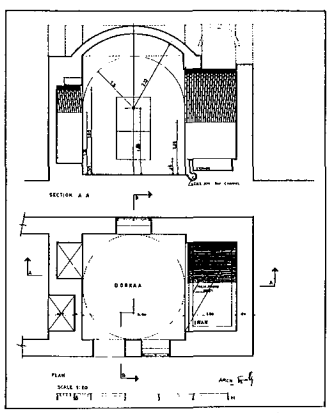
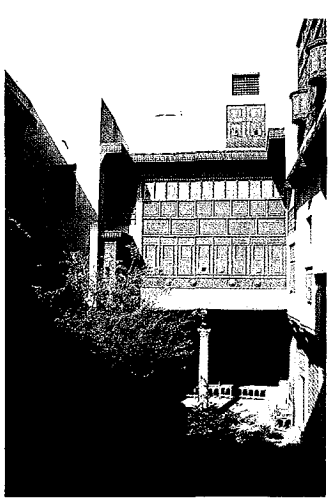
The Late Houses



x Plan and sections of a prototypic *ka'a*

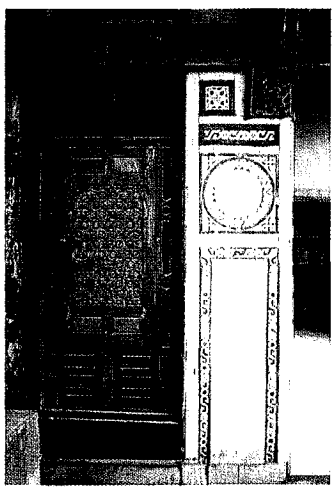


xi Courtyard facade Souhemi House, constructed 1648-1796 Cairo

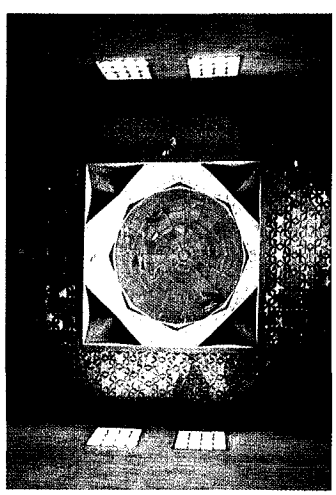
A PERIOD OF nearly twenty years passed between the completion of the Stoppleare House and the construction of a private retreat in 1971 at Sidi Krier. During this period Fathy continued to practice actively; (7) however, he built very little and saw no private house designs realized. The house at Sidi Krier was made for himself at the Mediterranean seaside (plates 23-32). This project was followed within the next ten years by the Riad House, Samy House and Mit Rehan (plates 33-72). The material for construction in this group changed from mud brick in the early houses to stone and fired brick. The change in material, however, does not account for the architectural differences. Together, the late houses present a unique study in abstract formalism as they embody a mature paradigm which extends the basic structural vocabulary of the early houses to include an all-embracing proportional system and a fully developed repertoire of infill elements.

The source of inspiration for Fathy's formalized proportional system came through archaeologist R.A. Schivaller de Lubicz. Fathy met de Lubicz while working in Luxor on the New Gourna project. At that time, de Lubicz was developing a body of research on the Temple of Luxor that indicated the pharaohs knowingly related human proportions to plan-form. Fathy became enamoured of a possible architectural theory whereby *mathematical functions* relating dimensions could introduce human scale in architecture while relating all elements into an overall harmonic unity. Already the dome and vault provided lyrical spaces and masses. Fathy began factoring *pi* (3.14...) and *phi* (1.61...) and multiples of the pharaonic cubit (46 cm.) in the intervals used in the plan of rooms, height of walls and doors, and depth of squinch zones, in order to infuse each spatial unit with a consistently well-centered, uplifted dynamic. In addition, the architect maintained the geometry of construction he had used earlier. The ratio of height to width of parabolic curves used for vaults was set as a factor of *phi* (the golden mean) and the span. Byzantine domes were defined as a hemisphere originating at the interstitial springing, and rising exactly one-sixth of a sphere above the arced inflection of the supporting walls. Domes on squinches were hemispheric. Pointed arches were invariably determined by dividing the span at the springing into six equal intervals, and drawing the left and right arcs with radii that reached across the center from the second and fourth intervals. Taken together, these mathematic standards and manipulations embody a formal discipline that imbues each house of the 1970's with an inspired self-assurance.

(7) See chronology.



xii Marble and wood interior detail
Musafirkhana Palace, constructed
1779-98 Cairo

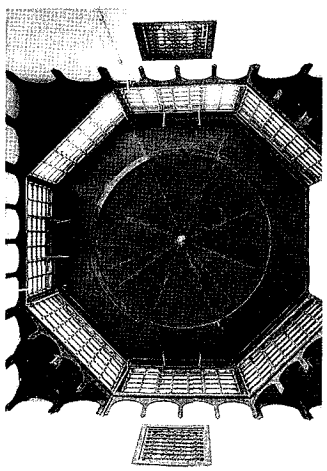


xiii. Cupola Souheimi House

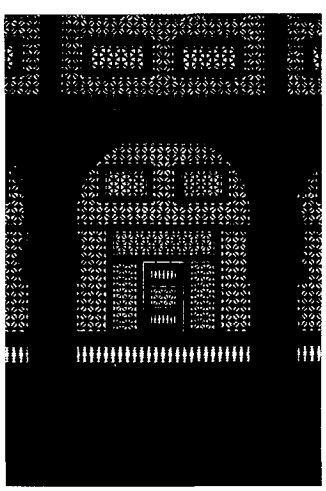
To the heightened sense of regularized geometry Fathy lavished greater attention on the infilling of openings and built-in cabinetwork (plates, 45, 52, 66, 68, 72). Just as he had promoted a living tradition in brick-working skills, Fathy engaged carpenters and glass artists in Cairo, whose craft had been handed down from father to son in an unbroken chain that spanned several centuries. Palaces in Cairo offered inspiration for an integration of meticulously executed finishes in rich materials and a simplified architectural framework (ills. xii-xiv). Be it a cabinet door, *mashrabiyya* screen or stained glass window, each area of detail follows its own internal logic while taking fundamental cues from its larger architectural context. As with traditional building, Fathy determined the number, distribution and dimensions of openings and built-in features, but relied on craftsmen working in cooperation with the homeowner to generate the precise design.

In plan, the late houses are comprised of a courtyard, a *ka'a* (main room), bedrooms and service spaces. Courtyards (plates 34, 47) play a major role in the ensemble. Individual enclosures are gathered around them for light and air. The courtyard also functions as an independent space, with its own identity typically enriched with a loggia, sometimes graced with a fountain and, when fully enclosed, offering controlled visual access to the sky. The *ka'a* (ill. x), comprising a central domed space *(dorka'a)* and flanked with radiating alcoves *(iwans)*, serves as the major interior space. It is always protected from the building's threshold by a domed entry hall or corridor. The *ka'a* is the most architecturally complex room in Fathy's design; it is capable of supporting a variety of activities – dining, lounging, studying, sleeping – each taking place within the spanning structure of the *iwan*. Another important area of each house, though not a room *per se*, is the roof (plates 23, 43). Accessible by independent stairways and upper level doors, roof terraces enliven the buildings by making them surmountable sculptural objects.

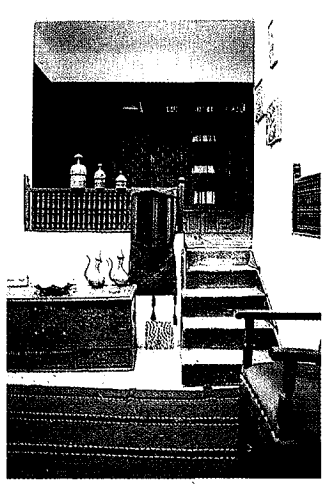
In visiting the late houses, one is struck by the dynamic pattern that choreographs the shifting path from space to space. Walking through the rooms and corridors – veering left or right, upstairs and down as views open and close – movement is animated by changes in section and punctuated with natural light. Even at rest, the eye travels across implied spatial boundaries and beyond perforated walls, reaching through non-axial vistas framing partitions of light and shadow. The rooms themselves, whether simple or complex, are self-contained, growing from the inside out.



xiv *Mashrabiyya* by Hassan Fathy
Mehrez Apartment Cairo



xv Cupola by Hassan Fathy
Mehrez Apartment Cairo



xvi Private living area Mehrez Apartment

As prescribed by his own theory, the architectural components are integrated like the notes of a musical composition, with intervals controlled by a few mathematic factors, much the way tonal relationships in music are based on the simple physics of vibration. As was mentioned, the source of the proportions is pharaonic architecture. This architecture was in turn thought to be based on the physique of the ideal man. (8) In an abstract manner, the geometry of the architecture is humanized by recalling the geometry of the body. Fathy's greater ambition was to have quantifiable geometry lift material matter to a spiritual dimension. This too was believed to be an aim of the pharaohs. As Fathy has explained:

"The Royal Chamber in the Pyramid of Cheops is commanded by sacred geometry. Its form radiates. They say it has a healing power, this room. It is not a burial room; it was for purifying man from all diseases. These are the secrets which we have lost, and we hope we can come back to them." (9)

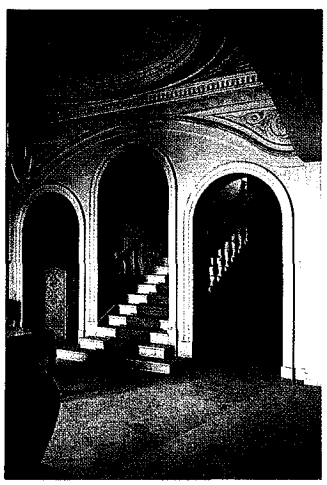
Spirituality, or an energy from a whole greater than the sum of its parts, could also be engendered through the process of building itself.

"Man receiving impulses from the outside, from the universe – the sky, the sun, the moon, the wind – and brain, should transfer this knowledge through his fingers when giving shape to material. If he does, he will radiate from his body into the materials and forms. That which is created will in turn re-radiate the same feelings.

"We have some monasteries in the desert in Egypt. I met a monk at one of them. He had made his own cell with his own hands, very simple and radiating spirituality. Later on, I visited the same monastery, and I found they had replaced the adobe shelters with ten identical cells of concrete. I was horrified. I went to the bishop and I told him, My father, what have you done to your monks. These rooms are rooms for servants in a third-class hotel in Cairo, and you have lost their spirituality." (10)

This belief in the "spiritualization" of building helps explain Fathy's preference for technologies that minimize the machinery mediating between man and materials.

Whether or not Fathy has evoked a spiritual dimension to his buildings is something that must be judged by each person who visits them. Certainly the house designs since 1971, both built and unbuilt, constitute remarkably disciplined exercises. They employ an economy of means to produce a wealth of complexity while retaining an overriding sense of simplicity. In these residences,



xvii Entrance hall by Hassan Fathy Monesterly House Giza

xviii Entrance portico Monesterly House

as well as the Monesterly House of 1950 (ills. xvii, xviii) and the Mehrez Apartment (ills. xiv, xv, xvi), Fathy demonstrates an uncanny ability to select idioms from diverse sources and to assimilate them into a personal language. With the country villas, a structural system from Upper Egypt is transplanted in Lower Egypt, and urban ornamental craft merges with a rural building form rendered sophisticated through geometric manipulation.

In a series of larger-scale projects – palaces, luxury hotels, buildings for permanent cultural expositions – Fathy extended the basic forming principles of the late houses through a process of simple addition. Only one such project has been realized in Egypt, the Presidential Rest House in Kalabsha (plates 73-78). Given the scope of the program, one is surprised by the relatively small, certainly human, scale that pervades the complex. As with the smaller houses, the scale of the Rest House derives largely from the structural limitations to approximately three and a half meters. The rooms determined by the module are organized around open courtyards or along vaulted corridors. To form the major interior space, Fathy has elaborated the *ka'a* into a vaulted hall intended to serve formal reception, meeting, and dining functions (plate 70). The larger projects, such as the Presidential Rest House or others comprised of more than one building, began to require planning at the scale of a village. However, Fathy's practical experience in the architecture of communities began with New Gourna, discussed in the following section.

(8) See R. A. Schwaller de Lubicz, *The Temple In Man* (New York), 1977). For a parallel theory of Renaissance architecture see, Rudolf Wittkower, *Architectural Principles in the Age of Humanism* (New York, 1971).
(9) From the 1980 lecture series.
(10) Ibid.

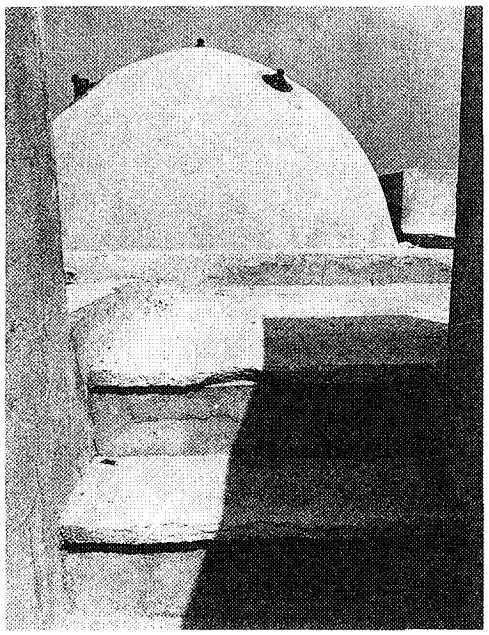


Plate 23 Steps to roof terrance

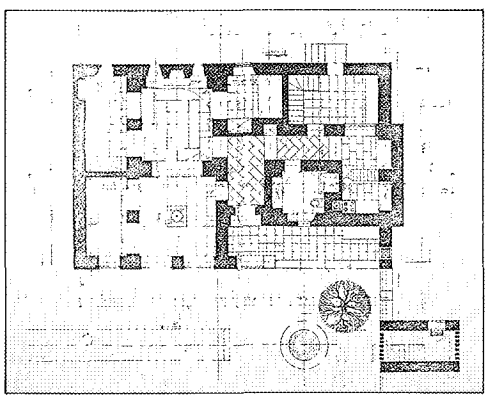
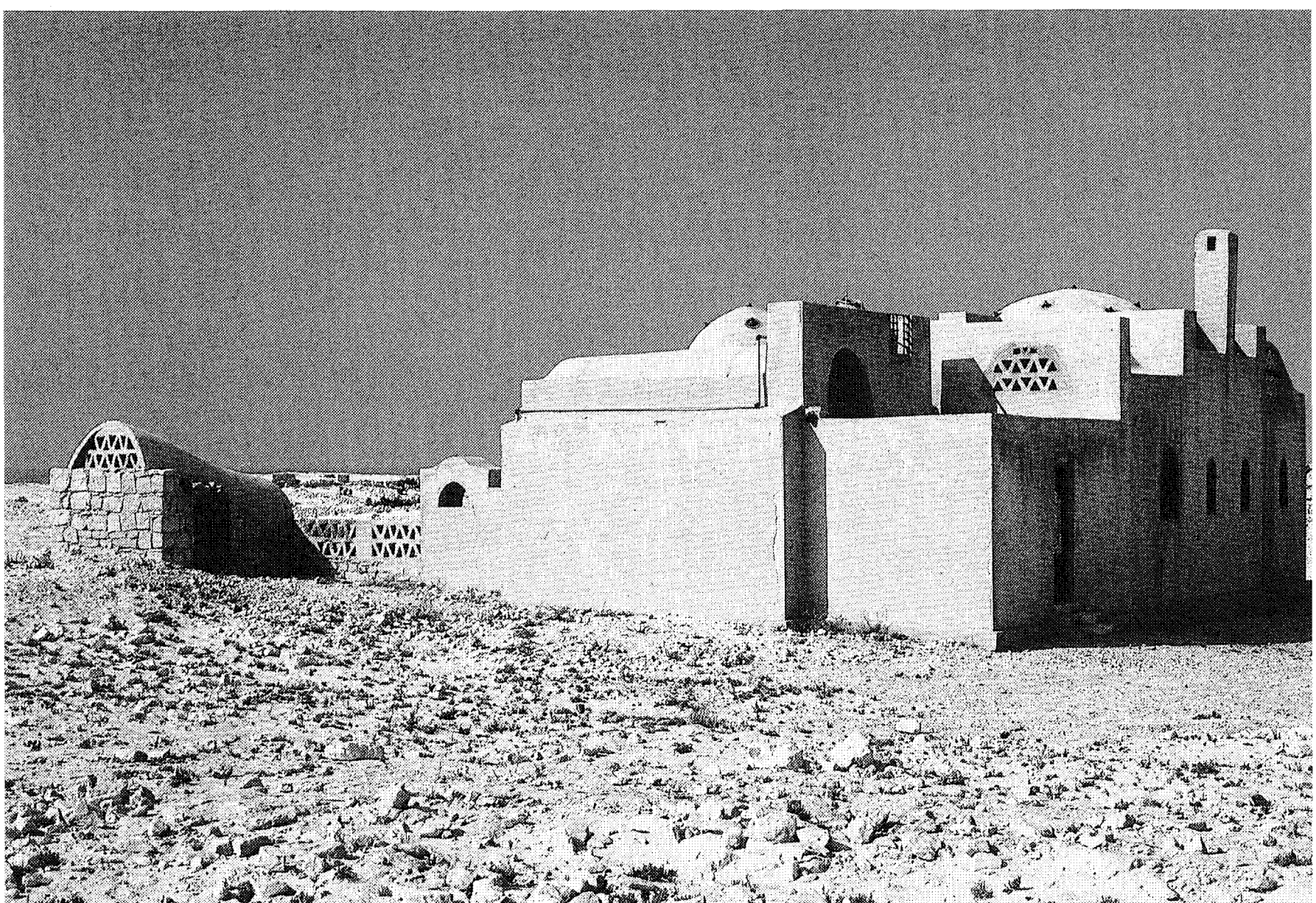


Plate 24 Plan 1971



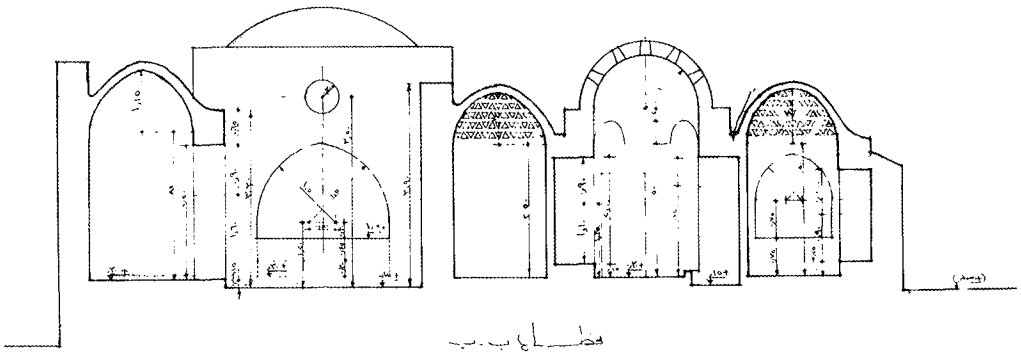


Plate 26 Longitudinal section

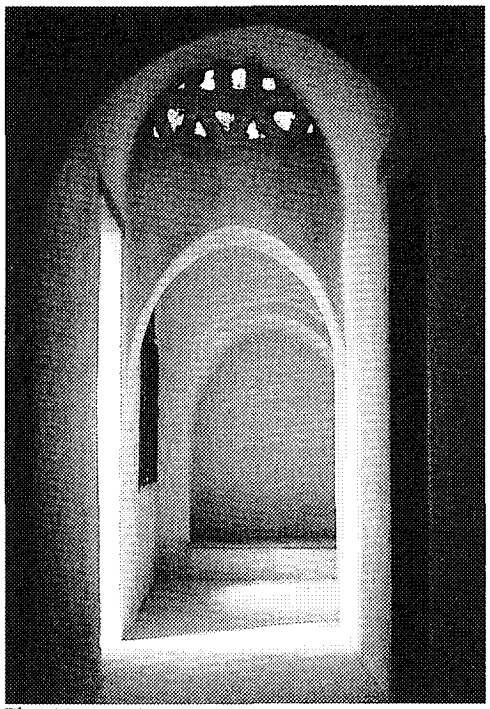


Plate 27 Corridor

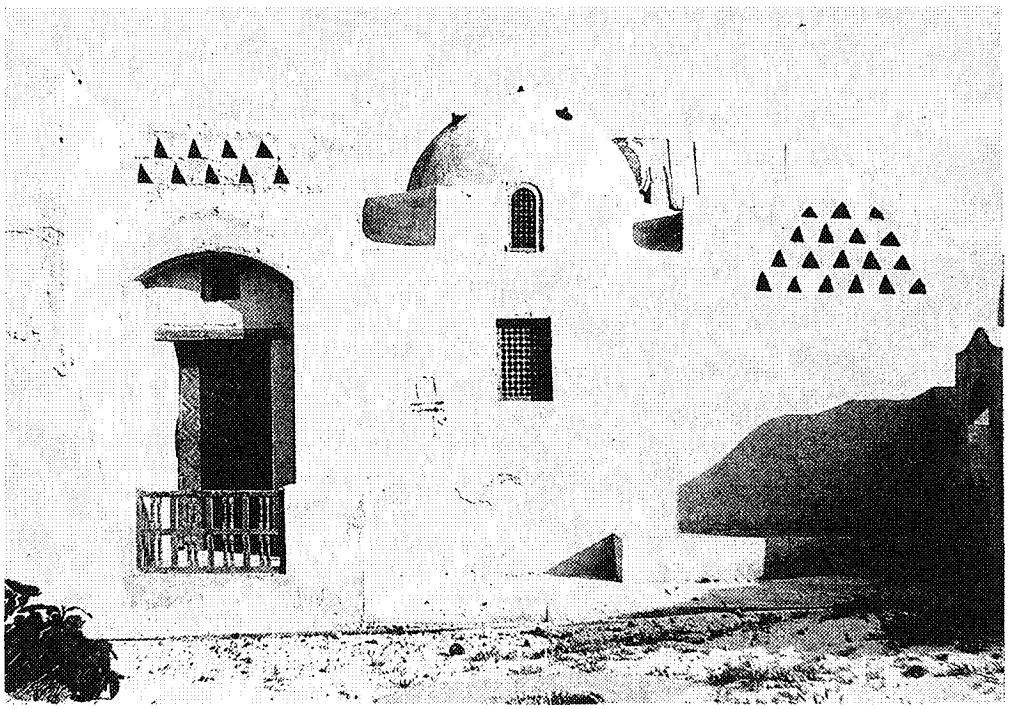


Plate 28 Entrance facing the sea

late 25 Massing at southeast corner

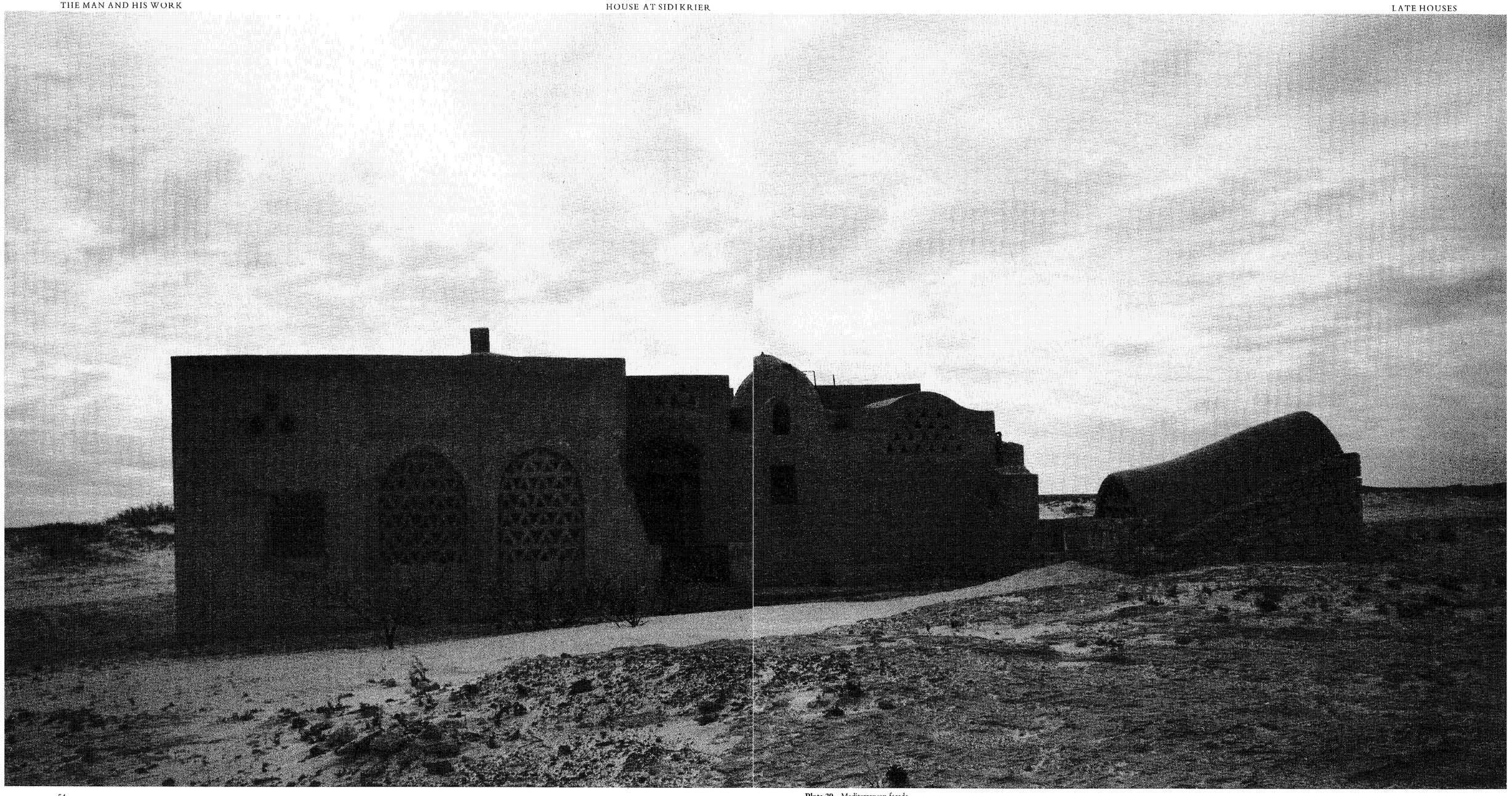


Plate 29 Mediterranean facade

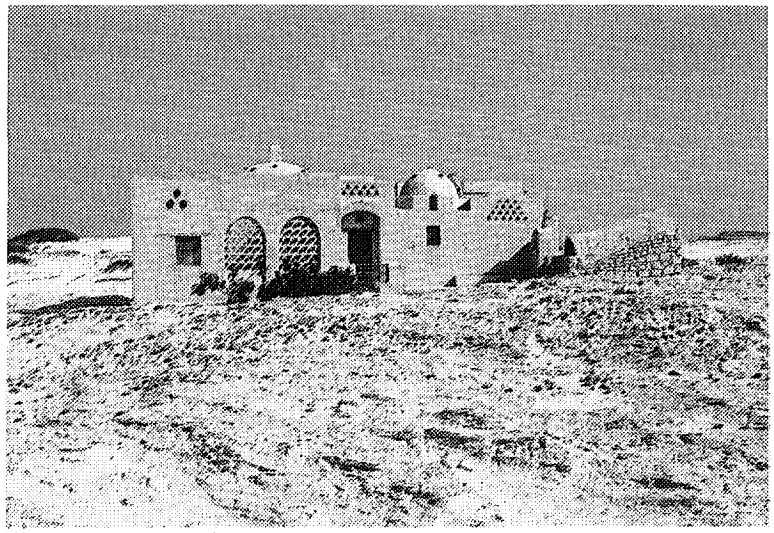


Plate 31 Mediterranean facade

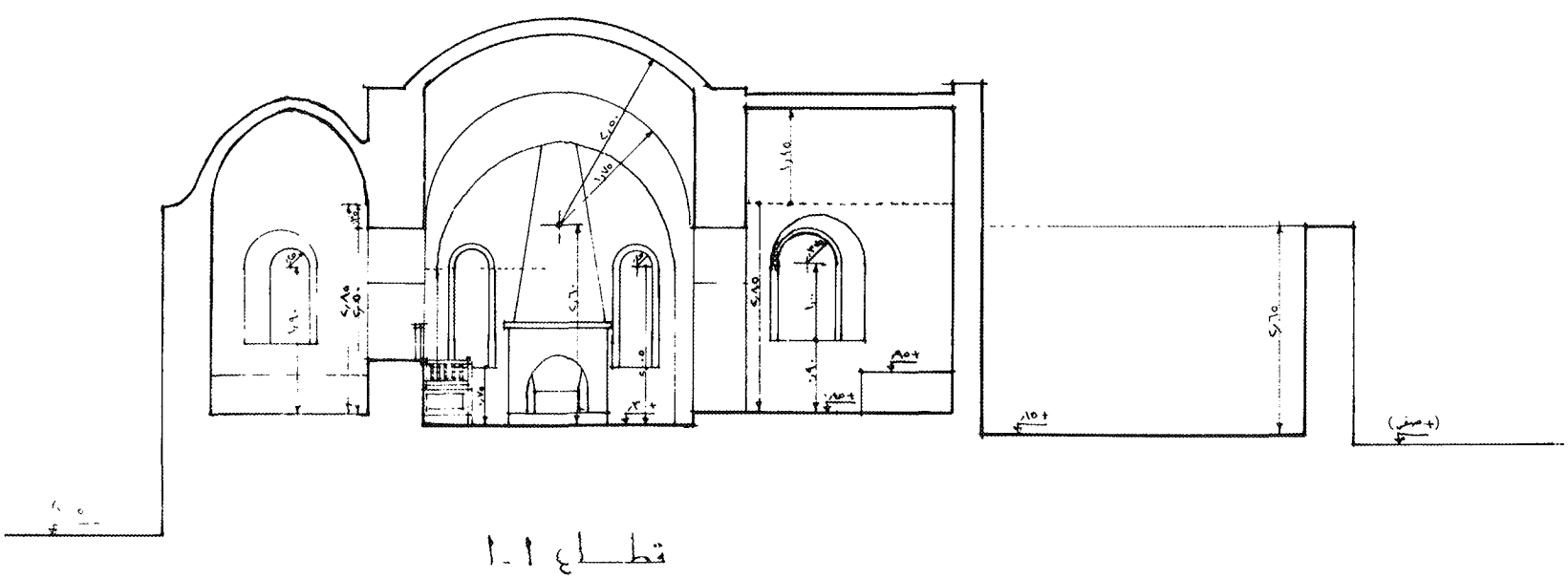


Plate 30 Transverse section of *dorka'a*

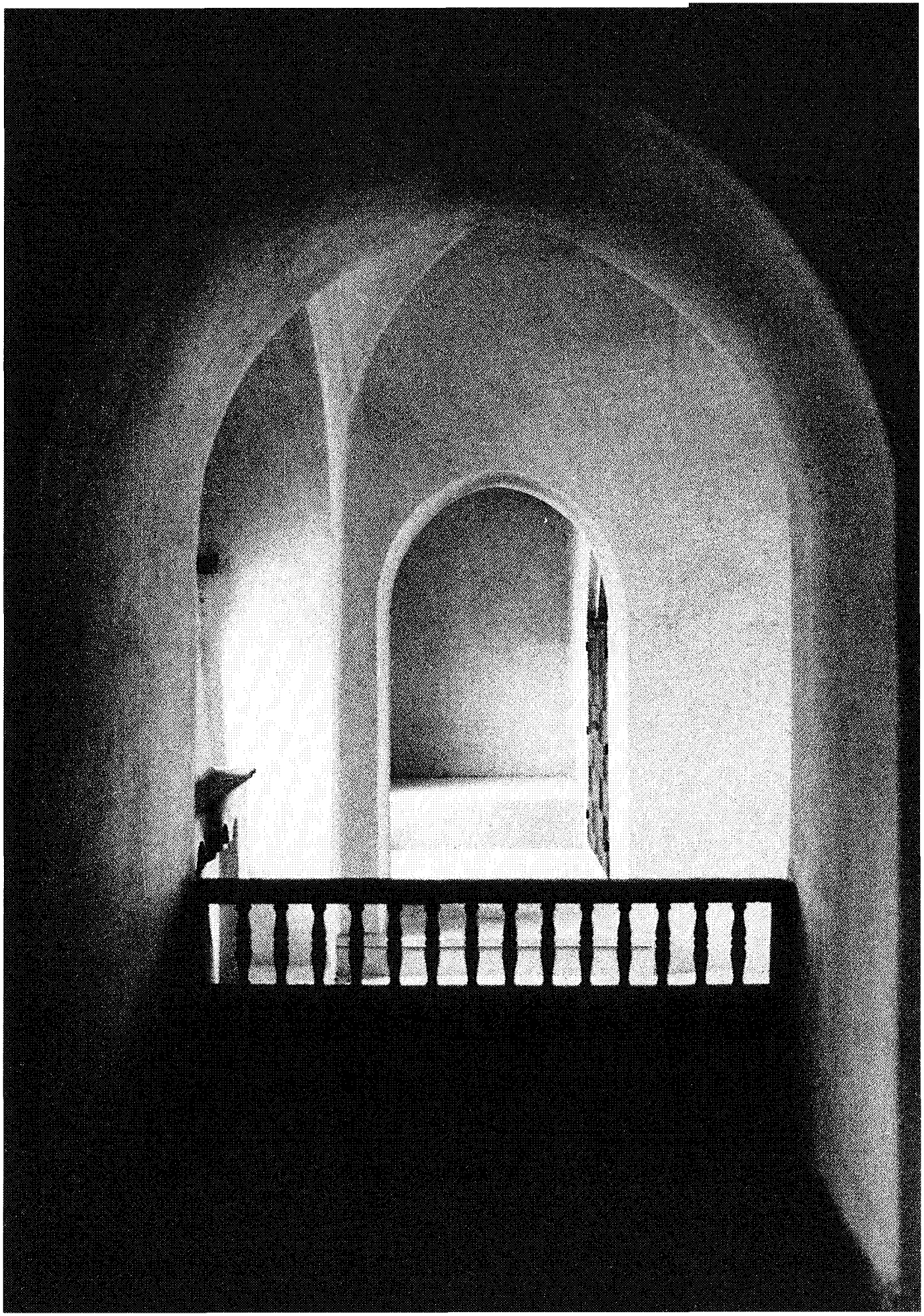


Plate 32 *Ka'a*

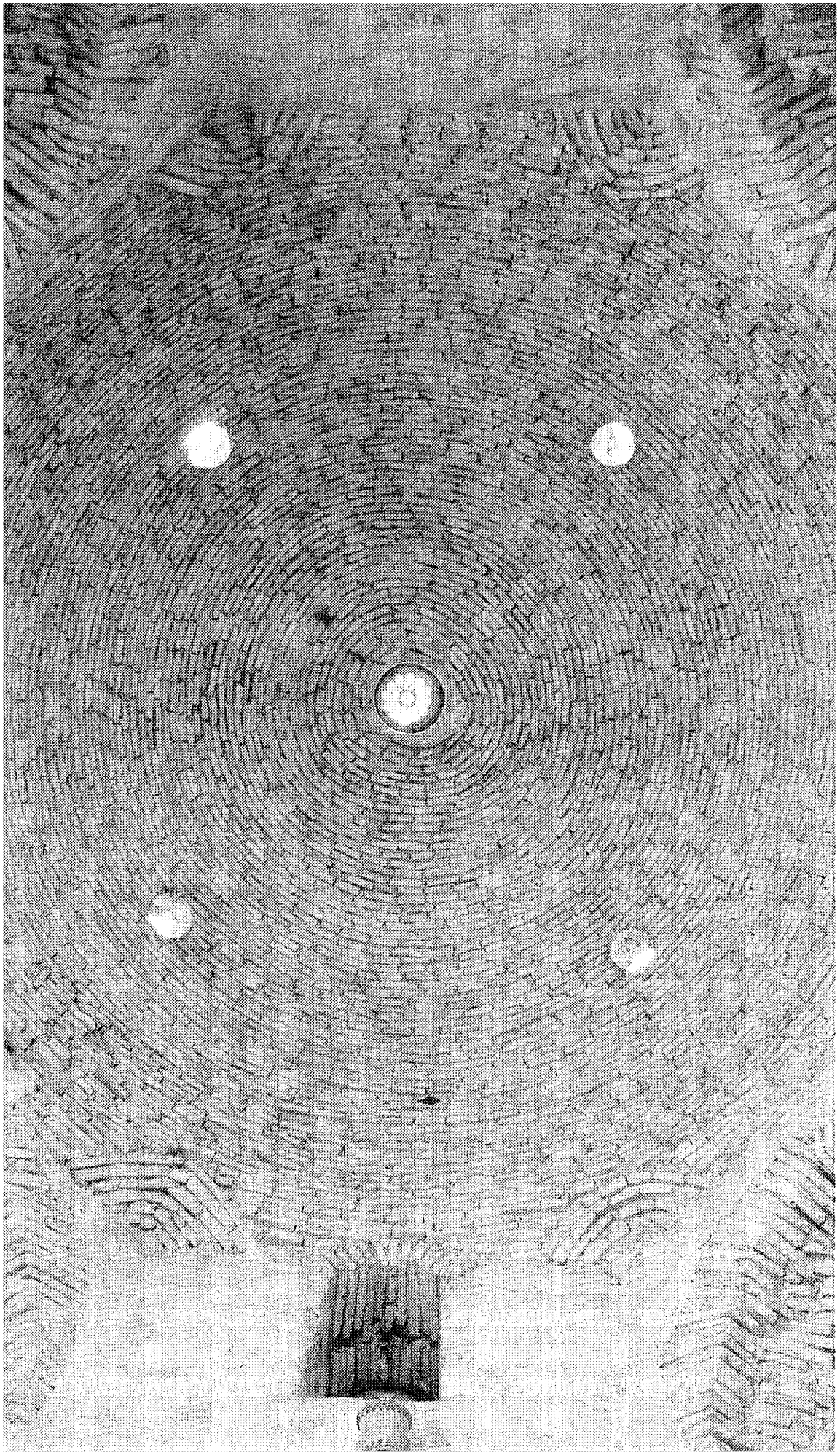


Plate 33 *Dorka'a* dome

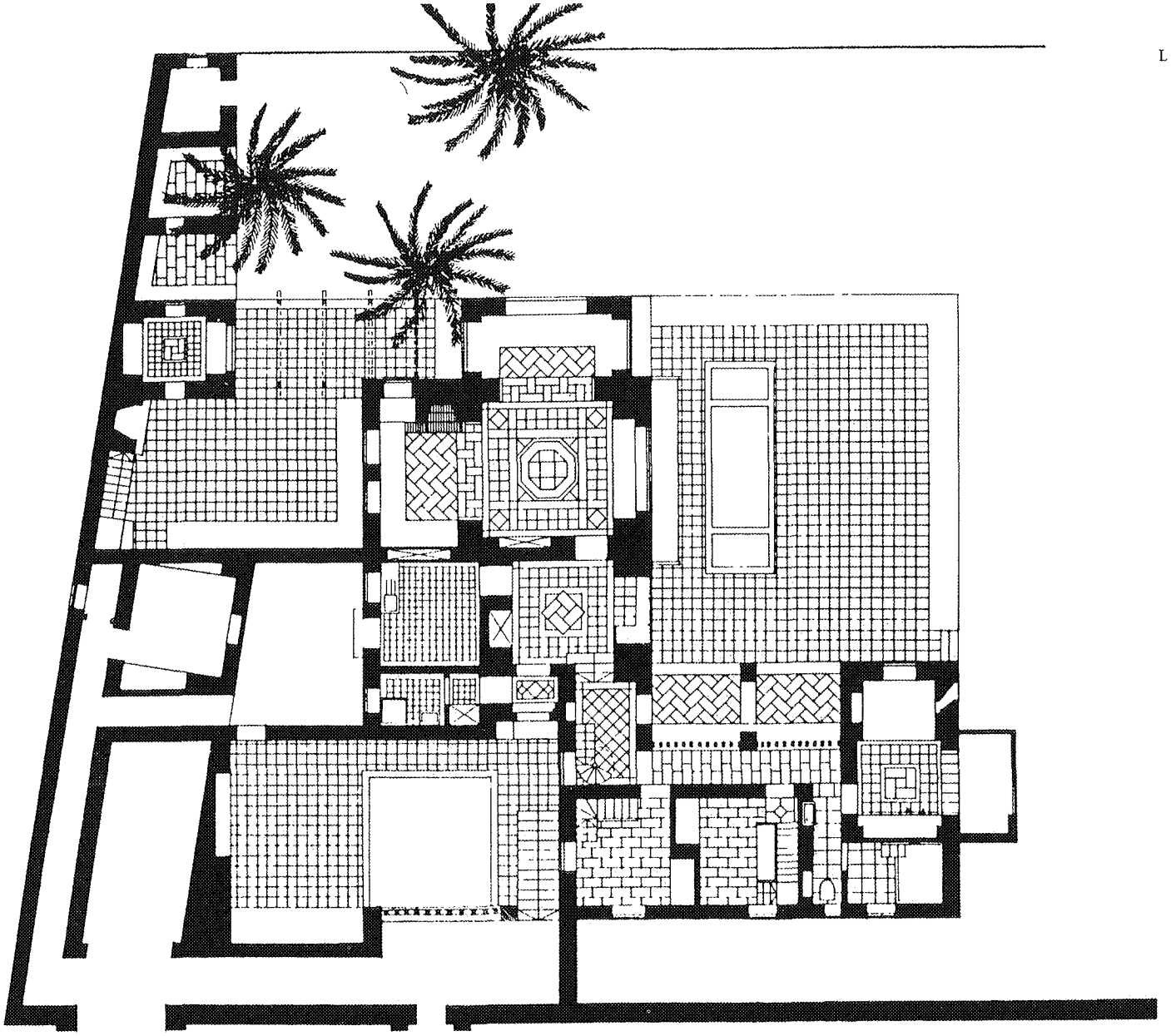


Plate 34 Plan 1973

Plate 35 Portal at boundary wall

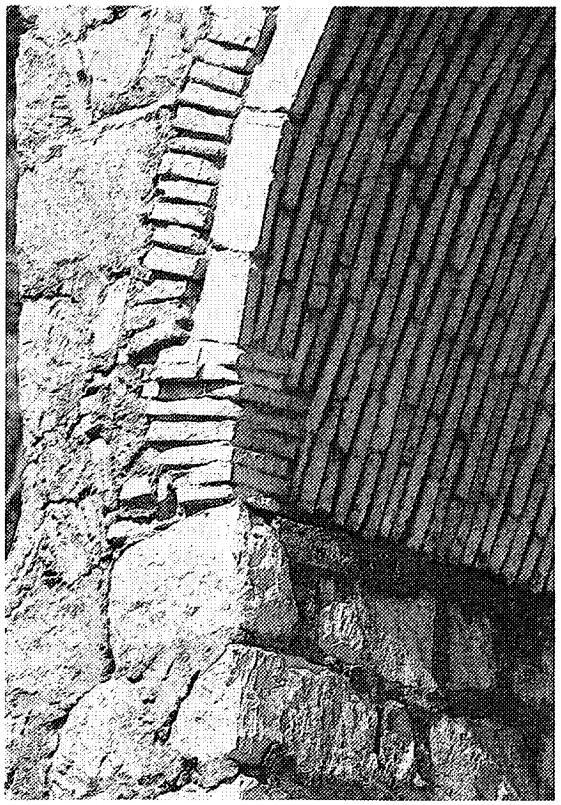


Plate 36 Pavilion interior

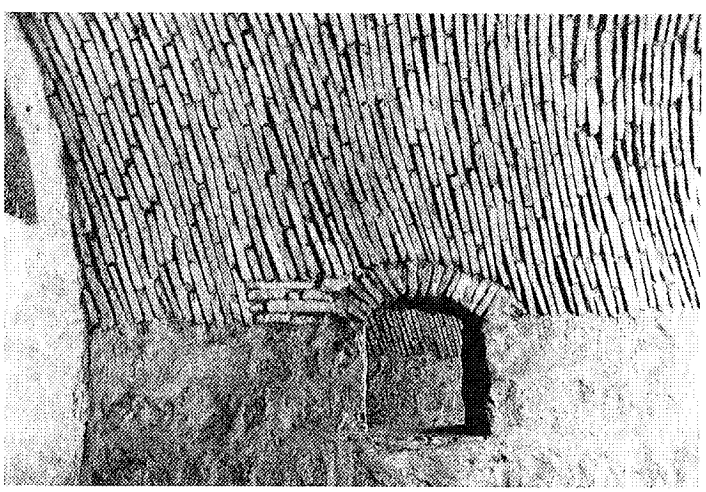


Plate 37 Pavilion interior

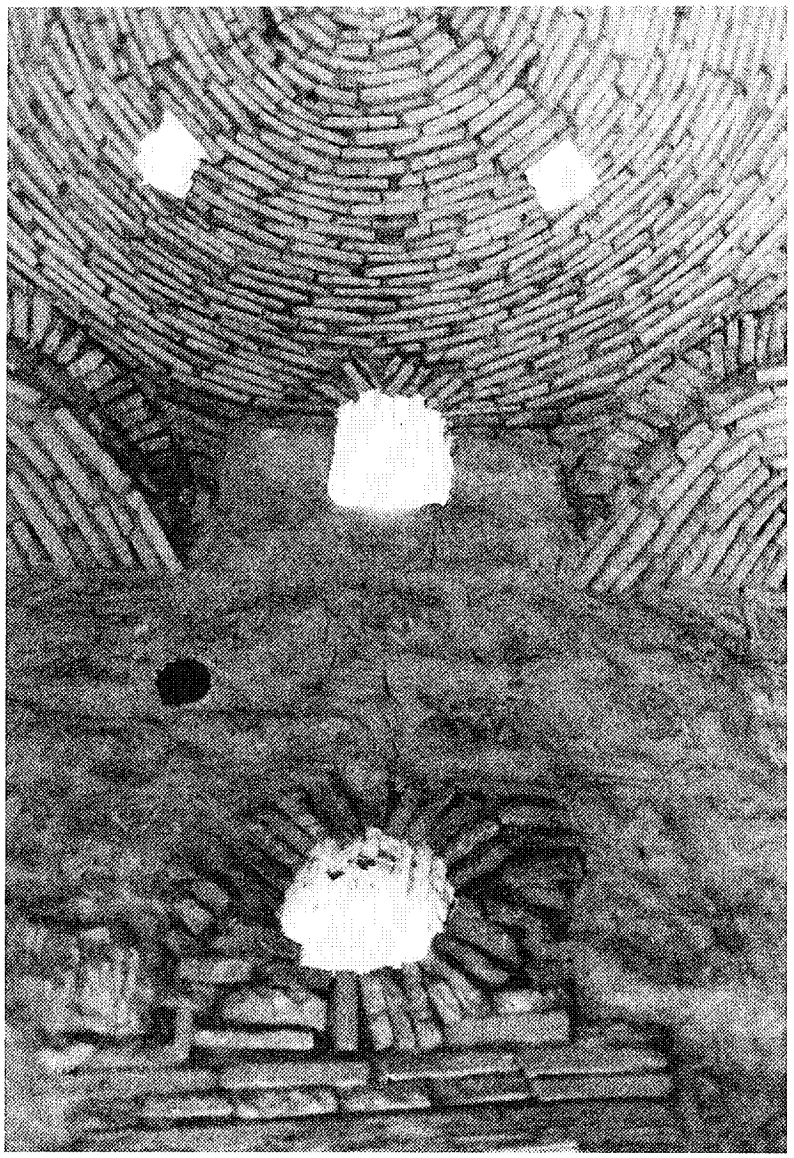


Plate 38 Pavilion interior

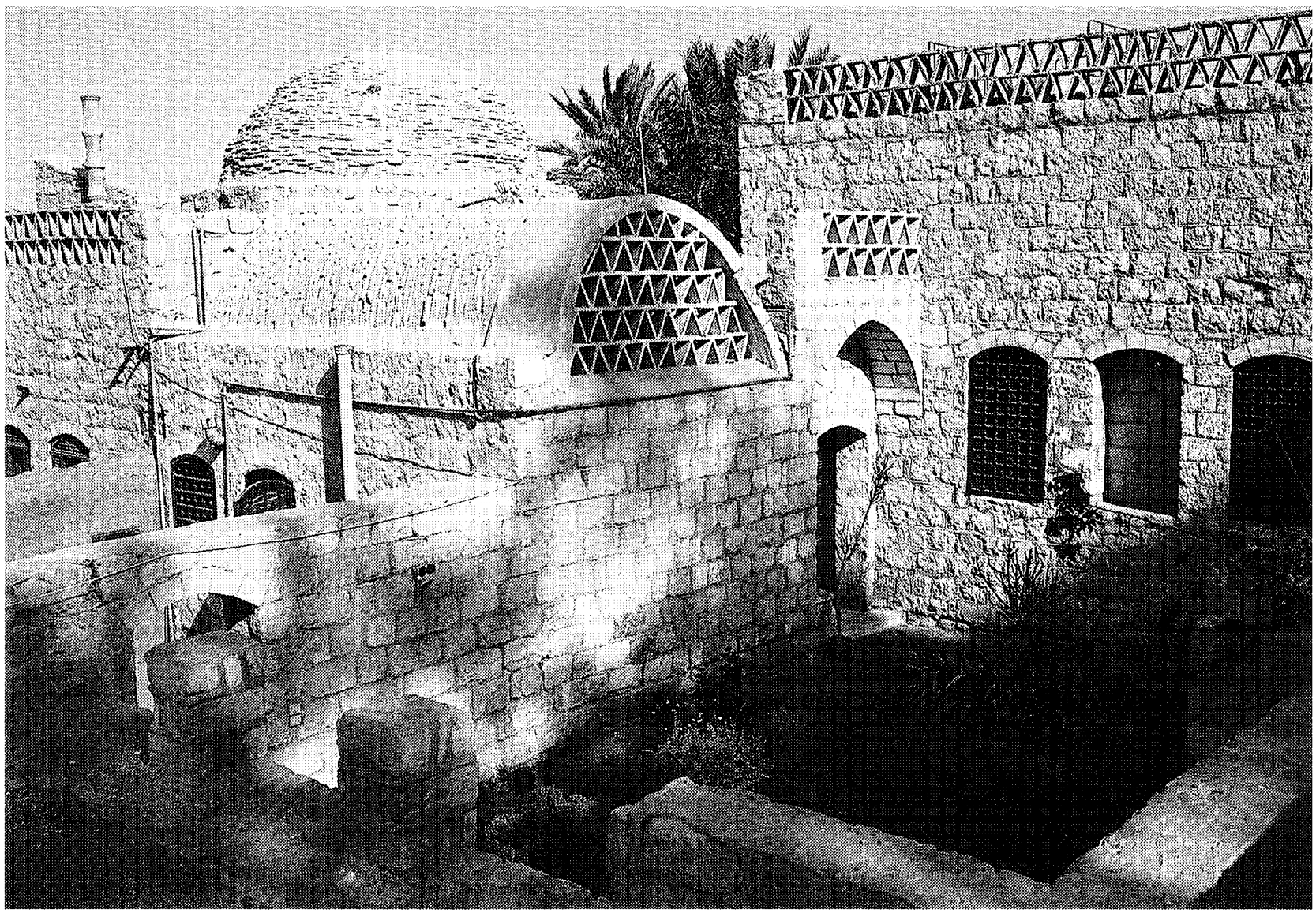


Plate 39 Entry courtyard

Plate 40 Portal to interior

Plate 41 Massing viewed from the east

Plate 42 Northeast facade of pavilion.

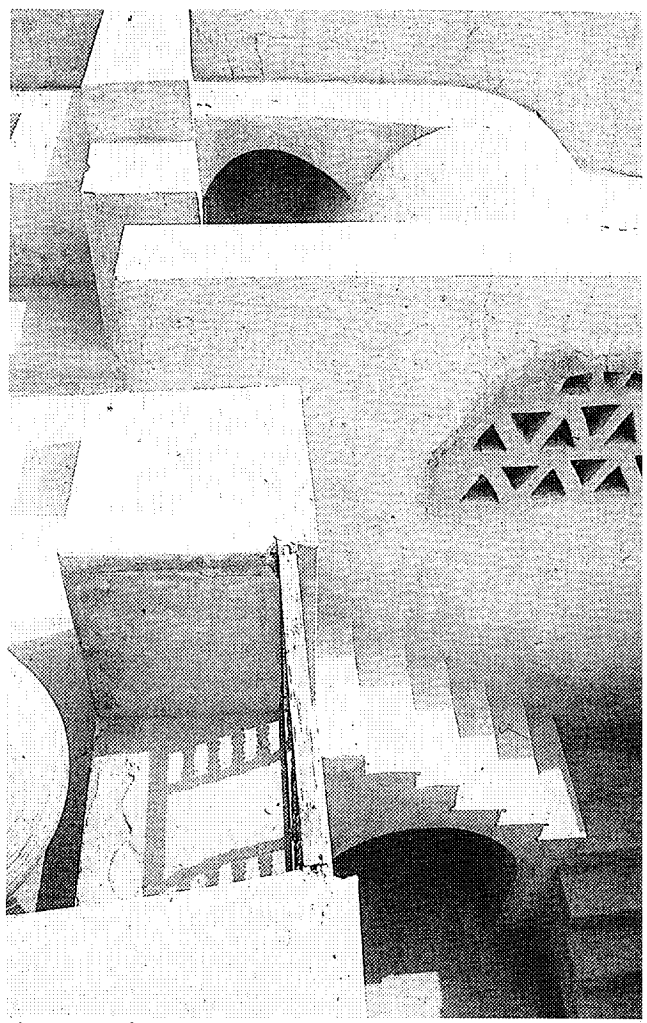


Plate 43 Roofscape

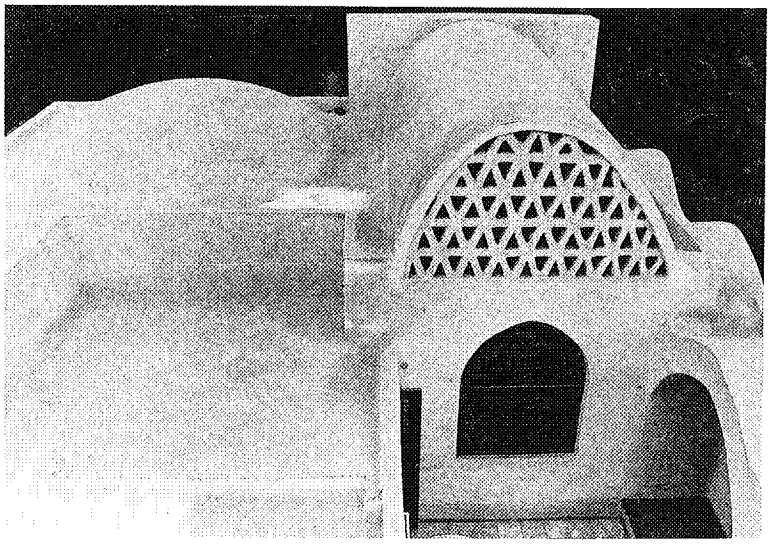


Plate 44 Solarium and roofscape

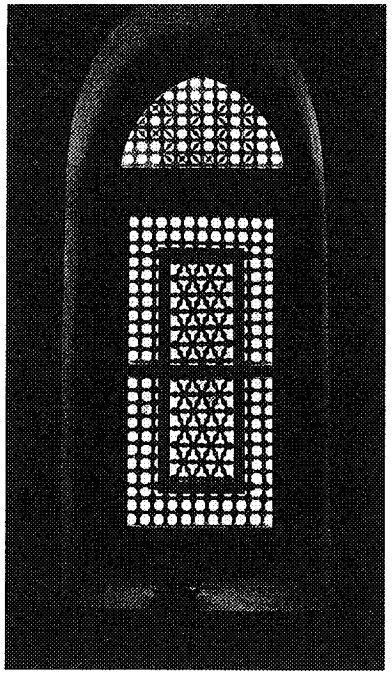


Plate 45 Bedroom window

Plate 46 Partial southwest facade

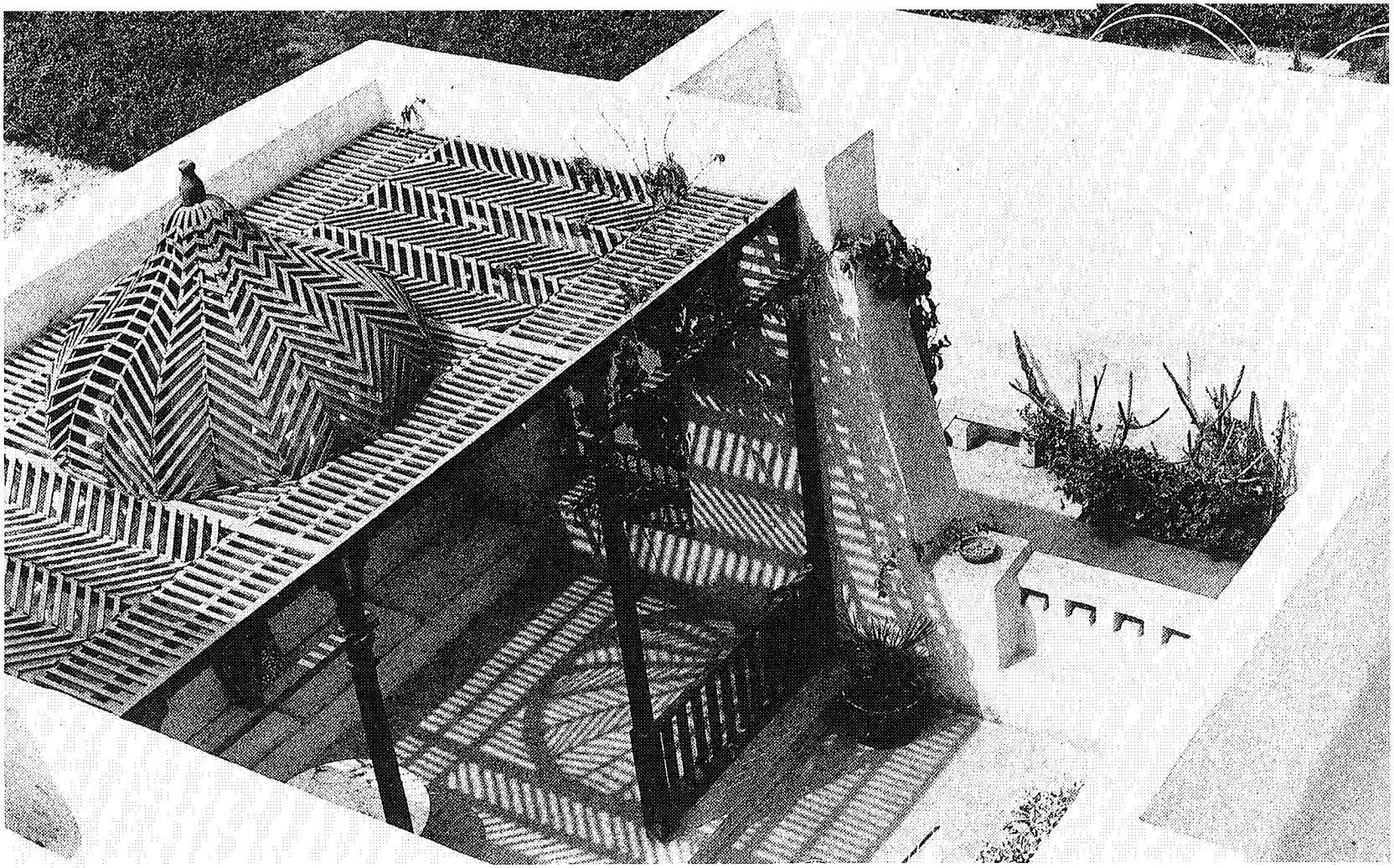


Plate 47 Upper and lower courtyards

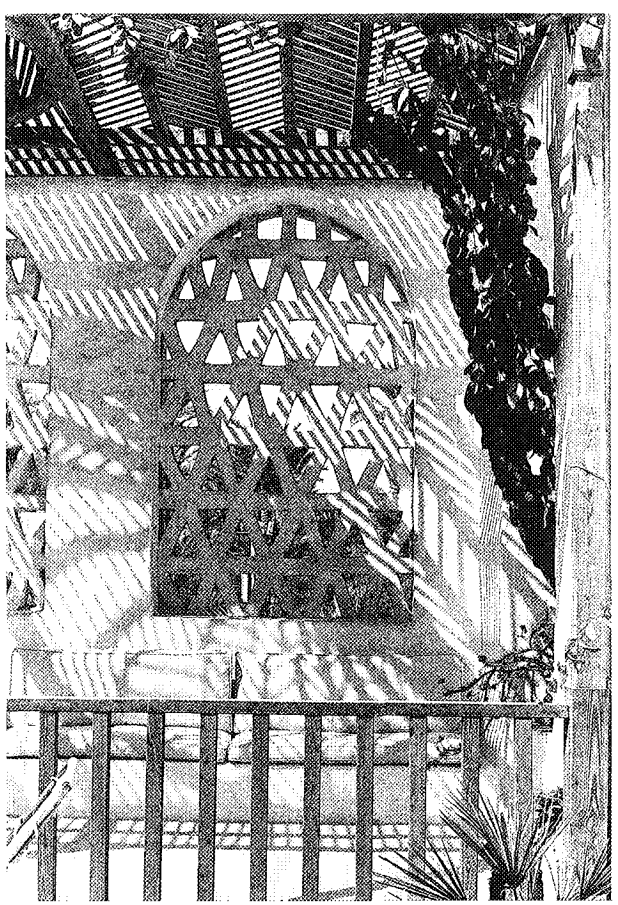


Plate 48 Lacy light

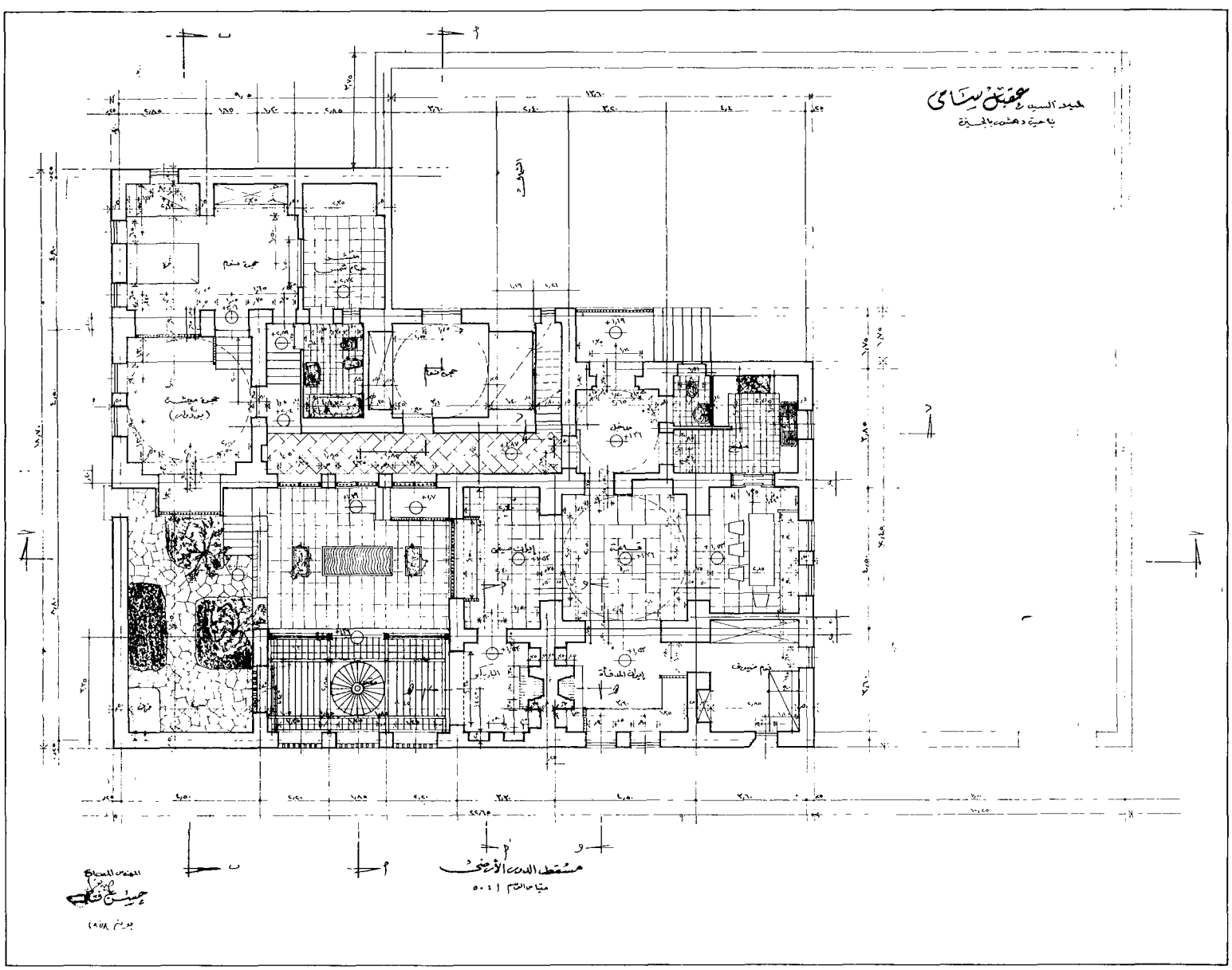


Plate 49 Plan 1979

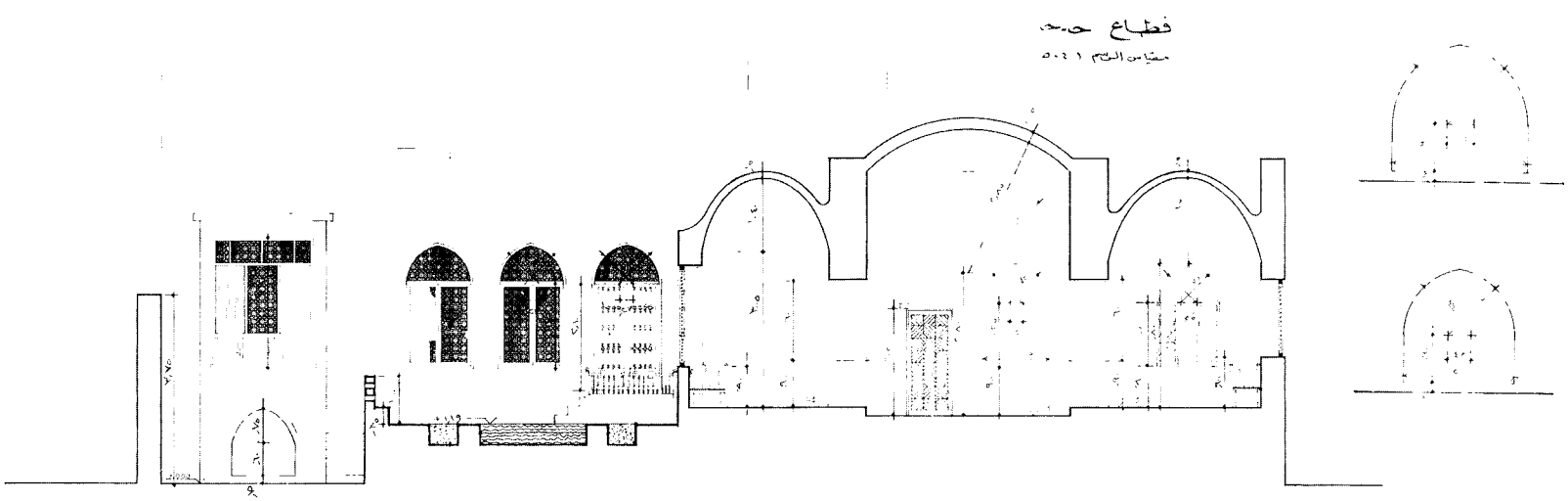


Plate 50 Longitudinal section

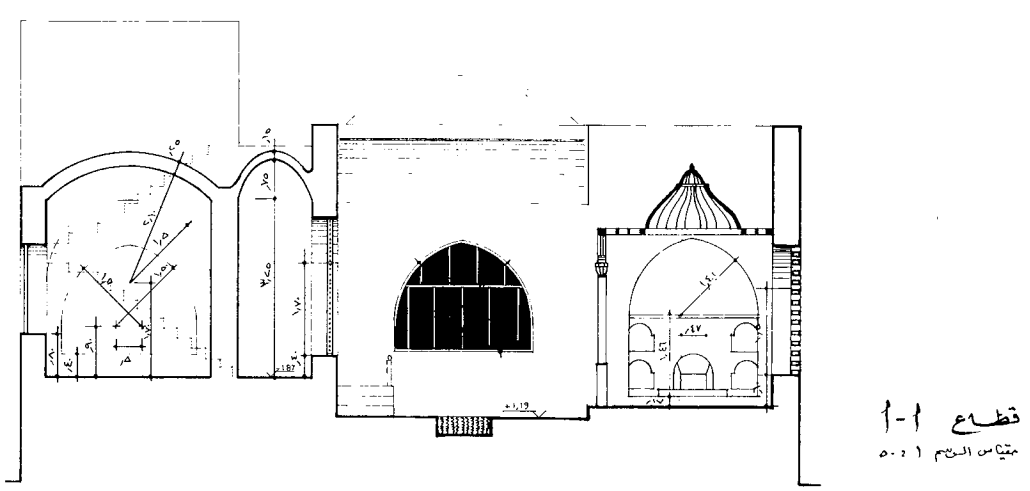


Plate 51 Transverse section

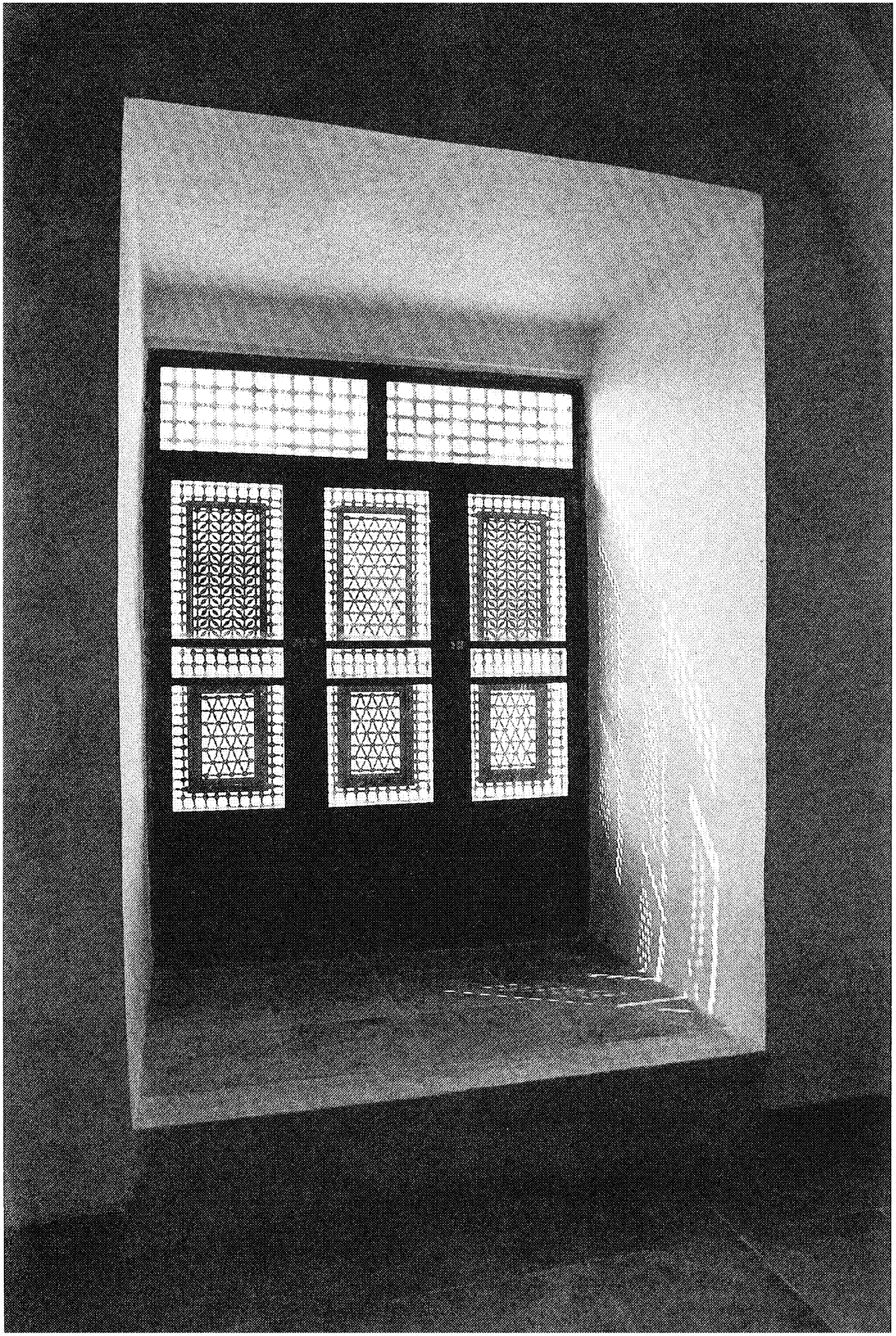
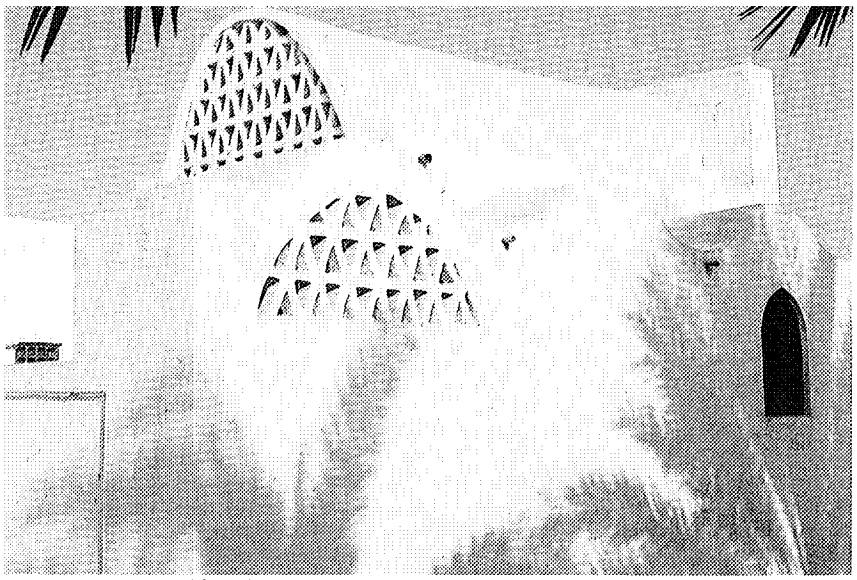


Plate 52 Oriel *mashrabiyya* in master bedroom



ate 53 Massing viewed from the east

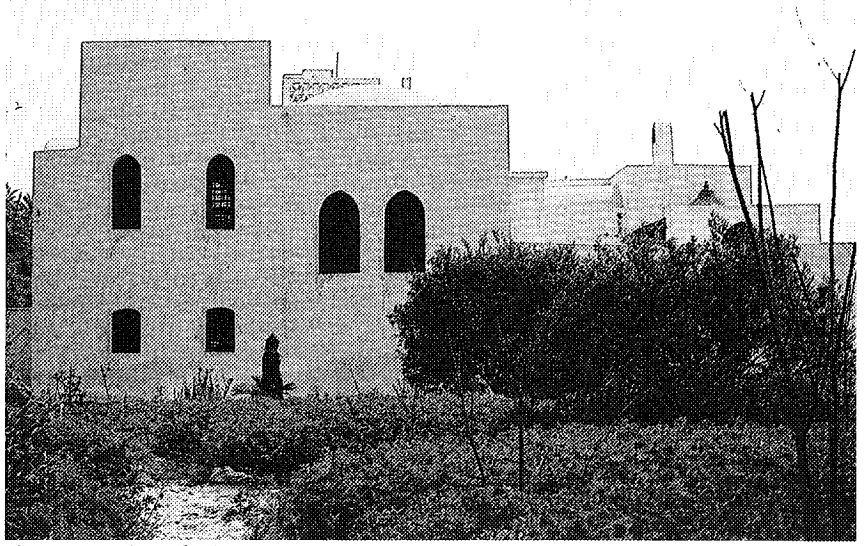


Plate 54 Northwest facade

ate 55 Massing from southeast

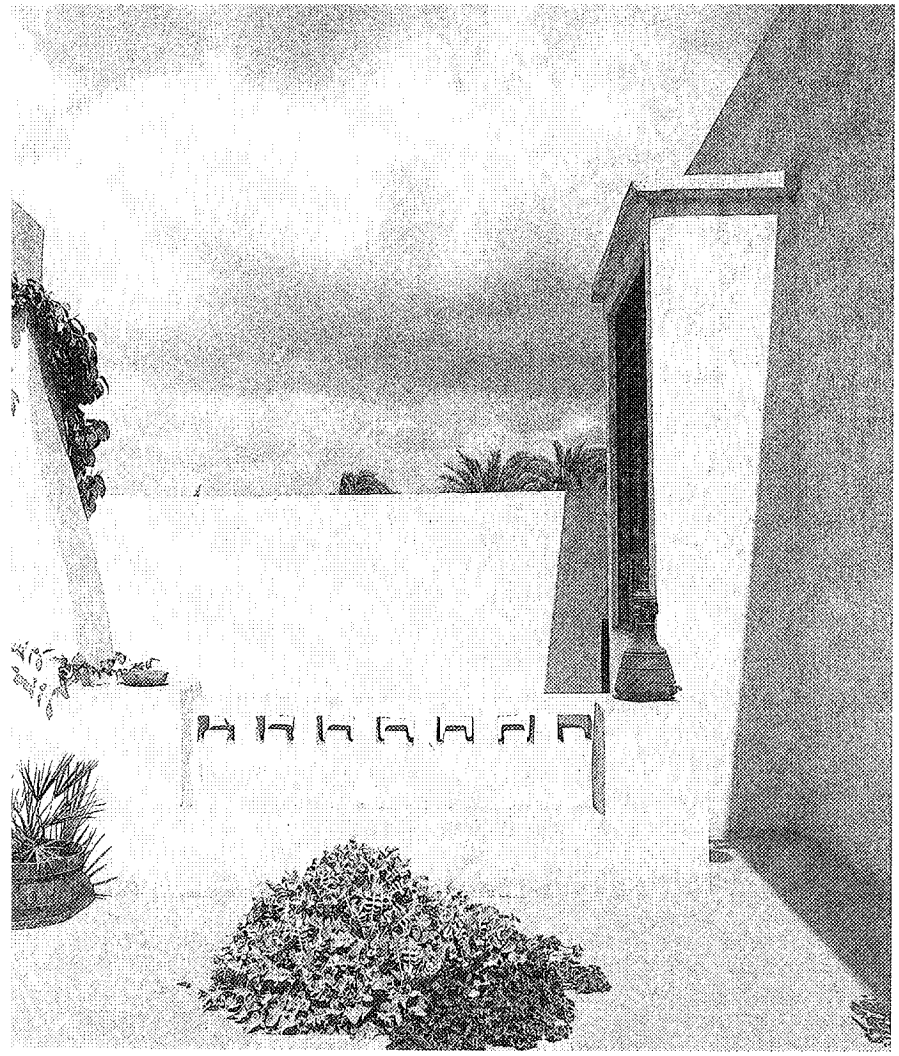


Plate 56 Upper courtyard

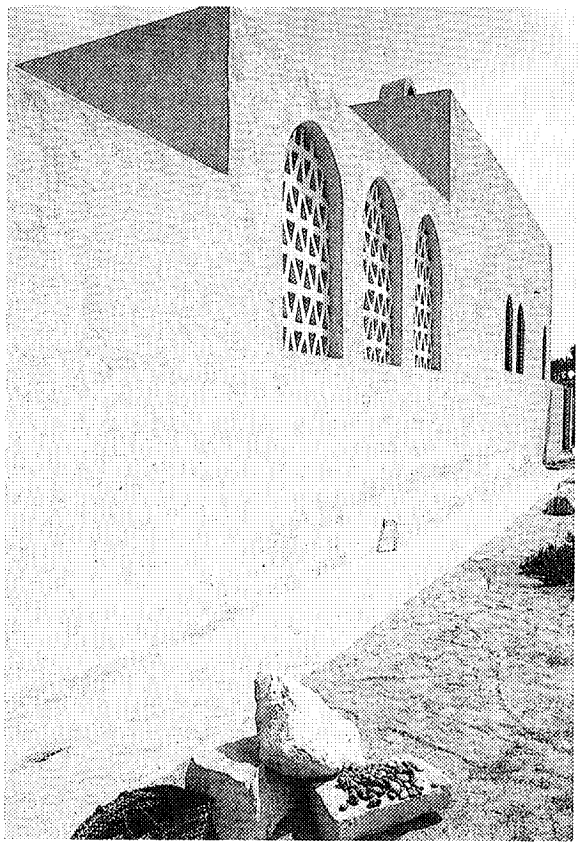


Plate 57 Southwest wall

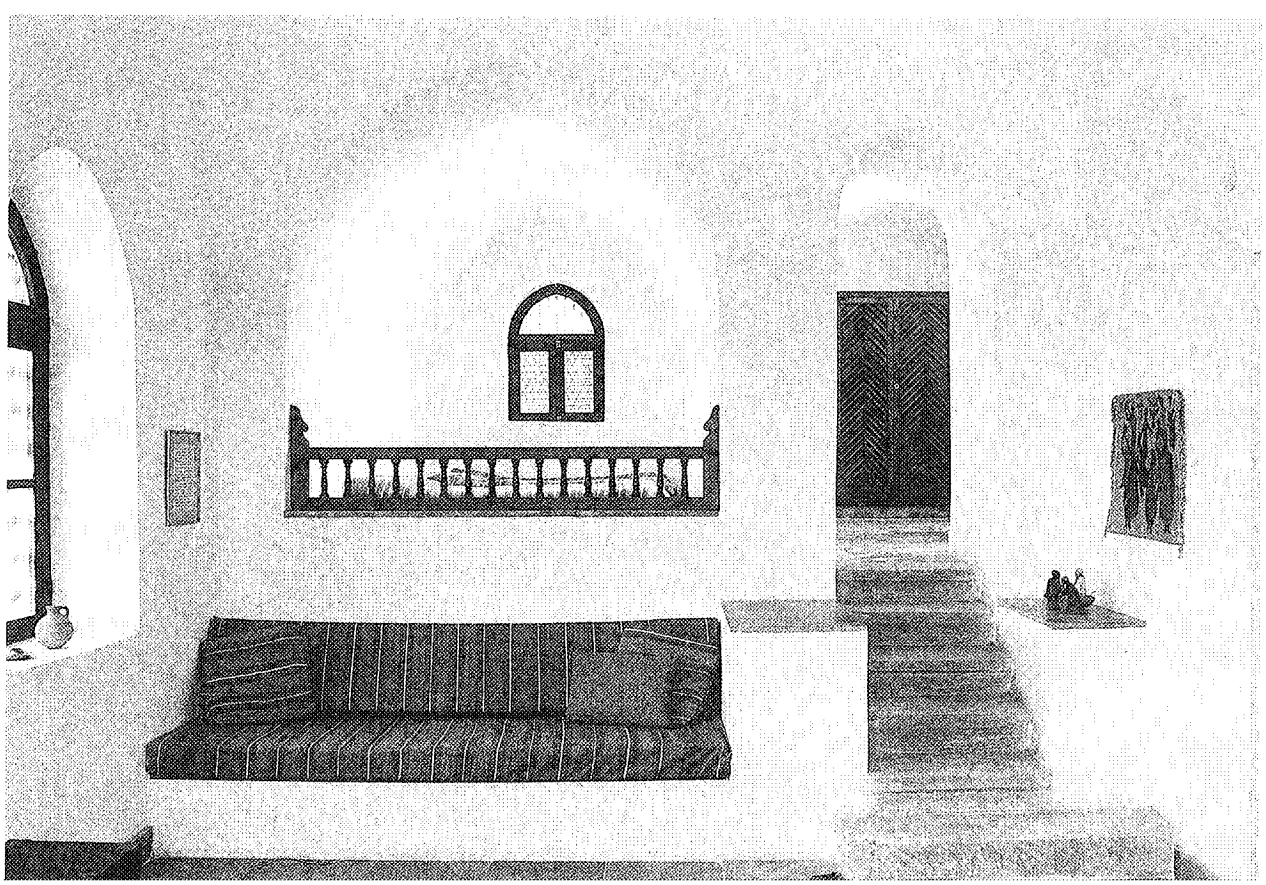


Plate 58
Master bedroom with sleeping area under upper level vault

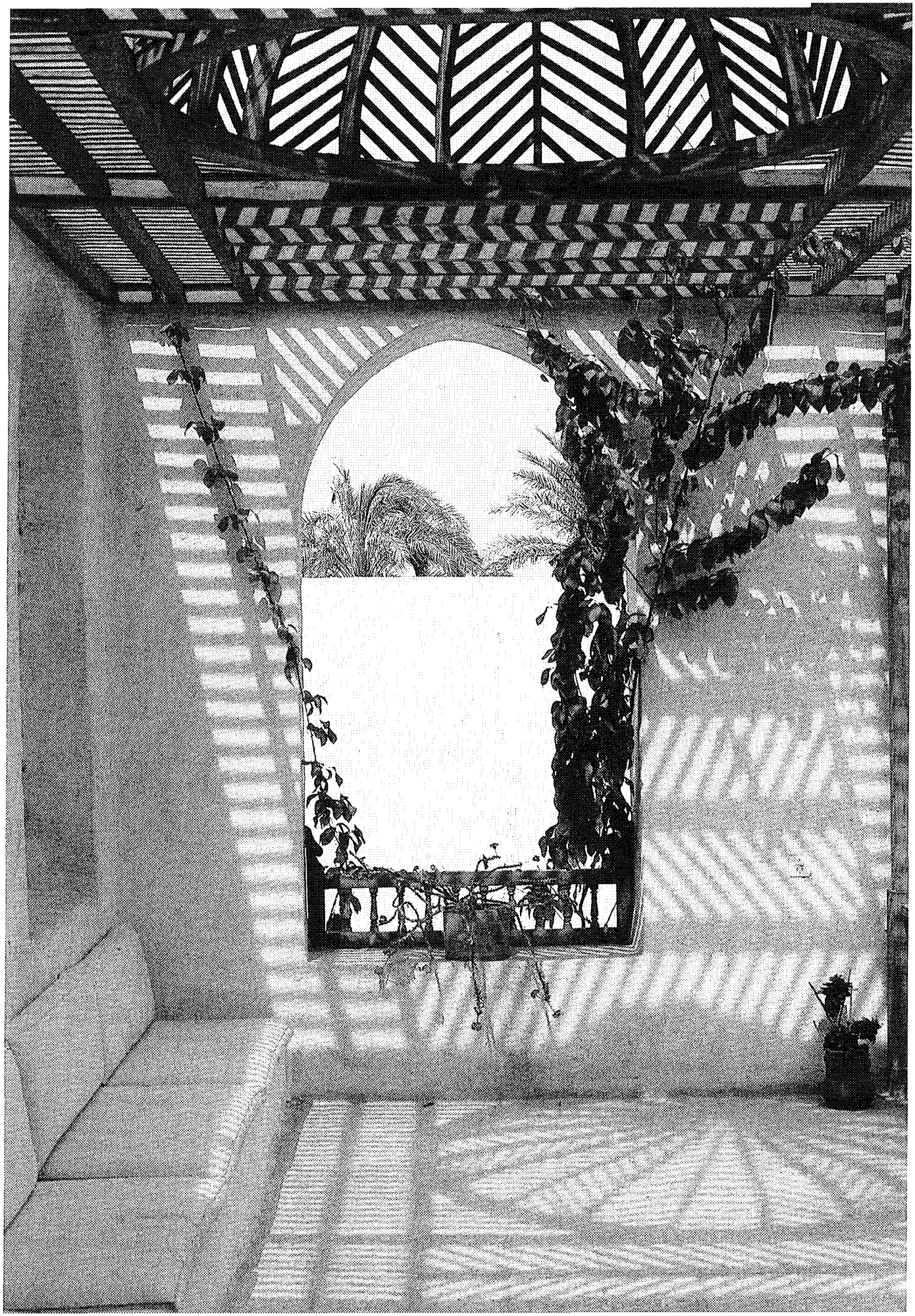


Plate 59
Within the courtyard lattice

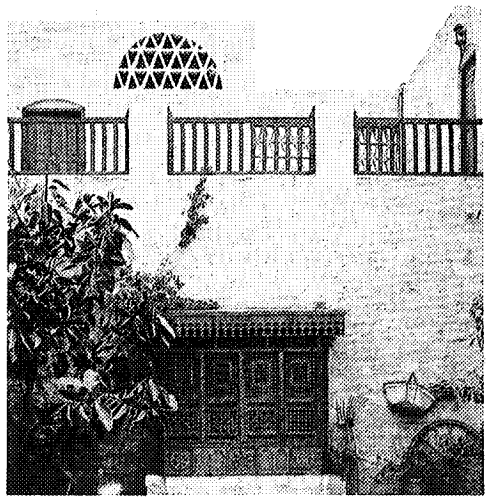


Plate 60 Northeast courtyard wall.

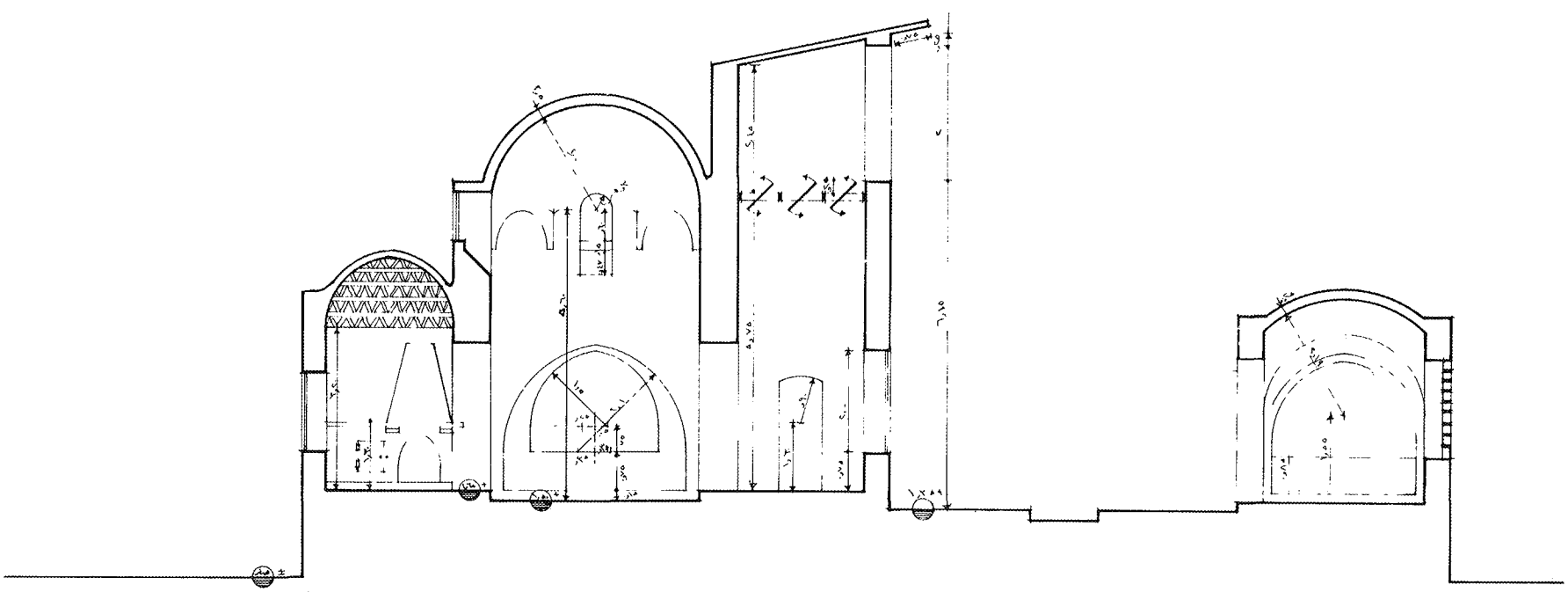


Plate 61 Section through *ka'a*

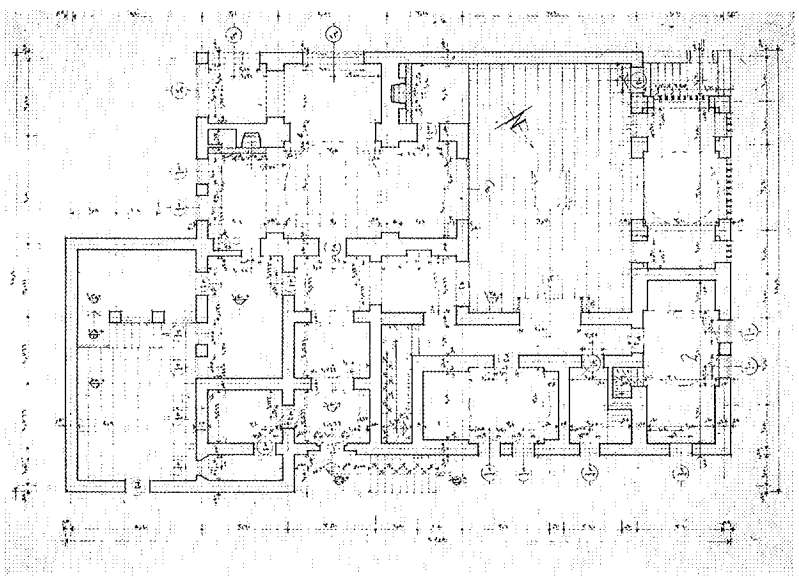


Plate 62 Ground level plan 1981.

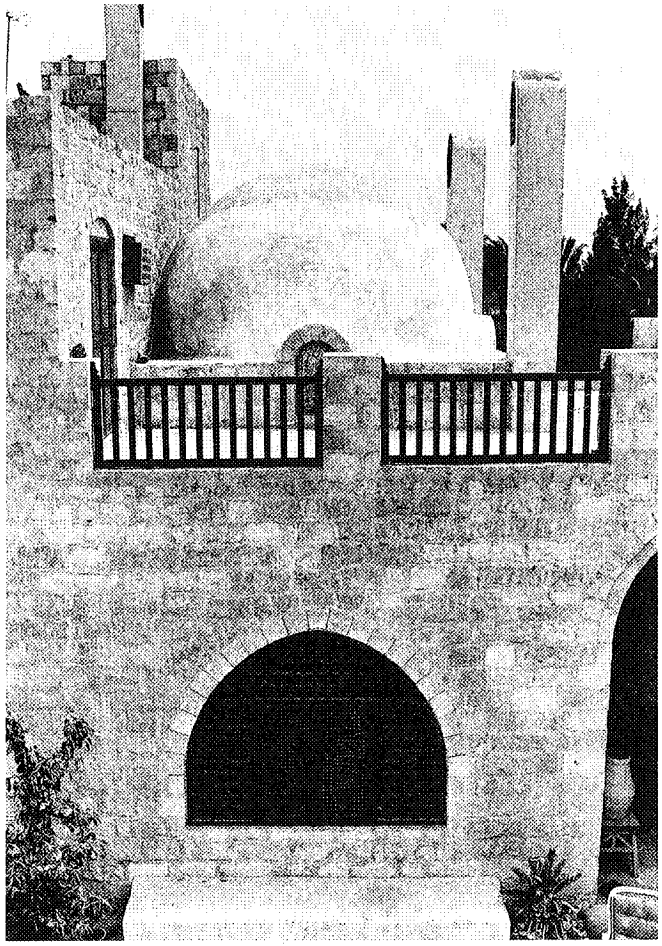


Plate 63 Massing facing courtyard

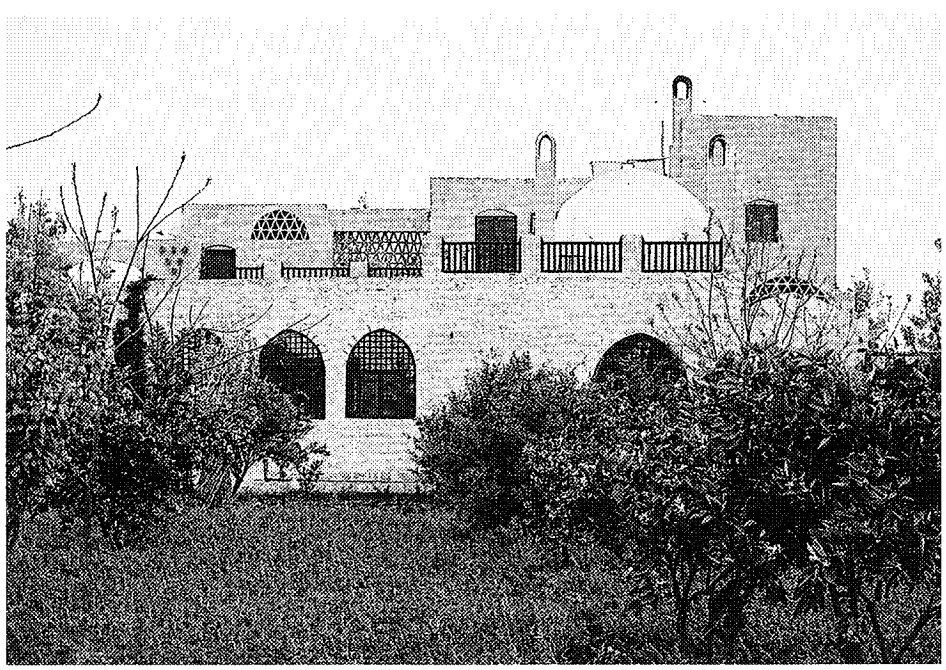


Plate 64 Southwest facade

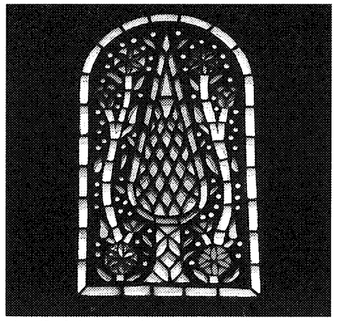


Plate 65 Stained glass window in *dorka'a* squinch

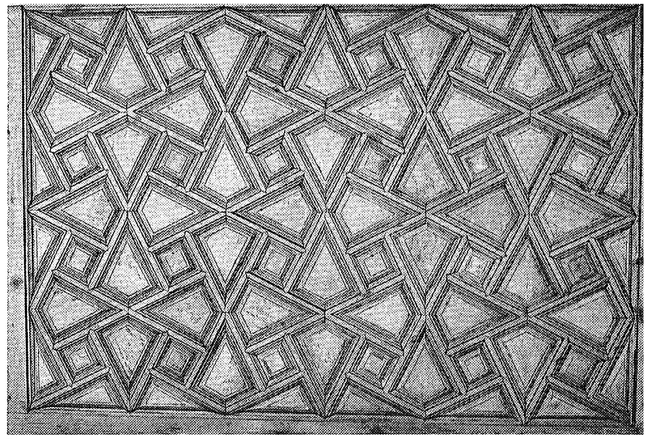
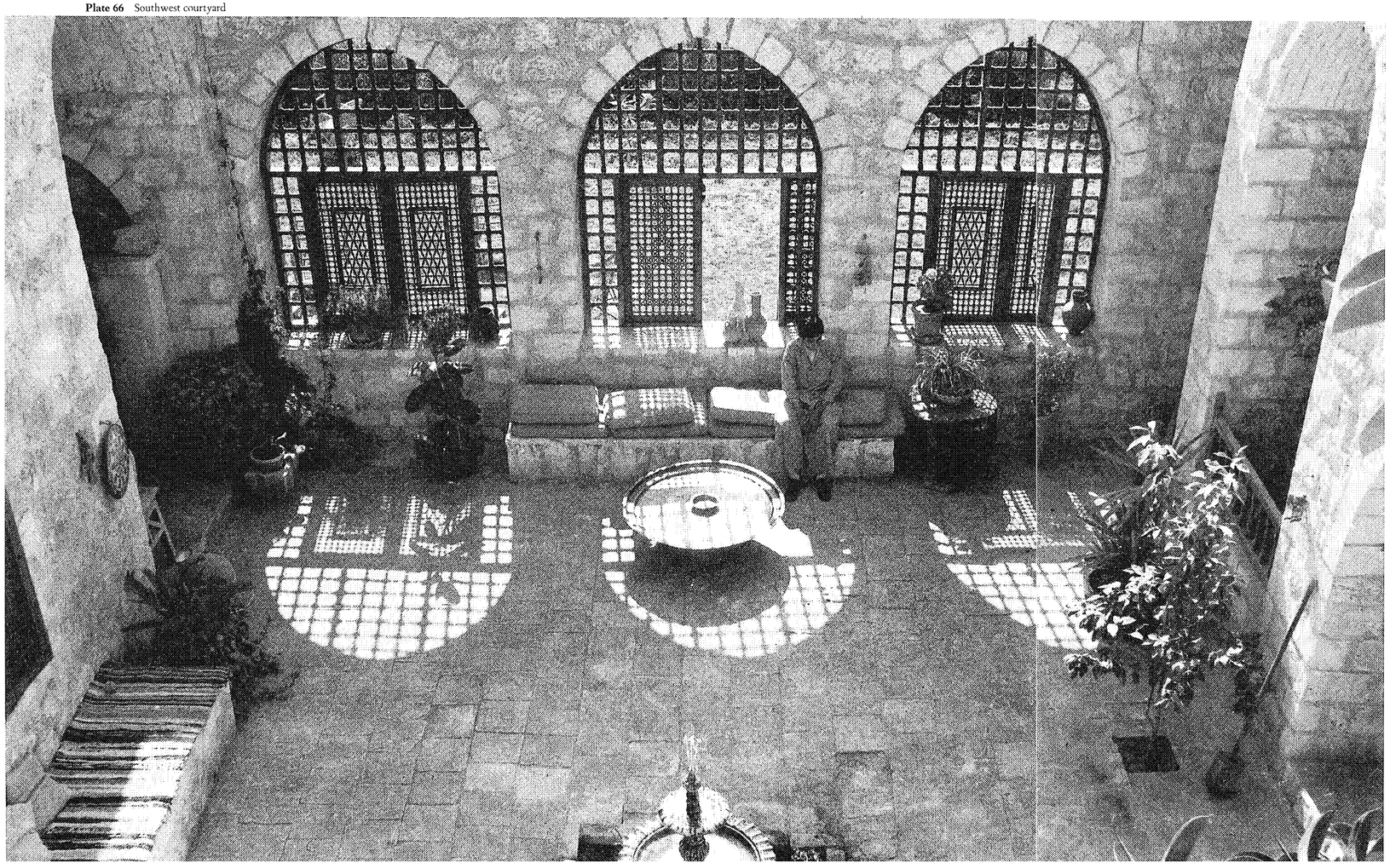


Plate 67 Wood cabinet detail

Plate 66 Southwest courtyard



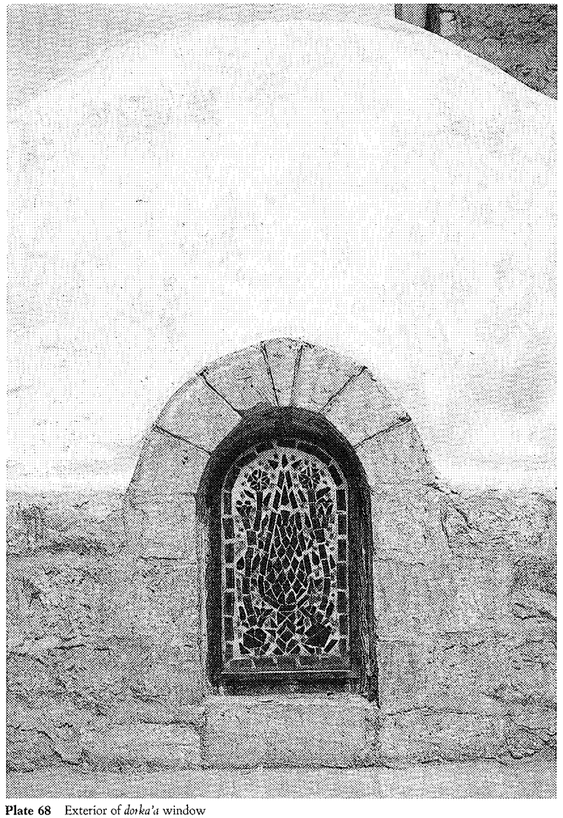


Plate 68 Exterior of *dorka'a* window

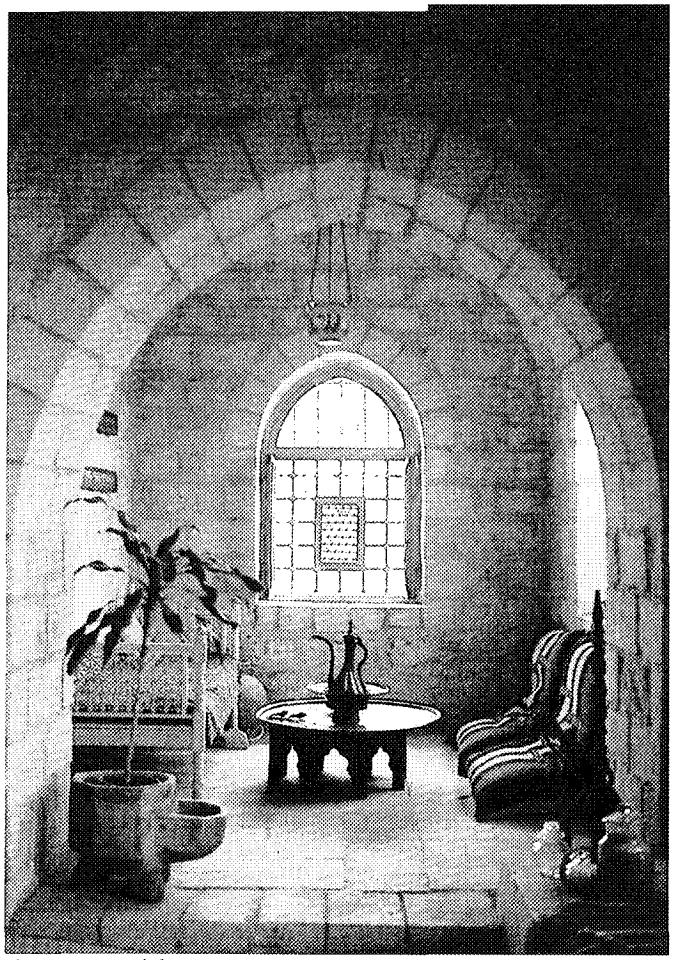


Plate 69 Domed alcove

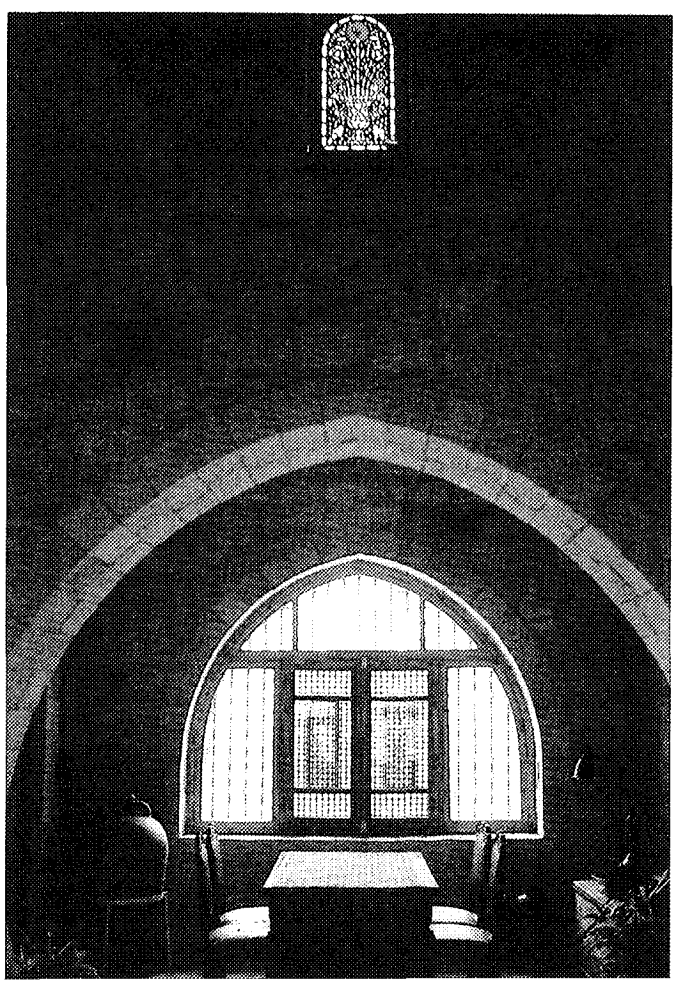


Plate 70 Dining *iwan*

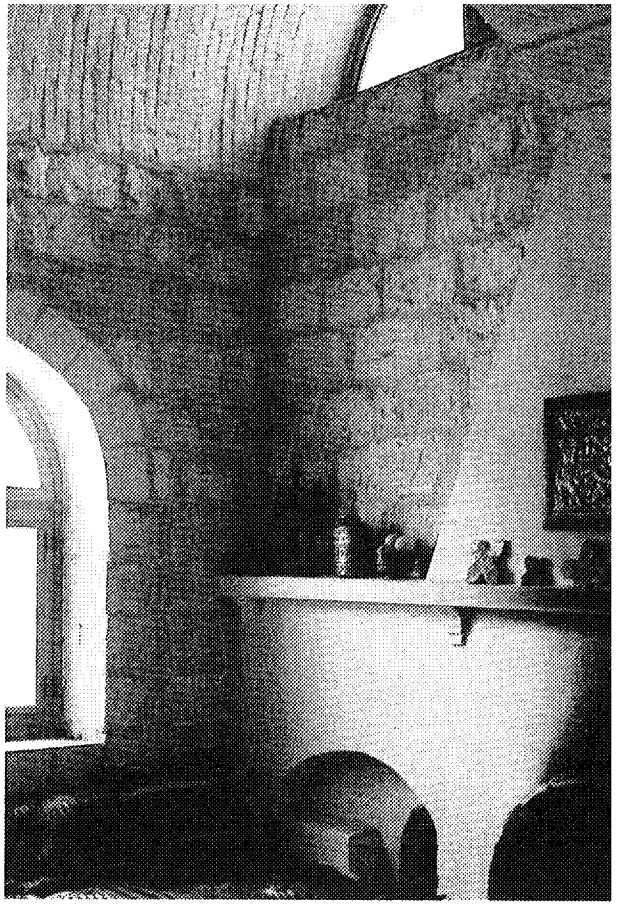


Plate 71 Corner detail with fireplace in southeast *iwan* of *ka'a*

Plate 72 Southwest *iwan* of *ka'a*

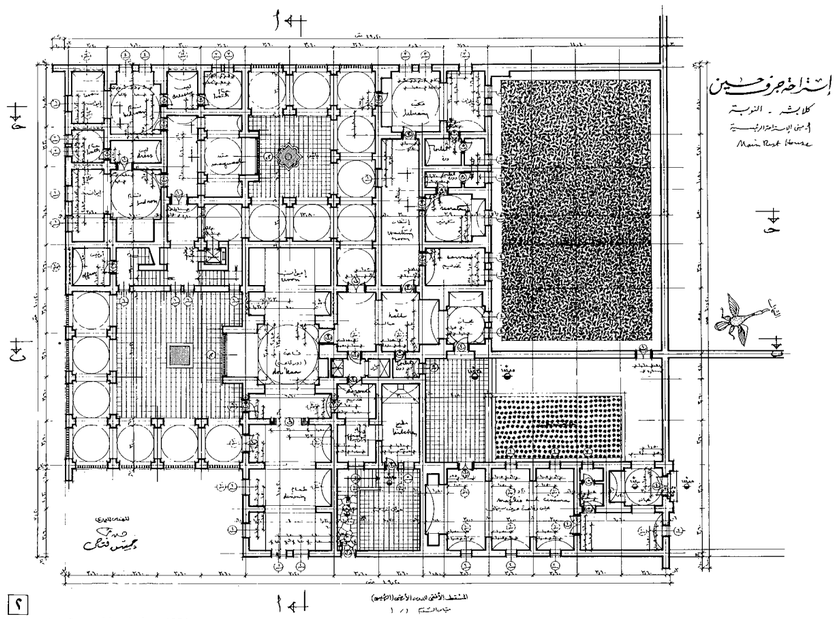


Plate 73 Ground level plan 1981

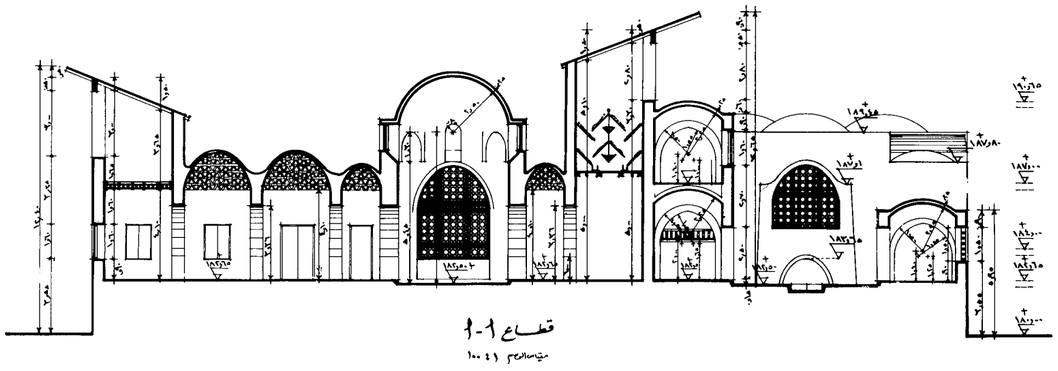


Plate 74 Longitudinal section through main hall

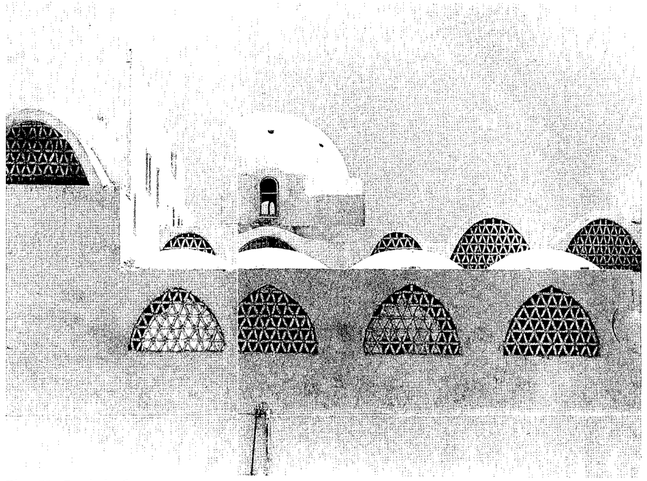


Plate 75 Facade detail

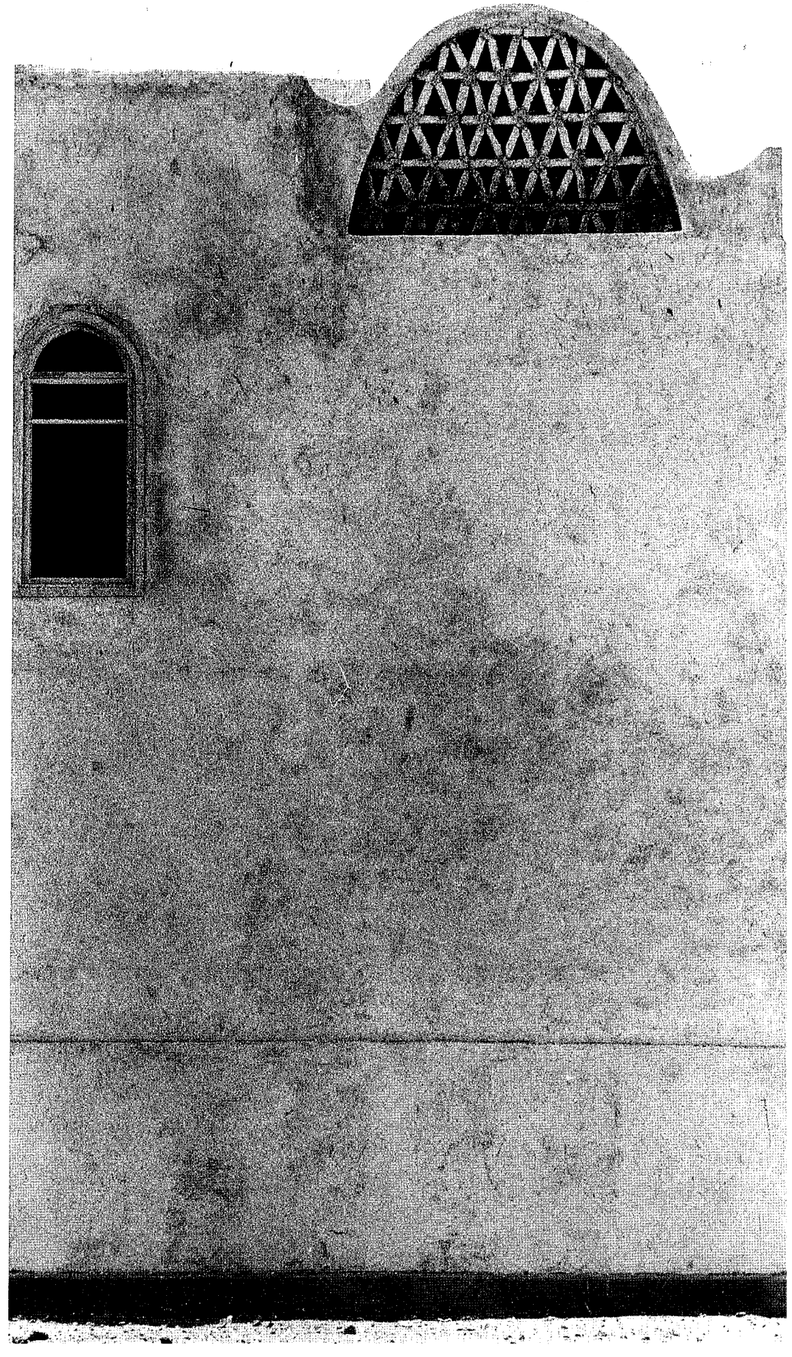


Plate 76 Corner detail

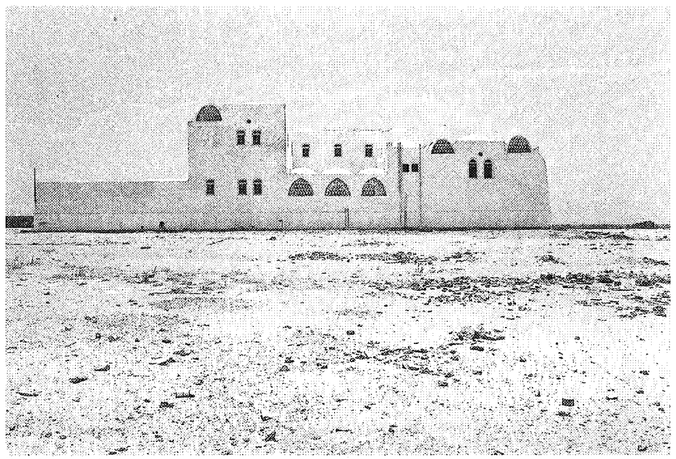


Plate 77 West facade

Plate 78 Massing at entrance

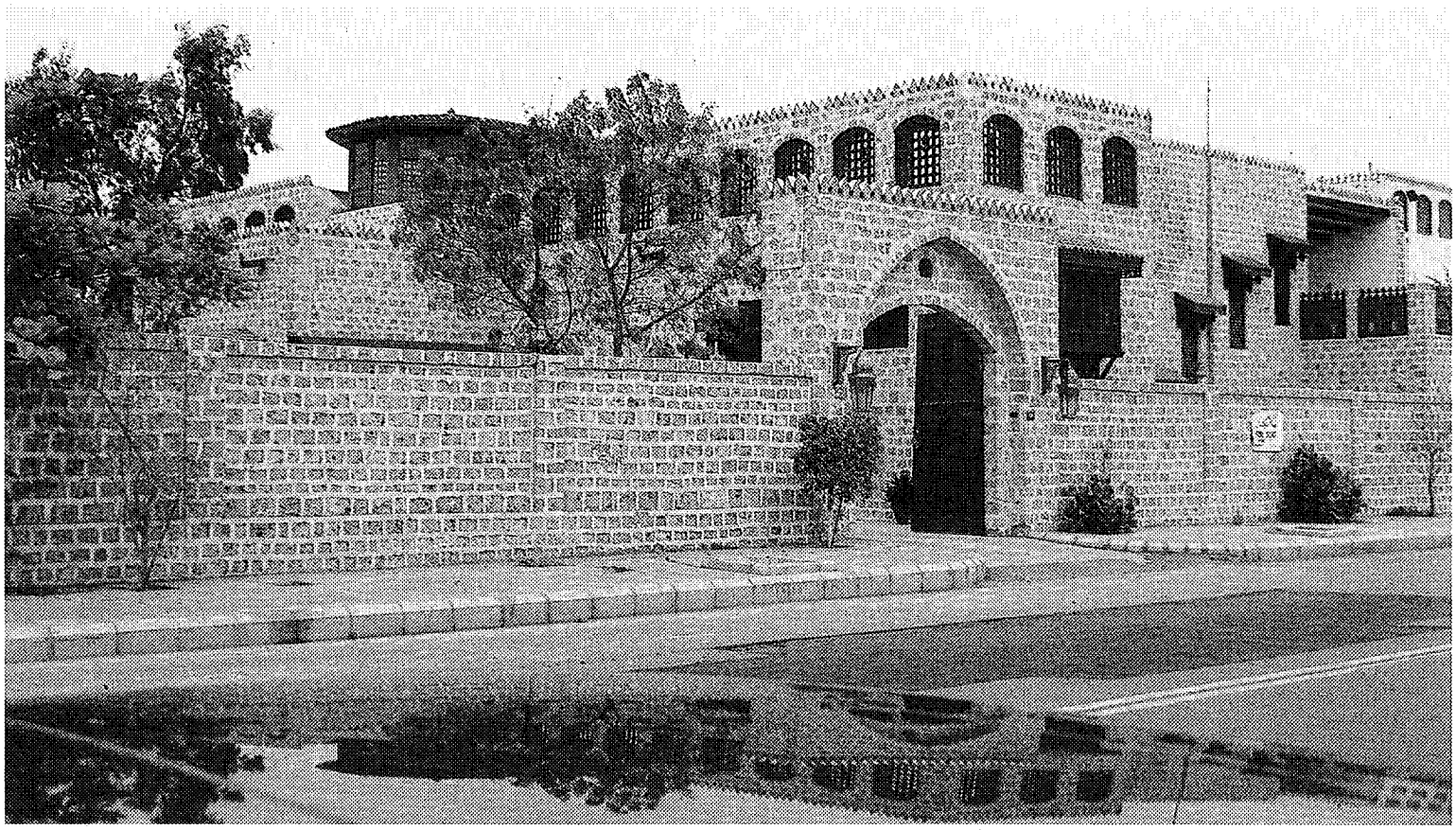


Plate 79 View of entrance

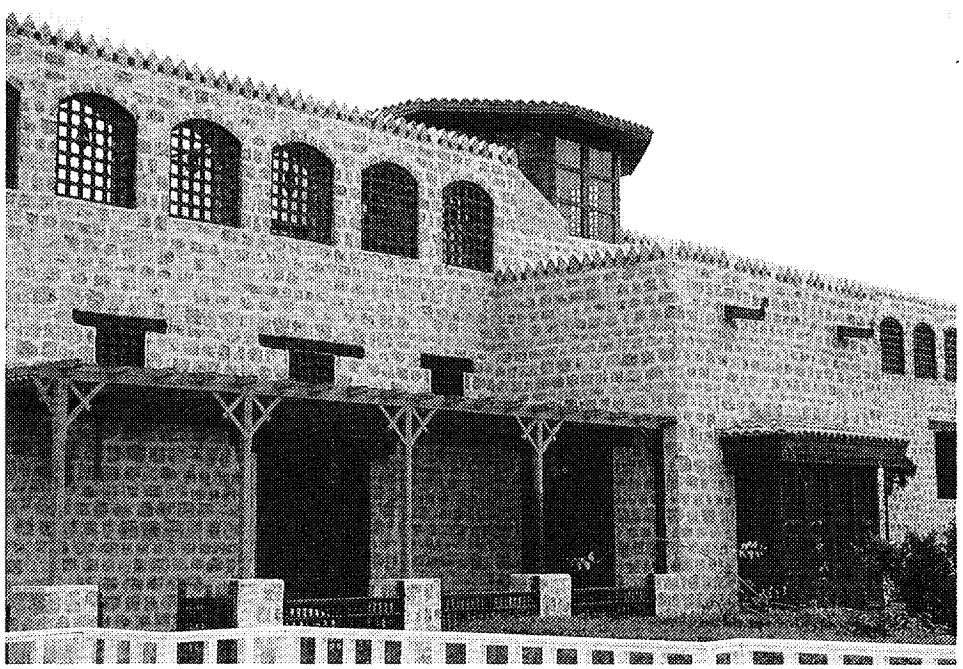


Plate 80 Massing from garden

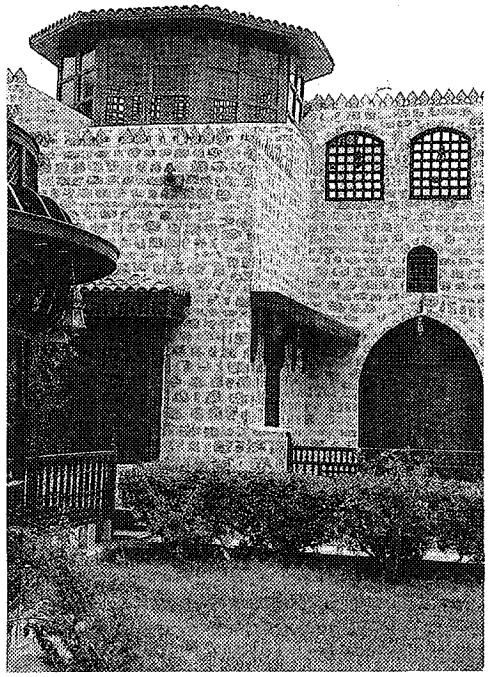


Plate 81 Entrance with open court on first floor

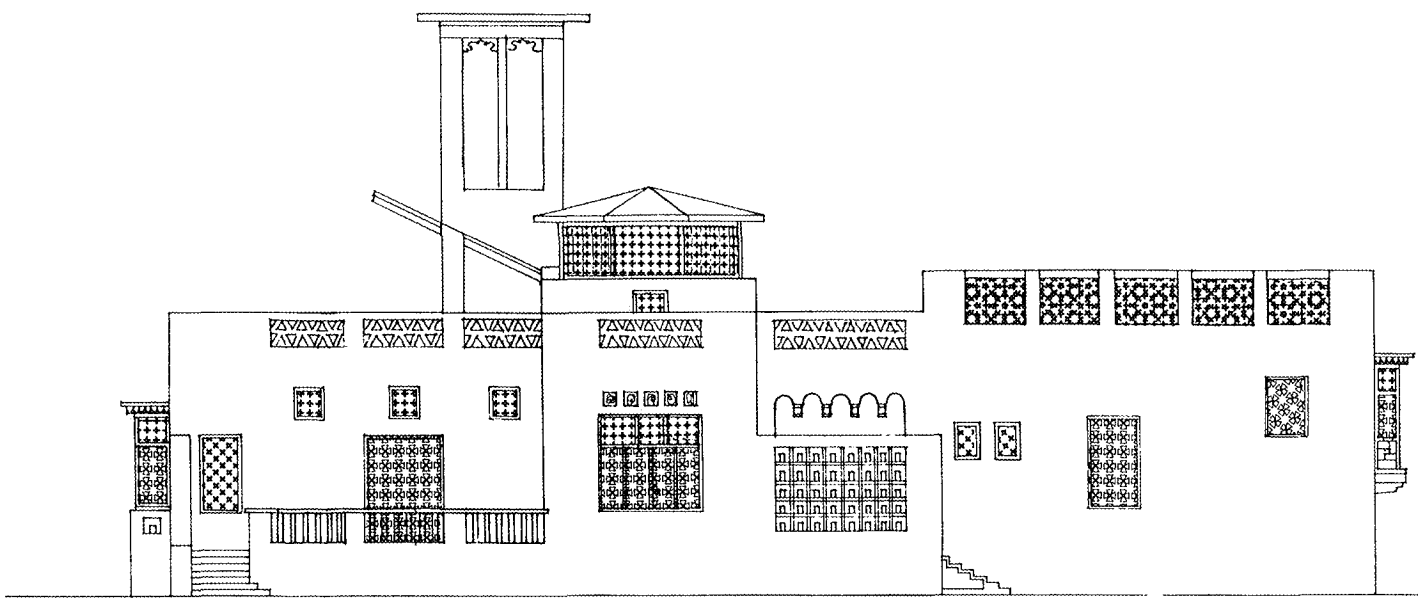
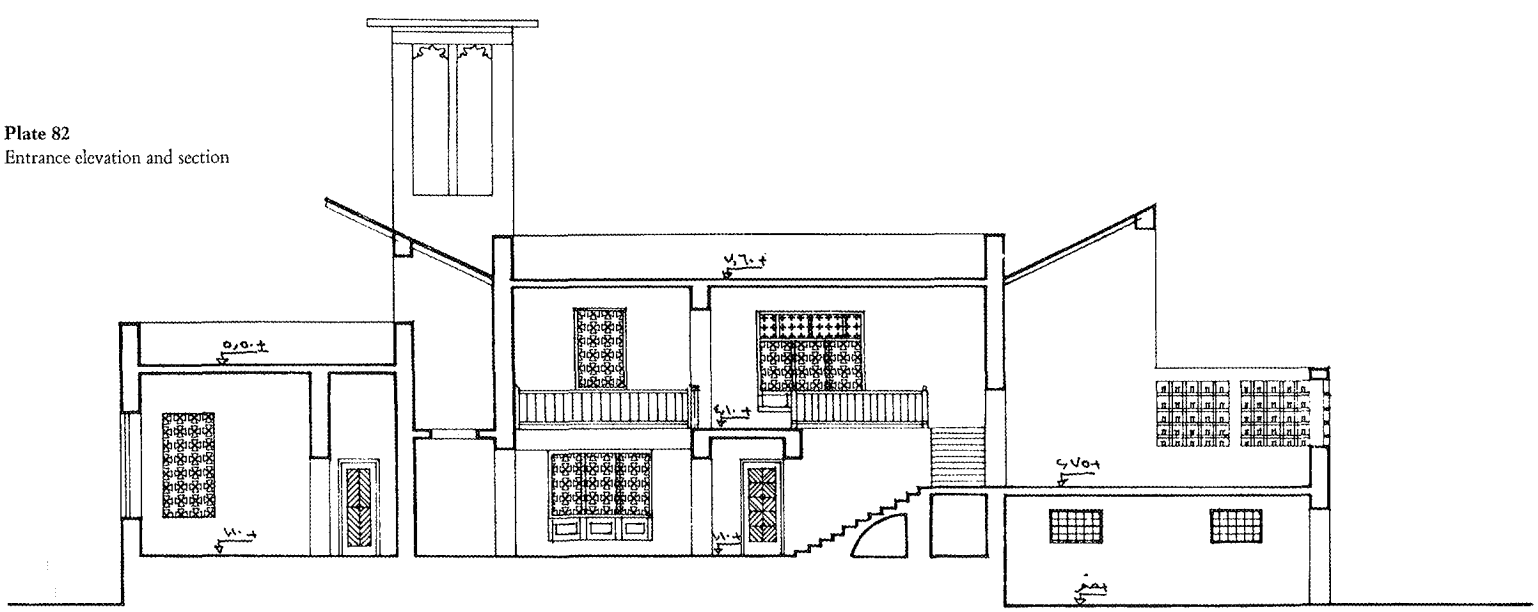


Plate 82
Entrance elevation and section



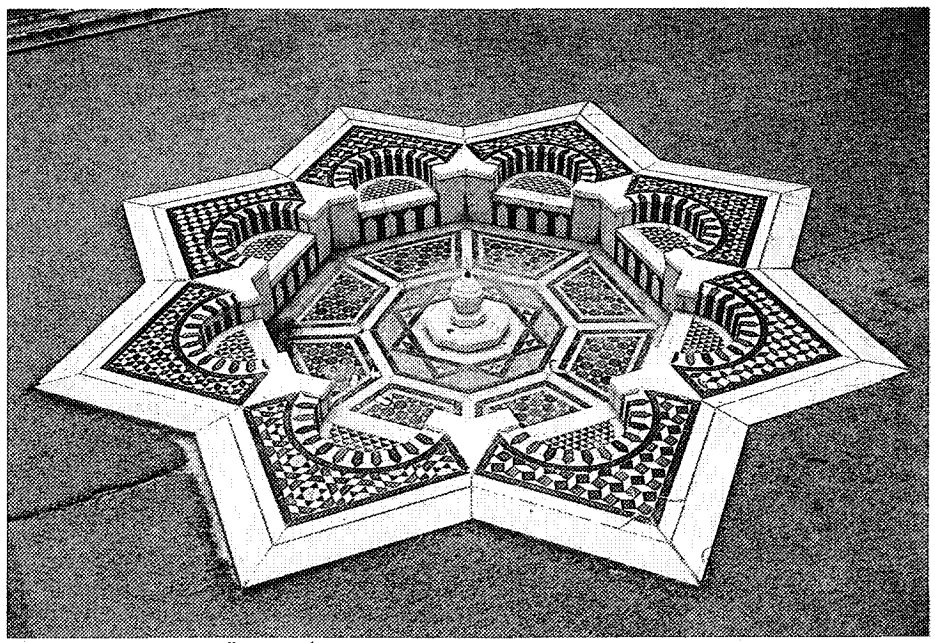


Plate 83 Fountain in a small courtyard

Plate 84 Library and passageway

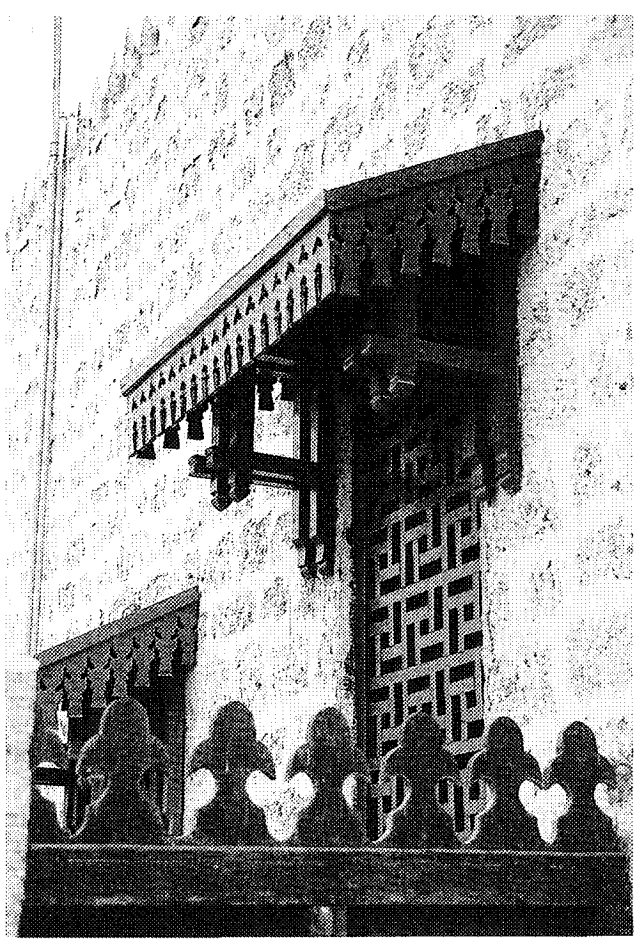


Plate 85 Typical window

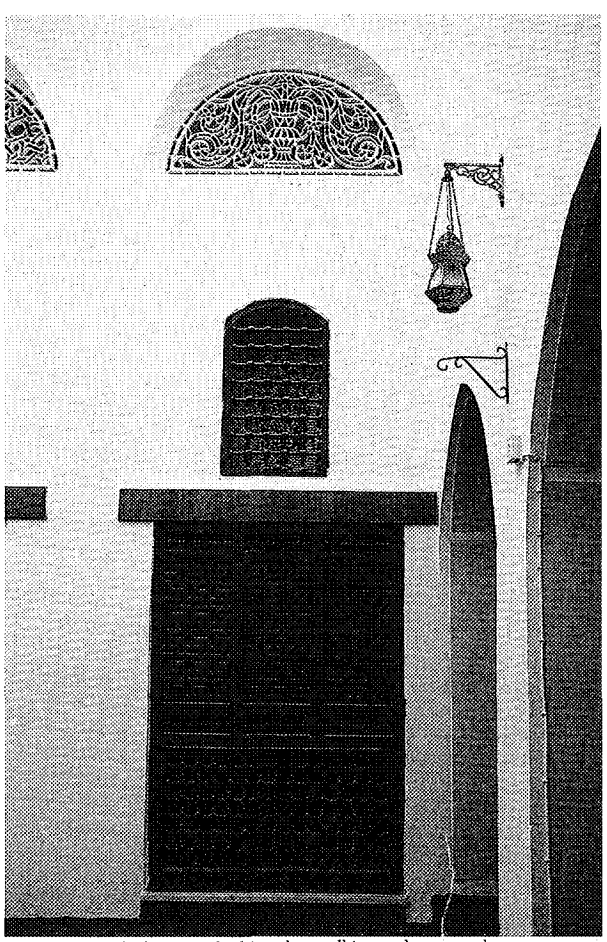


Plate 86 *Mashrabiyya* overlooking the small internal courtyard

Plate 87 Garden pavilion.