
The Town of Ghardaïa in M'zab, Algeria: Between Tradition and Modernity

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The Town of Ghardaïa in M'zab, Algeria: Between Tradition and Modernity

GIANCARLO CATALDI, RASID ABDELHAMID, AND
FABIO SELVA

Scholars and architects have long admired the urban structure of the five towns of the Oued M'zab Valley. Originally built by the Hybadites, a schismatic sect of Muslims, the towns consist of stratified masses of houses on rocky peaks, each dominated by a mosque and minaret, elevated on the skyline like a divine finger. Many common points may be discerned between the tendencies of contemporary architecture and this simple, rational architecture which expresses a unified vision of community. However, in recent decades the towns have undergone uncontrolled change that has radically disfigured their morphology. At present, Ghardaïa, the most exemplary of the towns, is in great need of a conservation effort that will enable residents to better integrate the traditional and the modern. This should not be interpreted as museumification, but as a return to the aware self-control practices that once distinguished the life and history of the town.

The M'zab region of Algeria is located six hundred kilometers south of Algiers. A limestone plateau broken by valleys and entangled ravines, its overall appearance has led it to be referred to as a *chebka* (network). It was to this region that refugees of the Hybadite sect fled one thousand years ago. Practicing a pure application of the holy texts of the *Quran*, they had been hunted and persecuted as heretics by orthodox Muslims for more than four centuries. They had already built and abandoned enormously prosperous towns such as Tehert¹ and Sedrata.² But in the valley of Oued M'zab River at the edge of the Sahara these so-called "Quakers of Islam" discovered the conditions for continued safety. Away from caravan routes, in the driest of deserts, in the centuries that followed they built an artificial oasis consisting of five garden towns (FIG. 1).

The legacy of the Hybadites, and the five Mozabite towns — Ghardaïa, Melika, Beni

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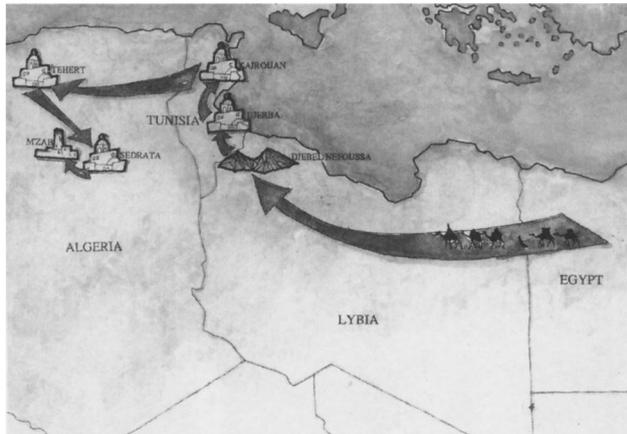


FIGURE 1. Hybadite itinerary in the Maghreb.

Isguen, Bou Noura, and El Atteuf — today represents one of North Africa's most ancient examples of town planning and territorial organization. Of the towns, El Atteuf is the oldest, having been established in 1011 AD. The other towns were founded upriver: Bou Noura in 1046, Ghardaïa in 1053, Beni Isguen in 1124, and Melika in 1347.¹ Following the logic of settlement growth and inner struggle, these close-set agglomerates eventually came to form "the M'zab pentapolis" (FIG.2).

Hybadite society was based on a desire for physical and moral isolation. It maintained its own unified system of traditions and social and religious organizations for centuries, and was characterized by two rigidly defined hierarchies. In terms of social and political organization, Hybadite society was based on families, which were clustered according to common ancestry and divided into two *soff* (political parties), which elected members of the *djemaa* (the executive assembly of laymen). In terms of religious structure, a body of *azzaba* (clerks) were governed through the *halqa* (religious legislative assembly).

Nothing was left to chance in the founding of Hybadite towns. Creation, as with all subsequent enlargements, proceeded according to deliberate design, and all issues were thought out and resolved. The process commenced with a choice of site by an enterprising group, guided by a *cheikh* (spiritual head). Selection was principally based on the need for military defense, and this led to the Mozabite towns being sited on peaks overlooking the Oued M'zab River. Such siting also freed tillable land and kept homes and settlements away from the river. Construction of the town began with a mosque at the highest point of land. This became the heart of the town: its religious, social and cultural center. The *halqa* then defined land for urbanization,⁴ planning the town from the top down and halting at the edge of the palm groves, which marked the boundary of the agricultural area. Finally, dwellings were built close together against the walls of the town, forming concentric circles.

In their simplicity and rationality, the Mozabite towns echo much of the best of modern architecture. For example,



FIGURE 2. Settlement of the M'zab Valley.

in the town of Ghardaïa, object of this study, all elements — mosques, houses, market squares, graveyards — are simple and lacking in decoration. They give the image of a unitary community, where no building action is done for free (FIG.3). Examining the art of building in the Mozabite towns, one might think of such work as the vaults of Gaudi's Guell Park, Le Corbusier's Ronchamp Chapel, or some of Pouillon's works in Algeria. Yet, paradoxically, at the same time the architecture and planning of these traditional towns expresses "modern" rigor, a strong desire for change exists today among the inhabitants of the region, who wish to live to the rhythms of the "modern" West.

The distinguishing character of the Mozabite settlements owed much to the decision by their builders to make a restrictive choice of techniques, even though they were fully aware of the advanced building knowledge of the Islamic world. In this way, they expressed both their obedience to religious values and the reality of life in a desert environment. But these values, once very strong, have gradually lost their impact, and today important changes have taken place in local people's lives. For one, modernity has brought a certain standardization to the urban fabric and the conception of the dwelling. One might question, however, if in the future the choice of such a "conventional" architecture will not lead to the loss of these millenarian settlements, which once stood as pure expressions of architectural theory.

GHARDAÏA: TRADITIONAL MILLENARIAN TOWN

The town of Ghardaïa is the highest up and most significant of the sites in the M'zab Valley. Its planning has induced UNESCO to consider it an important monument of mankind for conservation. Like the other Mozabite towns, it was centered on a hill, with a mosque and minaret at the peak. The *ksar* (historic center) developed in concentric circles, two of which can still be seen on maps (FIG.4). Some decades ago the

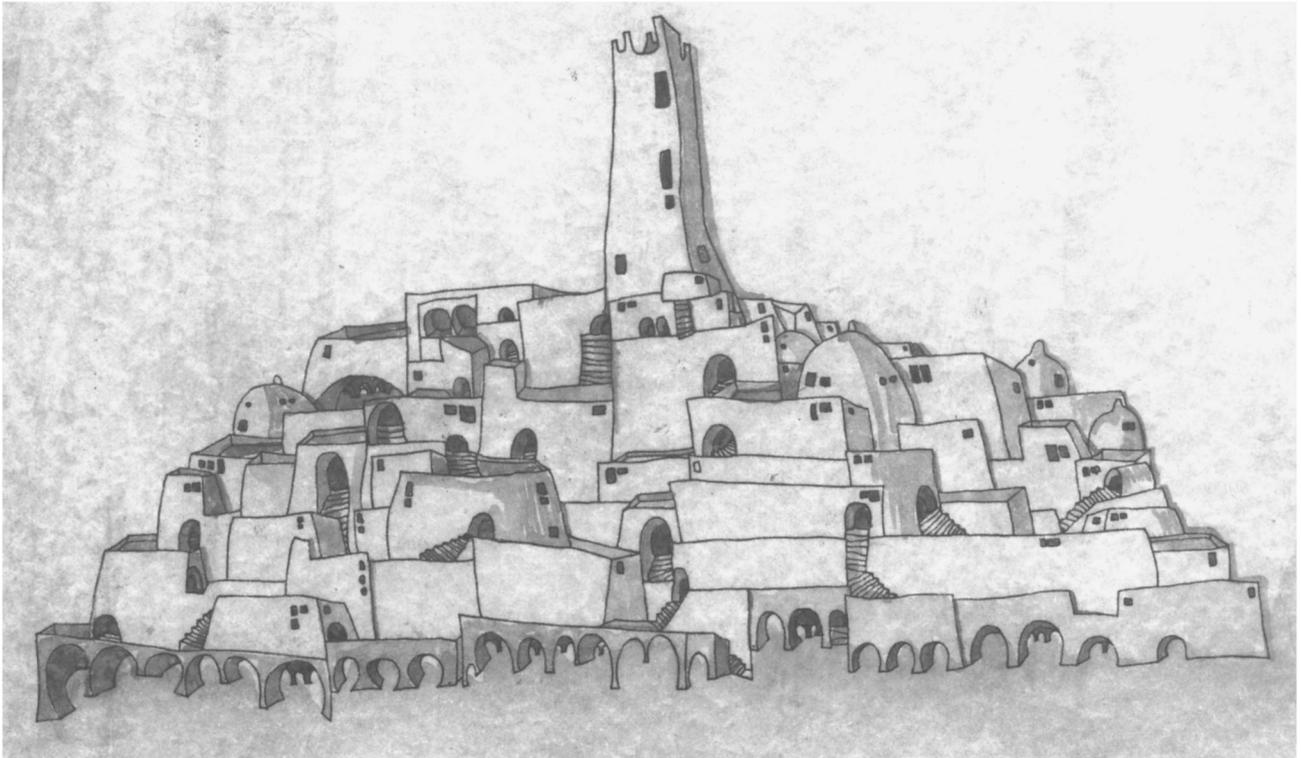


FIGURE 3. (ABOVE) *Unified image of the traditional ksar of Ghardaïa.* FIGURE 4. (BELOW) *Ghardaïa ksar. M: great mosque. S: souk.*

town was surrounded by walls, which formed a third enclosure line, but these have now been entirely absorbed by peripheral constructions, and are only partially visible. Except for the southern district, access to the town still only comes through centuries-old doors, however. And in overall form, Ghardaïa takes the form of an oval, with the principal axis running northwest to southeast, toward sunrise and *qibla*, the direc-

tion of Mecca.

The form of the town of Ghardaïa once served as a complete expression of its inhabitants' deep-felt beliefs. While the *souk* (market) at the edge is open and rowdy (FIG.5), secrecy and reservedness reign within the *ksar*. Alleys there give no direction and are bordered by blind walls (FIG.6). At the heart of the *ksar* is the mosque. This occupies a whole block and is



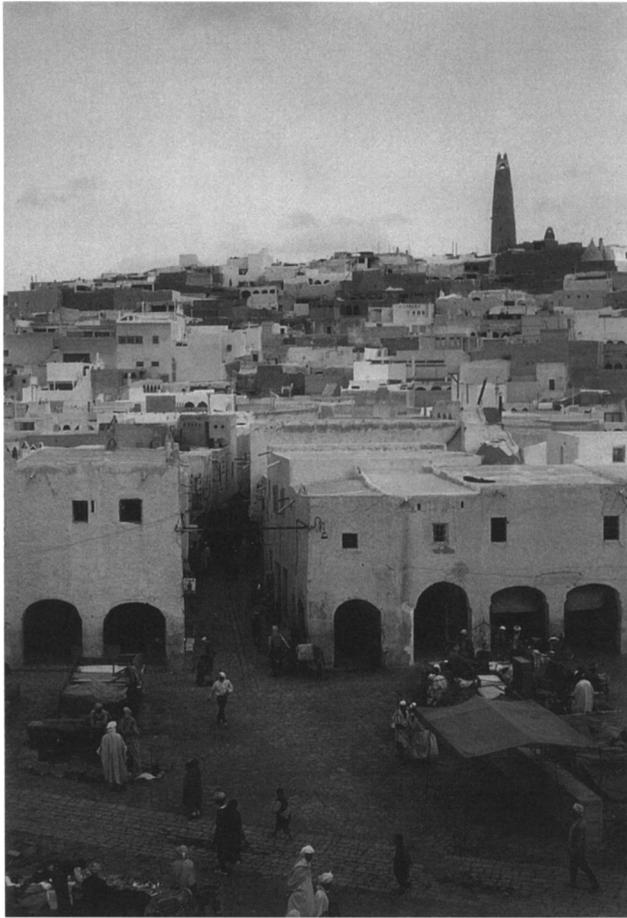


FIGURE 5. A stratification of agglomerated houses jealously protects the mosque, the religious and spiritual heart of the town. The souk, the profane center, is confined to the outskirts. (Photo by R. Massol, 1969.)

the center of a district that unites all the families of the local clergy. Majestic on account of its size and location, Ghardaïa's mosque is the key ordering and structuring element of the town — its nucleus. It is at once a place of worship, the seat of religious government, a meeting place, a school, and a fortress (FIG.7).

Structurally, the mosque of Ghardaïa is built around the *chan* (an open court), which serves as a hinge, and onto which face the prayer room, the ablution room, the door leading to the terrace, the outside door of the mosque, and a gallery enabling access to the minaret and *madhara* (teaching auditoriums). The structure is characterized by great simplicity, and no decoration or ornament appears inside or out.

Around the mosque, dwellings are laid out in a close-set, orderly manner, and the existence of hierarchical alleys creates an urban form in the shape of a series of screens. The ring of houses surrounding the mosque forms a real fortress, a place of religious intimacy. Meanwhile, purposely thrust to the edge of the town in the form of an irregular, four-sided courtyard, the *souk* provides Ghardaïa's trade center and meeting place. It is a

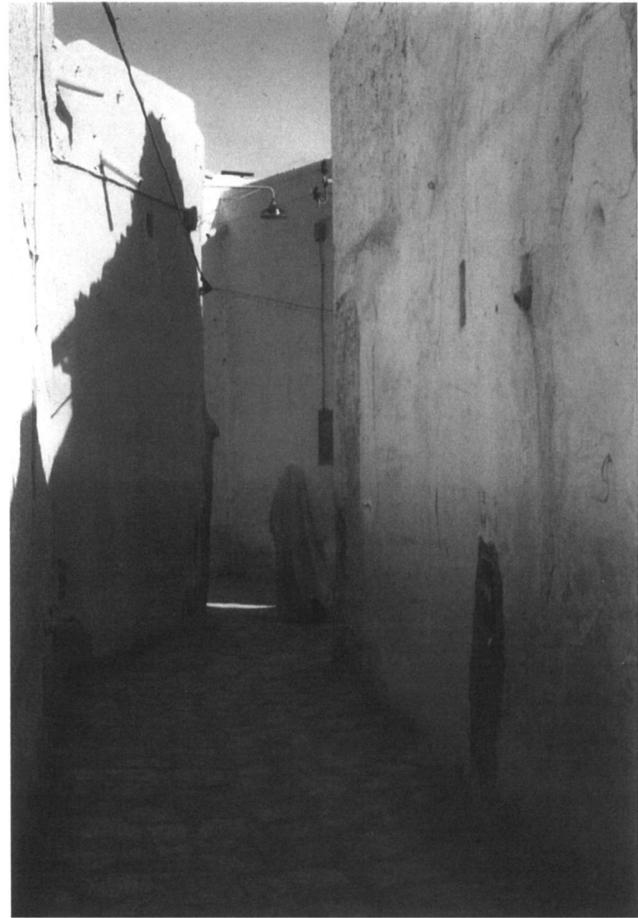


FIGURE 6. The windy, shady alleys of the ksar represent the outside world of women. (Photo by R. Abdelhamid, 1993.)

noisy place where women are prohibited, and it serves as a place of reception for the town, a filter separating the public from the private, the sacred from the profane (FIGS.8,9).

The final component of the traditional town lies two kilometers to the northwest. These are the palm groves — a happy, vegetable world that provides a marked contrast to the closed stone world of the *ksar*. From the time of their arrival in the valley, the Hybadites were forced to preserve tillable land along nearby waterways, and consequently, the initial division of Ghardaïa not only included spaces for urbanization but for crops as well. These agrarian spaces were assigned specific uses and owners. The Hybadite oasis was only able to impose itself in the desert thanks to a subtle irrigation system consisting of a works to pick up, drain, and divide the limited local water supply. Dikes, combs, hoppers and watersheds were put into place to exploit the rare and irregular spates. And over time the palm groves became luxuriant gardens where farmers built summer homes, shops and mosques. To escape the torrid heat of the *ksar* in summer, the entire population of Ghardaïa migrated toward the palm groves — or *ghaba* (forest), as the

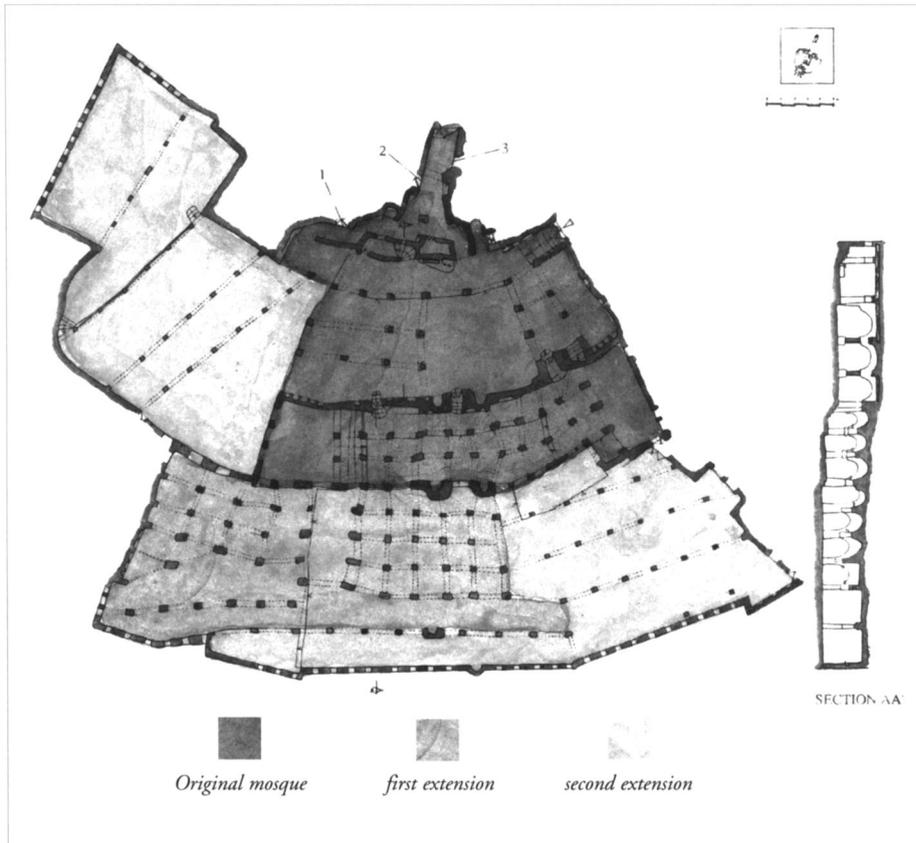
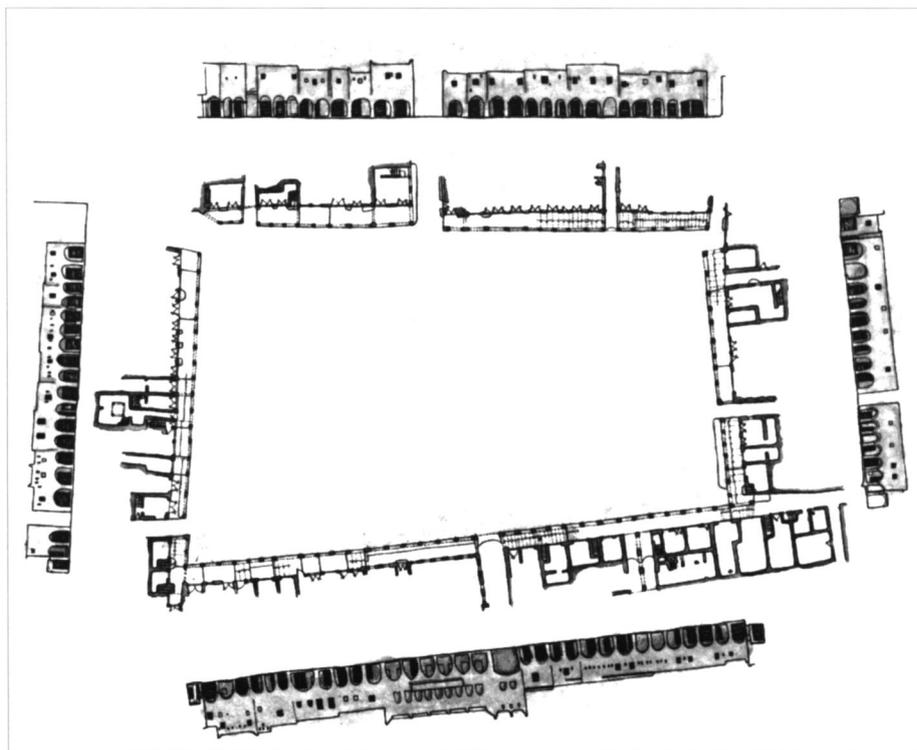


FIGURE 7. (TOP LEFT) *The great mosque of Ghardaïa, showing original outline and two extensions. 1) Mahdharat Belahsen, school of religion. 2) Mahdharat Essassi, school of religion. 3) Minaret.*

FIGURE 8. (TOP RIGHT) *The souk represents the male world of business. (Photo by R. Abdelhamid, 1993.)*

FIGURE 9. (BOTTOM LEFT) *Ghardaïa souk.*

FIGURE 10. (BOTTOM RIGHT) *When the rivers are in spate, the roads of the palm grove turn into canals that distribute water to the gardens in the oasis. (Photo by R. Massol, 1969.)*



Mozabites called them (FIG.10).

The strict religious order of Hybadite towns enabled town-planning laws to be put into place that governed all aspects of Mozabite architecture.⁵ Volumes and heights were regulated in detail to preserve the safety and intimacy of dwellings; this also led buildings to be sized to human proportions. Openings were reduced as far as possible to allow sufficient light but avoid the intense heat of the sun. From the urbanistic point of view, sunlight and intimacy were considered inalienable features, and a building owner was prohibited from casting shade on neighboring houses by raising walls too high. A building's owner was similarly prohibited from violating neighbors' privacy. And so dwellings in the Ghardaïa *ksar* never exceeded fourteen cubits (approximately seven meters) in height. As for aesthetics, building owners were forbidden from adopting a style or any other building element that was different from other houses. All M'zab buildings, including places of worship, were unadorned both inside and out, and every architectural element was rationally and precisely measured. The application of these strict rules, taken from the Ibadite religion, to all dwellings gave Ghardaïa a simple, functional form that expressed the origins and principles of its residents.

The choice of building materials was another factor that created the distinctive appearance of the M'zab settlements. Materials, such as limestone blocks, *tchiment* (traditional gypsum), and palmwood, were all locally obtained, and so fit perfectly with the natural environment. Yet materials alone were not sufficient to explain the peculiarities of M'zab architecture. This character also had much to do with uniformly applied building techniques. Choice of techniques was related both to the community's religious traditions and to the reality of living in the desert (FIG.11). Structures consisted of thick walls formed of large, irregularly sized stones bound with *tchiment* mortar. Pillars, consisting of agglomerated stones, served as supports for palmwood beams and arches. Arches were built with small stone blocks, their ribs formed out of bundles of palm branches. The size of the arches varied on account of the irregularity of the materials used. But the whole was generally plastered with *tchiment* mortar and covered by one or more layers of lime milk. The result was a series of simple, yet fascinating forms. Mozabite architecture thus emerged from function, available materials and building techniques, and a way of life dictated by the scarce resources of the desert. It struck a balance between heavy structure and sufficient stability that was able to endure for centuries.

Each dwelling, mirroring the organization of the town, featured an internal organization that both met the need for intimacy and allowed for sun and climate control. Since the outer part of the town was dominated and attended by men, house interiors expressed intimacy and were designed to protect the integrity of women. Despite the fact that they were indisputably the heads of families, men were largely left out of this interior world. For them, the house was principally a place to join their wives and eat the food prepared by women.

The Mozabite house was square or rectangular and consist-

ed of two living floors, a vault below hewn out of the rock, and roof terraces (FIG.12). The threshold of the home separated the public life of men from the protected life of women. It was followed by a *tasqift*, or entrance hall, characteristic of most traditional North African houses. The "chicane" shape of this hall never allowed the glance to penetrate to the interior of the house. Instead, the entrance door opened onto an inner wall that separated the house from its central space.

From the entrance hall one might pass into a wide space, the *amessent eddar*. This was the central space of the house, its core, and its size ensured its multipurpose character and contin-

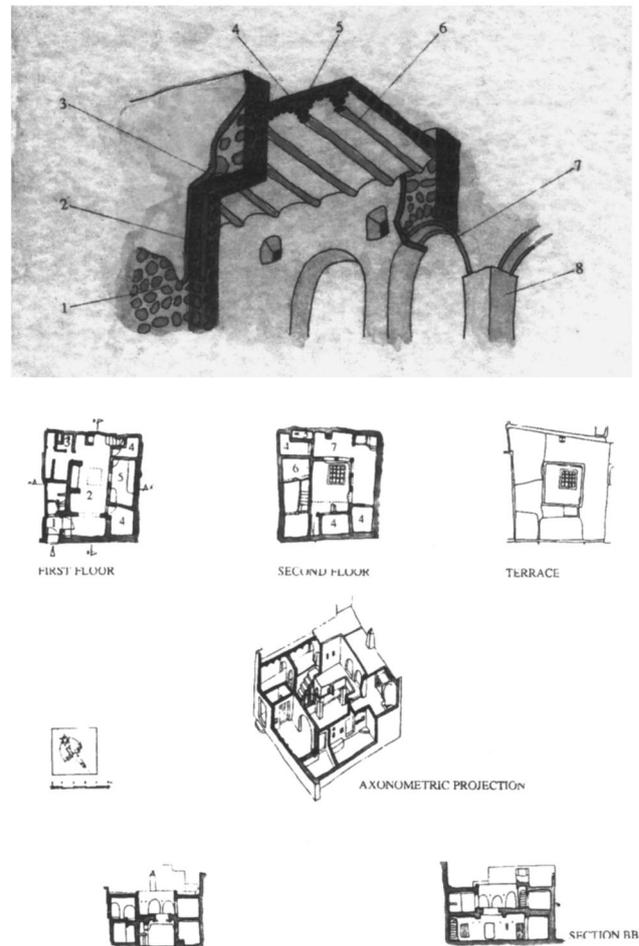


FIGURE 11. (TOP) Traditional building materials and techniques. 1) 40-50cm. wall consisting of madun, limestone blocks bound with *tchiment*, traditional gypsum. 2) *Tchiment* plaster and sand covered with a layer of raw or dyed lime. 3) Architrave consisting of palm branches. 4) Stiff layer of small stones (remains of processing *tchiment*), sand and lime. 5) Vaults formed by madun bound with *tchiment* mortar; the shape is obtained by means of wooden shuttering. 6) 2-3m.-long beams in palmwood, placed every 60-70cm. 7) Bundles of palm branches used as permanent reinforcement for the composition of arches. 8) Pillars feature the same composition as walls.

FIGURE 12. (BOTTOM) Home in the *ksar*: 1) entrance, 2) patio, 3) W.C., 4) room, 5) women's lounge, 6) men's lounge, 7) loggia.

ual animation. Rooms, storehouses, kitchen areas, and the stairway leading to the second floor all faced onto the *amessent eddar*. There was a skylight grate in the ceiling here, called a *chebbek*, to ensure that air and light would reach the ground floor.

Leading onto this central space, and extending it, each house traditionally contained a women's reception hall, called a *tizefri*. This space faced southeast to exploit the midday sun. The house contained no kitchen as such, but a cooking area was arranged in a corner of the central space, traditionally on the opposite side from the *tizefri*. This area was very simple in design, consisting of a hearth on which to place pots and niches and shelves to house utensils.

Other rooms facing onto the *amessent eddar* did not have fixed purposes. They could be used as cloakrooms, storerooms or bedrooms. However, those used for bedrooms were always located in a sacred position to the right of the *tizefri*, a sign of intimacy. By contrast, as a sign of impurity, the water closet was situated in a corner of the central space to the left of the *tizefri*. It did not exceed a square meter, and an opening in its floor drained to a cesspool.

One final important room in the traditional Mozabite house was the *houdjrate*, a reception room for men, which also served as their restroom when there were women strangers in the home. This was a small room to the back of the central space. In order to preserve female intimacy, the *houdjrate* featured a separate entrance and was completely independent from the other rooms in the house.

Access to the second floor of houses in Ghardaïa was gained by a stairway with steps that varied according to the levels and rooms to be served. The stairway led to a covered space, the *ikomar* (loggia), which faced through arcades onto a southeast-facing open-air terrace/courtyard. The uncovered portion of this upper floor allowed light and air to come directly into the *ikomar*. It was to this space that all household activities were transferred during hot periods.

Otherwise, the upper story of the house comprised rooms built and distributed as need be, in total disregard of symmetry. These were used in various ways: as bedrooms, storerooms for dates, and cloakrooms. From the upper living floor, the stairway continued up, permitting access to roof terraces, which were strictly reserved for women. If a man wished to go onto the roof, he had first to let all the women in neighboring houses know of his desire so they could withdraw into their homes. Roof terraces were used in the summer for sleeping, and were often partitioned to form separate open-air bedrooms. They were surrounded by walls to provide privacy.

From the above description, one can see that Mozabite houses followed a general Mediterranean scheme, but that they were adapted to the climatic conditions of the Sahara and to the strict religious and social convictions of the Hybadites. The need to adapt to the harsh climate was particularly important, and this was evident in many other aspects of architectural and urban design in the town. For example, houses were built one on top of another, creating long surfaces of wall exposed to the sun and

enabling streets and alleys to be continuously in the shade. Since the homes were built with thick stone walls, they were also cool during the day and warm at night. This thermal phenomenon was enhanced by the use of light-colored plasters in raw or dyed lime, which reflected light and heat. Houses also contained virtually no outside windows, and what rare openings did exist were reduced in size so they were reminiscent of embrasures. In summer the interior of the house was cool and dark, and a pleasant breeze would blow between the *chebbek* (the central grate), the open entrance door, and the small openings in the walls (FIG. 13).

Like all the M'zab towns, the orientation of Ghardaïa was also important. As a whole, the town was oriented to the southeast, and the blind facades of houses faced north to protect them from the sun's rays and from sandy winds. By contrast, *tizefri* and *ikomar* opened southeastward to protect them against the hot sun in summer, but to provide warmth in winter. As a further measure of adaptation, Mozabites traditionally moved their dwelling place according to two cycles. Seasonally, they migrated from their towns to their homes in the palm groves; and on a daily basis, they moved around their homes exploiting their



FIGURE 13. (TOP) In summer the interior of homes is cool and dark. A pleasant breeze passes between the *chebbek* (central grate), the entrance door kept open, and the few openings in the facade. (Photo by R. Abdelhamid, 1993.)



FIGURE 14. (BOTTOM) During hot periods all household activities are transferred under the porticoes of the *ikomar* (loggia), protected against the sun's rays.

domestic micro-climate (FIG.14).

Apart from physical, climatic and geographic influences, the architecture of M'zab was dominated by a human dimension based on a particular outlook. This caused the mute, immobile interiors of buildings to acquire "spirit." In this system, every item found a place, position, status and role. The dwelling resulted from the linking of simple cells, creating a central space, a core of household activities, which held a privileged position in the Muslim religion. In turn, on a town scale, this complex of houses was built around a pole: the mosque, the town's spiritual and physical center. The entire town also faced southeast, the direction of the *machriq* (rising), symbol of light and life, and the sacred direction of Mecca. Islam accompanied the Ibadites in all their activities, ruling their lives and guiding their gestures. Following the holy texts of the *Quran*, they developed a philosophy and a social, political and religious order that became the metaphorical foundation of their towns. It is the erosion of these guiding principles in recent decades that has irreversibly changed the millenarian balance of the M'zab.

SOCIAL AND MORPHOLOGICAL CHANGES

After the Hybadites settled in the M'zab Valley, their policy of autarchy and austerity did not encourage further flows of people toward the region. This period is referred to as *marhalet el kitman*, the secret phase. The few immigrants who did arrive during this time consisted of further small groups practicing the Ibadite religion and some local nomad populations,⁶ who were absorbed into existing towns. The slow process of growth in the M'zab Valley involved the controlled extension of the *ksar* and the establishment of new towns at irregular intervals.

Like the other towns in the valley, Ghardaïa was the product of a family community built on the value of intimacy and respect for fundamental moral codes. Town structure corresponded to social structure through a series of interconnected spaces with various functions: *ksar* for urban life, cemeteries for the dead, palm groves for agriculture. In this hierarchical system, every element fit into place and assumed a role depending on its appurtenance and integration. The religious leaders, who always maintained a primary role in the town's history, occupied the center of the *ksar*; new non-Berber immigrants remained on the outskirts; and visitors were thrust beyond the walls that marked the boundary of the sacred world. All the while, palm groves and *souk* screened access to the town, maintaining its privacy.

During the fourteenth century a progressive opening occurred in the life of the town due to the development of trade. This brought the arrival of new non-Ibadite groups. In succeeding centuries the ever-increasing flow of immigrants resulted in the slow growth of peripheral districts, which were grafted onto the fabric of the town, extending its preexisting boundaries. The extension of Ghardaïa's *ksar* was subject to

the existing conditions of social and spatial organization. A series of laws and recommendations aimed at protecting the intimacy of the historic center were enacted. Such rules were needed on account of the "quality" of the inhabitants of the new districts — the Jewish residents of the El Mellah district, and the semi-nomad Arabs of the Mdabih and Beni Merzoug districts. Regulations included prohibitions against erecting buildings beyond assigned limits or constructing doors and terraces in the direction of Mozabite homes. New dwellings thus came to follow the traditional typological models in terms of materials, building techniques, and morphological organization.

In the same way, during the French occupation, colonial authorities were required to keep their constructions outside the *ksar*.⁷ As a consequence, changes introduced by the development of European districts in the valley had no impact on Hybadite social and urban organization. During this time the resistance of Mozabites to outside influence even encompassed refusing the introduction of electricity, telephones, radios, and French schooling.

Overall, the population and urban growth rate of the towns stayed rather low until the 1950s. During that decade, however, the discovery of oil in the Sahara and groundwater in the valley led to a further expansion of Ghardaïa. This mainly took place along the linear axis of the M'zab River towards Beni Isguen and the palm groves. The new Hybadite Arab and European districts created at this time introduced considerable morphological and typological change. For example, the regularity of the valley bottom enabled the orthogonal tracing of a large number of streets, accessible to motor vehicles. This new fabric formed a single agglomeration that was weakly structured, and which lacked morphological consistency.

It was only with the independence of Algeria in 1962 that the solid millenary balance began to come fully apart. The heads of state of the new nation promoted the idea of a modern society based on Socialism; and the Mozabites, who had been largely independent until then, formed a complex society that conflicted with the new national ideology. Towns were replaced with "communes," *cheikhs* with townsmen, and *halgas* with state control.⁸ Along with this "modernity" came an adaptation of space and time to the rhythm of the industrial world. Furthermore, unregulated flows of new inhabitants and economic and industrial development became the agents of huge changes in the urban fabric. In subsequent years numerous new homes were built in the palm groves where Mozabites had traditionally struck a climatic balance, and the harmony that had existed between urban and agricultural areas changed considerably (FIG.15).

The town plan of A. Ravéreau,⁹ enacted in 1963 and aimed at retaining as much of the traditional built-up framework as possible, was judged by the townsmen to be a violation of their freedom. The same applied to the classification in 1968 of the M'zab Valley by UNESCO and the Ministry of Fine Arts and Monuments as an "historic monument." The creation in 1970 of a research and controlling body known as the



M'zab Valley Architecture and Town Planning Atelier¹⁰ and all subsequent town plans met with similar resistance." In fact, local authorities made very little use of these tools, governing the valley with no overt "political" view, passively applying the new laws of industrial economics — yield and profit. One after another, traditional rules, which had formerly been unchallenged, lost their impact and reason for being.

Early programs to promote council housing further introduced a modern building typology. The first such settlement was called Siddi Abbaz. The project had initially been conceived by Ravéreau based on use of local materials and references to traditional themes, but it was drastically altered by the Town Council (an extension of the Algerian government), which considered Ravéreau's ideas to be a "return to underdevelopment" (FIG.16). Instead, the dwelling typology referred to standardized models produced in all Algerian regions during that period. It consisted of small, jointly owned houses with three- or four-roomed units distributed along a corridor.

Individual homes also underwent considerable typological change during this period. Aiming to reconcile the advantages of the *ksar* with the benefits of the palm groves, a certain number of villas with gardens were built near the town (FIG.17). And cement, metal rafters, and prefabricated elements, designed to "improve" and "embellish," began to appear. To the townsmen, cement bricks allowed for smooth rectilinear walls, speeding up work on houses; tiles made flooring more regular and easy to wash; rafters allowed construction of larger rooms; and prefabricated Moorish-style arches and columns provided decorative elements. Even more importantly, large windows, balconies and corridors, inspired by Western models, began to define the organizational scheme of new homes. But the replacement of small openings with large windows, the addition of balconies, and the abandonment of simple volumes proved to be more of a symbolic denial of tradition than a response to real dwelling needs. Big windows and balconies were rarely used and were even screened for climactic reasons and to protect occupants from indiscreet glances.

FIGURE 15. During the past fifty years building has mushroomed in the valley bottom. The five towns have become closer with the passing of time. (Photo by R. Abdelhamid, 1993.)

FIGURE 16. Project for an economic building in Siddi Abbaz, Ghardaïa (1975-76). A. Ravéreau, architect. 1) entrance room, 2) sitting room, 3) men's lounge, 4) room, 5) W.C., 6) kitchen, 7) bathroom, 8) terrace.

FIGURE 17. Home on the outskirts of Ghardaïa: 1) patio, 2) sitting room, 3) lounge, 4) room, 5) W.C., 6) kitchen, 7) bathroom, 8) storeroom.



Neither were owners of structures in the *ksars*, which were still deeply rooted in tradition and continued to work according to the rhythm of prayers, able resist the temptation to use such "modern" materials and methods. In fact, one of the most significant changes to the valley came in the construction of a new facade of the original mosque of Ghardaïa. After its second extension, this facade was built as a completely plain cement surface (FIG.18).

Despite innovations and external contributions in techniques and building forms, certain peculiarities did, however, persist in the general planning of homes. Houses maintained an overall organization very similar to the traditional type.

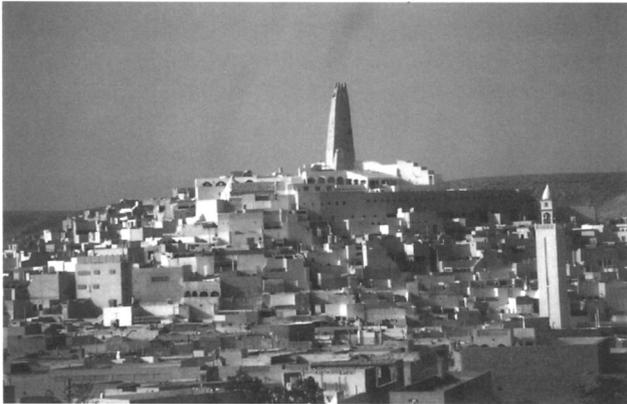


FIGURE 18. The new facade of the ancient mosque of Ghardaïa is now a long monolithic cement surface interrupted by numerous small openings. (Photo by R. Abdelhamid, 1993.)

The windy “chicane” entrance, the *amessent eddar* (the large central room lit up by the *chebbek*), and the *tizefri* (women’s lounge) are all still found. Families still move around according to the sun’s position in the sky. And rarely is a permanent kitchen to be found. Furthermore, in the majority of “modern” building, a layout with a dual entrance is still observed: one for women leading to the *amessent eddar*, and another for men opening into the *houdjrate* (men’s lounge). It is very difficult to identify a typological variation representing all new building. Current production is a combination of models, the result of a complex hybridization of cultures, references, and symbols of modernity and tradition.

In the past, as an historically and culturally important site, Ghardaïa never really needed to be protected or safeguarded. However, the demolition of old homes and millenary monuments has now become the norm. Building materials used are not chosen according to any criterion of adaptability, nor do they fit the surroundings. Some architects, aware of the importance of the conservation of this heritage, have tried to sensitize inhabitants and authorities to the problems of traditional dwellings. But the townspeople have insisted on converting their building heritage to keep abreast of the times.

FOR AWARE CHANGE

The Mozabites originally settled a largely uninhabited site with great urgency and limited means. Later, as they built five close-set, modest and simple towns, the strictness of their social and religious values enabled them to keep their towns uncontaminated by competing influences for more than one thousand years.

Isolation was the result of deliberate choice. However, the desire for autarchy never meant the imposition of a sterile and inevitable building tradition: in that case, a building model and technique would have been repeated *ad infinitum*. On the contrary, in Ghardaïa there are as many traditional models of

houses as there are homes.

Each dwelling and structuring element became the expression of a period. Tradition, with its culture and rules, is no other than the control and discipline of change through time. The townspeople of Ghardaïa were always great travelers, and they never ignored the rest of the world, and vestiges of their previous settlements bear witness to the fact they possessed the full building, artistic and architectural knowledge of the Islamic world. Yet, by restricting the choice of techniques and materials according to personal desires and cultural values, they created an “Architecture without Architects”¹² that distinguished the town through the poetry of its shapes and the harmony of its materials.

“It would appear that our era has a great deal to learn from the architectural and town planning event of M’zab in its expertise in dominating its own knowledge,”¹³ wrote Ravéreau. And architects have at times learned the lessons of such simple, traditional architecture. Le Corbusier no doubt studied principles of the building art of ancient rural civilizations. And after a trip to Algeria he wrote enthusiastically about “the intelligence of millenary town planning and the aware simplicity of architecture in M’zab”¹⁴ (FIG.19). In particular, he emphasized the architectural links between Ibadite culture and the way of life of its people. More recently, R. Bofill has written how he was impressed by the “surprising geometry of the white and blue blocks of the Mozabite town,” and by their “human scale.”¹⁵ South of Bechaf (Algeria), Bofill even built a farming village that refers to the ingeniousness of Ghardaïa builders.

Ravéreau went further in praising the building art of M’zab. He proposed a total reconsideration of architecture, as “a sort of revolution that does not aim at obtaining more freedom or ease of use but which follows the architecture implemented in M’zab nine centuries ago.”¹⁶ Such an approach has been realized in such works as the chapel of Ronchamp by Le Corbusier, the domes of Gaudi’s Guell Park, or certain projects by F. Pouillon in Algeria.

However, in some cases architects’ interest in M’zab has also been limitative. Searching only for formal solutions to problems, they may have perceived only its visual and aesthetic aspects. In so doing, they fail to consider that M’zab is an inhabited, vital site, which over the centuries has undergone an aware transformation of its heritage. This tradition is today passively changing in nature and losing any reference to the past.

In recent decades the world has gone through a period of technological revolution that has generated great changes in the way of living, thinking, and also building. Traditional values have been fully affected by this “modernity,” originally aimed at improving the quality of life. In M’zab one consequence has been that the value of working for the good of the community has given way to a culture of individualism and a search for personal wealth. Everything linked to tradition has been popularized, taking on an archaic aspect. In their building decisions Mozabites have turned their backs on traditional models to embrace the advantages of cement, plastic, electrici-

ty, and the parabolic antenna.

Nowadays the need exists to stop the excessive search for technological bravery and return to simpler, more natural human values. Some European and Algerian architects have always been aware of the importance of the cultural heritage of M'zab. And certain architectural projects since the 1970s have been inspired by the traditional architecture, reconciling local themes with the needs of modern life (FIG.20). But these projects were premature, incompatible with the need to pass through a period in which improvement was represented for Mozabites by a Western way of life. Now that Mozabites have fully lived this "modern world," with all its advantages and disadvantages, they may once again want to revive aspects of their traditional architecture.

One would hope in particular that the use of local building materials in M'zab might no longer be considered a "return to underdevelopment." Even in less-developed countries such as Algeria a general awareness has now emerged of the need to employ nonpolluting, "ecological" building systems. The time has come to take hold of the traditional cultural and building process and adapt it to modern architecture. This is especially necessary at a time when architecture is no longer the result of community activity, but the work of "experts."

The task, however, should not be to re-create the traditional Mozabite model. This model corresponded only to a certain historic period, and such an operation would be purely "folkloric." It would also be impossible to erase all aspects of "modernity," since these form an integral part of M'zab culture. And one must recognize that the Mozabites' desire to improve the quality of their lives — by such endeavors as introducing electricity and waterworks in towns and installing plumbing in homes — is more than legitimate. An attitude that insists merely on trying to freeze a traditional model without taking into account (or refusing to consider) all the aspects of modern life runs the risk of only creating reserves for tourists. One must instead try to regain the balance between man and environment by once again using building materials according to their physical, mechanical, economic, and, ultimately, cultural characteristics.

Therefore, the purpose of this research has not been to arrive at a new organizational model of an urban fabric or an experimental dwelling typology. It has rather been to suggest that a "reading" of the transformations of existing traditional buildings should form the basic legislation with which to regulate future building projects.¹⁷ In other words, we suggest re-acquiring the notion of "aware transformation," based on a project of reconstructural research into the changes in building types in the town, and in the town itself. This involves putting local cultural knowledge into practice in contemporary projects.

As far as possible, this research has attempted to clarify the long, complex course of the traditional Mozabite building world. On the one hand, it has attempted to understand the rules governing the traditional fabric of Ghardaïa and the types of dwellings that compose it. On the other, it has attempted to outline the grounds on which choices of materials and architectural structures

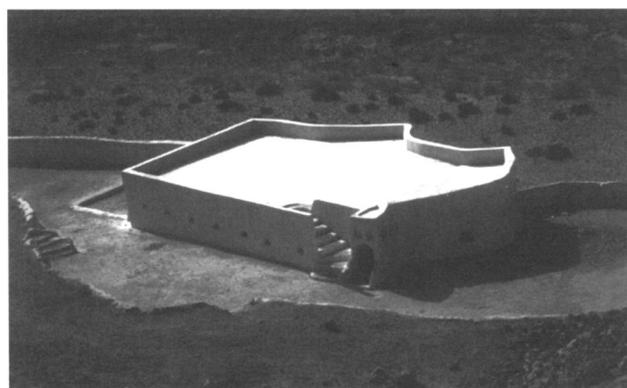


FIGURE 19. *The ancient mosque of Sidi Brahim in El Atteuf was indisputably a source of considerable inspiration for Le Corbusier's Ronchamp chapel in the 1950s. (Photo by R. Abdelhamid, 1993.)*

FIGURE 20. *F. Pouillon's Hotel Rostomides, built in Ghardaïa, is an example of modern architecture inspired by the traditional forms of the M'zab. (Photo by R. Abdelhamid, 1993.)*

were made. An assessment of how these rules were twisted over time will lead to proposals for potential future projects.

In the research we have studied the building features of Ghardaïa, analyzing the town's basic components: mosque (sacred space), homes (private space), marketplace (public space), and streets (semi-private space). Further analysis of dwelling typologies enabled us to understand the climatic, religious and cultural needs that historically determined the plan. From this work we were able to arrive at a deep understanding of how M'zab's traditional building techniques developed with regard to such elements as walls, floors, vaults, arches and openings. The choice of these techniques, which ultimately appears to have been inspired by criteria of stability and practicality, resulted in a real "beauty of expression."

A more detailed summary of our research exists elsewhere.¹⁸ We hope that somehow these efforts can help Ghardaïa. Above all, it is the harmony between man and the natural environment, which until some decades ago was the main characteristic of M'zab traditional building culture, that must be conserved as the town continues its process of transformation into the future.

REFERENCE NOTES

1. Founded in 761 AD, it was the capital of an economic, intellectual and religious empire which stretched from Fez (Morocco) to Kairouan (Tunisia). Tehert was conquered by the Fatimids in 909 AD.
2. The archaeological finds of ancient Sedrata (Isedreten, in Berber) reveal its complex structure, rich in sculpture and decorations. The town, where the Ibadites took refuge after the fall of Tehert, was in turn destroyed in 1274 AD.
3. Two Mozabite towns were then founded outside the valley, one hundred kilometers from Ghardaïa: Guerrara in 1630, and Berriane in 1679.
4. Some authors, such as M. Mercier and P. Donnadiou, maintain that during all stages of the town's growth is the area for urbanization was defined according to the defense walls, which were built before the dwellings. Instead, B. Ben Youcef considers that the relatively recent and currently visible walls were too narrow to serve a defensive purpose.
5. One of the first town-planning documents, *Kitab el Usul* [Book of Rules], was set forth by the *cheikh* Abdul Abbas Ahmad during the late eleventh century. Part of this document was translated by P. Cuperlt in *I.B.L.A.* 44/148 (1981), pp.305-20.
6. The few local inhabitants were primitive Berbers called *oucilite*.
7. On April 19, 1853, a convention was ratified guaranteeing the submission of Mozabites to the colonial authorities. However, the agreement laid down the possibility that the Ibadites would be allowed to continue their customs and trade, paying an annual tribute.
8. Today Ghardaïa is the fortieth *wilaya* (region) in Algeria. It includes thirteen communes, including the five ancient towns of M'zab.
9. A. Ravéreau was Superintendent of Historic Monuments in Algeria from 1965 to 1971. He spent several years in M'zab, where he created an "atelier" and was the designer of the current post office and some homes.
10. When it was first created, the atelier sponsored a great deal of research and surveys of traditional buildings. After a period of virtual inactivity during the 1980s, it was reactivated thanks to the work of young Mozabite architects.
11. The "Speer" plan based on A. Speer's elaborate zoning of 1972, which was not approved, but which was partially revived in the 1990 plan.
12. Title of an exhibition and then book by B. Rudofsky (New York: Museum of Modern Art, 1965).
13. From A. Ravéreau, "Le M'zab et les temps modernes," *Revue d'Information de l'Organisme Saharien* (1965).
14. Le Corbusier, "Retours . . . ou l'enseignement du voyage coupe en travers: Espagne, Maroc, Algerie. Territoires du Sud" (October 1931).
15. R. Bofill, "Grands Reportages. C'est un immense luxe que d'habiter ici," (July/Aug. 1979).
16. A. Ravéreau, *Le M'zab, une leçon d'architecture* (Ed. Sindbad, 1981).
17. G. Cataldi, *Lezioni di architettura* (Florence: Ed. Alinea, 1981).
18. F. Selva, *Architettura nei contesti minori, tipologia linguaggio* (Bologna: Ed. CUEC, 1991).