streets. This was noted by both Fechner and Hautfort, who commented on, ‘the shade of their mud houses’ and ‘covered galleries’ (IATM, 1907, p. 6) ‘along the colonnades’ (Hautfort, 1897, p. 15). Also, the market’s square shape and its large, inner courtyard (inspired from local Saharan architecture) were considered to be the calling signs of the market’s visual atmosphere (Hautfort, 1897; IATM, 1907) (Figure 3).

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<sup>1</sup> Kabylia is a cultural, natural, and historical region in northern Algeria.



**Figure 3:** Inside the central courtyard, the soft, luminous atmosphere specific to desert plazas can be seen, contrasting with the externally prevailing hot and clear sunny sky. (authors' collection)

The natural and/or manufactured items sold in the market vary in colour and form, and participate in the creation of the visual atmosphere in the market. Colours mentioned in the texts include: 'green fodder', 'liquid black' (IATM, 1907, p. 6), '...black pupil', 'yellow paste', and 'fabrics nuanced with a thousand colours' (Haufort, 1897, pp. 10–12; Hurabielle, 1898, p. 17).

Hurabielle (1898) shares a specific reference to a street performance including a lizard, which represented the most interesting part of the market and was an integral component of this 'very curious spectacle', according to De Claparède (1896, p. 35). The writer gives a very detailed description of the colour and shape of the lizard: 'The palm lizard —or dobb in local dialect —measures no more than one foot in length at most. It is grey in colour, more or less dark, has yellow eyes, glossy, finely speckled skin, and a flattened tail'. The traveller also distinguished it from the 'enormous desert lizard, which lives in the sand and matches its colour by the shape of its slender and elongated tail rather than by its size' (De Claparède, 1896, p. 37).

#### *The thermal/aeraulic atmosphere*

The clear, sunny sky of Biskra is also associated with a hot, semi-arid climate and harsh thermal environment. The rays of the 'terrible sun of the Zibans', according to Fechner, 'removed the shadow', and thus 'the heat becomes unbearable'.<sup>2</sup> Consequently, the 'covered' arcades around the market qualified as 'a necessary shelter under a fiery sky'

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<sup>2</sup> The Zibans form a region of Algeria which straddle the Saharan Atlas Mountains and the desert; Biskra is the main city.

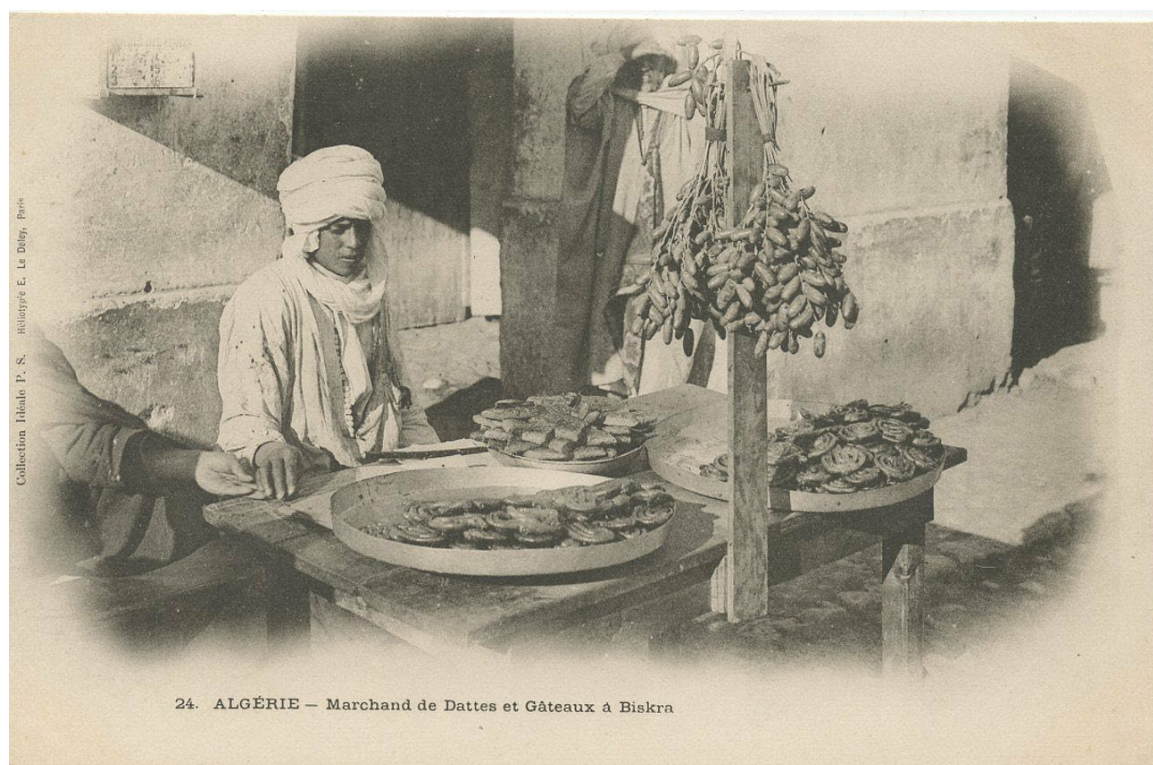


(IATM, 1907, p. 6) (Figure 1). The use of mud as a building material and the important depth of the walls ‘excludes heat’ (IATM, 1907, p. 6).

### *The atmosphere of taste*

Hautfort wrote that ‘Along the colonnades [there are] open kahouadji (cafe owners), taverns, [and] restaurants where those who have two cents feast’ (1897, p. 15). Thus, the area was a special place for a gustative ambience. Grilled beef and fried grasshoppers were respectively for the rich and poor (Hautfort, 1897), while mutton was considered ‘tasteless flesh’ according to Fechner (IATM, 1907, p. 6). Apart from the meats, the taste of salt is cited through the widely ‘sold butter’ as well as the famous ‘blocks of salt’ supplied by the village of El-Outaya (Hurabielle, 1898, p. 39).

Among the items sold in the market, the good quality and taste of various vegetables and fruits produced locally in this oasis was noticed by De Claparède (1896, p. 36), who said, ‘There are beautiful and good vegetables in the market, citron, oranges, lemons, wheat, barley, [and] mountains of dried or candied dates’ (Figure 4). Fechner also noted how ‘the Saharan turnips are exquisite, the salad has flavour and the carrot is not without charm’ (IATM, 1907, p. 7).



**Figure 4:** Dates and traditional sweets sold in the market illustrate the various tastes on offer, contributing to the atmosphere. (authors’ collection)

### *The olfactory atmospheres*

The olfactory atmosphere of the market was multi-faceted: ‘In this confluence of all smells, here and there, the shops of M’zabites (the population from the M’zab valley) emit a powerful scent slowly permeates’ (Hautfort, 1897, p. 15). Scents and smells varied from dawn until late afternoon: ‘The suffocating odour subsides and, alone, remains, triumphant,

this scent of musk, cedar wood, and seraglio pastilles<sup>3</sup>, which evoke the Orient everywhere, like incense, the cathedral, the organs and the golden monstrance<sup>4</sup>’ (Hautfort, 1897, p. 14). More precisely, the travellers wrote about the ‘fragrant merga (soup)’ (Hautfort, 1897, p. 11), ‘the breaths of saffron stews’ (Hautfort, 1897, p. 15) and meat that ‘offers nothing attractive to the eye and smell of the gourmet’ (IATM, 1907, p. 6). These odours are linked to the shops and eateries located in and around the market: ‘These low doors, like mouths, each spit their breath on the square where a thousand scents coordinate’ (Hautfort, 1897, p. 15).

### *Tactility*

The unusual items offered for sale in the market were attractive, in terms of tactility, as revealed by the travellers’ descriptions. For example, mutton is described as ‘rough and rude’ (IATM, 1907, p. 6) while the lizard’s skin is described in both tactile and visual words: ‘covered with thorny scales, reminiscent of some armadillos’ (De Claparède, 1896, p. 37). Conversely, the diverse crafts products were notable for their rough decorative pattern (Figure 4), with ‘chiseled glass cups’ and ‘picturesquely dyed and embossed leather’ (Hurabielle, 1898, p. 39). However, while the tactile indicators that might have been associated with building surfaces are not mentioned, they can be indirectly extracted from the travellers’ descriptions. For instance, an inherent reference to the roughness of the mud-built heavy walls of the arcades can be inferred.

### **Conclusions**

Biskra’s marketplace is illustrative of the genius of locally adapted architecture designed by French military architects and engineers. Built with heavy walls and a tiled roof, this halle provides a shaded and naturally ventilated area for its various users. Demolished after an accidental fire, the market is part of the history of the first colonial settlement in Biskra. Hence, it may be considered a disappeared historical monument, and the life within it a form of intangible heritage as seen in the aspects investigated in this research from the perspective of ambience.

Most of the examined travel stories reveal how this market’s ambiances can be seen as multiple (37 descriptive units) rather than unique (21 descriptive units). The latter are mainly visual/lighting but also auditory, and more rarely thermal/aeraulic, olfactory or sensorial ones. In general, the visual/lighting ambiances were likely to have been the most striking as these are the most commonly found in all of the travel diaries (44 descriptive units). The next highest number of descriptive units was for sound (19), followed by tactility (13), thermal/aeraulic sensation (12), olfaction (12) and taste (10).

The signals or sources of visual/lighting relating to various atmospheres consist of the colours of people’s skin and clothes, street food, vegetables, and fruits as well as various items for sale, in addition to the play of direct sunlight and the shaded areas of the arcades. Human and animal noises constituted the main components of the sound atmosphere in the market, while the sun’s rays and resulting warmth were the main elements of the thermal ambience.

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<sup>3</sup> Seraglio pastilles are pieces of dried dough, of different shapes, used in confectionery and pharmacy

<sup>4</sup> Golden monstrance is a vessel used in Roman Catholic churches

The market building and its surroundings could only be identified as signals for this area's atmosphere from the description in the magazine, 'Illustration algérienne, tunisienne et marocaine' (IATM, 1907). Arcades, buildings, houses, and wall plasters were clearly recognized as components of the visual/lighting atmosphere, even if less than for the thermal/aerualic and tactile ambiences. The surroundings and architecture of the building itself seem to have played a minor role in generating impactful ambiences, although they are mentioned in the texts.

Finally, these results highlight the importance of the market's inner social life and the climatic conditions as the more powerful characteristics of Biskra's colonial town centre market. These heritage characteristics should be of great help to architects in current historical building preservation projects, to ensure that contemporary designs are not only sensitive to climate, but also provide tangible sensory experiences for users.

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