

The Development Workshop

Illustration ✓

MIMAR talks to four young architects committed to indigenous architectural development.

The Development Workshop is a research, architectural and planning group. The Workshop has undertaken projects in several developing countries including Iran, Oman, the Arab Emirates, Egypt, Niger, Indonesia, and has just begun work in Angola. Training builders and the preparation of teaching materials are also an important part of the group's functions, and it has held workshops in rural areas as well as in universities.

MIMAR: Perhaps we can begin by asking you to summarise your main concerns.

D.W.: Today, the Third World is involved in a major developmental endeavour at the core of which is the alleviation of poverty. It is important that architectural practice, or at least a part of it, finds a direct role for itself within this endeavour. Such a role implies certain shifts in emphasis on the nature of architecture and its method of operation. Perhaps the most fundamental shift would be to view architecture as primarily a vehicle for social change and only secondarily as an object of design and technology.

This shift in turn implies an emphasis on broader concerns such as the influence of the process of creation of architecture and the allocation and distribution of resources. We are concerned with the gainers and losers, and therefore inequity within the community, rather than focusing on the resulting architectural product. These concerns make it incumbent on us as architects to complement our designs and technical abilities with a sensitivity to, and a skill in functioning within, structures of socio-economic inequality and often exploitative relations. In particular, the architect needs to develop his knowledge of how apparently neutral design and technical choices can inhibit or promote greater equity within a community.

MIMAR: Does this mean that your main emphasis as architects is *not* space-making?

D.W.: Of course, even within a developmental context, conventional architectural concerns such as design, technology and form remain important for any architectural product that is to result. However, within a developmental context, the success of a building in conventional architectural terms as well depend on the other factors just mentioned. For example, knowledge of who would profit and who would lose from the decision to use one building material and not another will indicate who will resist and who will support that decision.

MIMAR: This developmental approach to architecture is a very wide field. Do you see limits to your activities?

D.W.: Yes; as an architectural practice concerned with equity, we naturally direct its

The Development Workshop was formed by four architects, all born in the latter half of the 1940's who came together after they had finished training at the Architectural Association School of Architecture in London, in 1972. The members of the Workshop undertake work either singly or as a group. The four members, coming from different backgrounds, are joined together by their commitment to architecture in development. Farokh Afshar is an Iranian architect who is presently in the middle of his doctorate at M.I.T. in the USA. Allan Cain, Canadian, until recently teaching in Ontario, has moved to



The Workshop members (front row, left to right): Mohammad Reza Dariaie, Allan Cain, John Norton and Farokh Afshar, seen with Selseleh builders.

“... a new type of ‘barefoot builder’ ... is required, specially trained to draw on and innovate with his tradition to meet the rapidly changing needs in his community”.

geographical area of operations to the habitats of the relatively poor areas of the world. We also concentrate on the older historical centres of cities, the squatter settlements, and particularly the rural settlements.

In our experience, professional intervention in such communities has been most useful when it has adopted several principles. Firstly, designing the intervention on a thorough understanding of the indigenous resources — human and natural, value systems, materials and technologies — prevalent in the community is important. Secondly, the aim of the intervention has to complement the strengths of the indigenous resources to overcome the identified shortcomings within them. The ultimate objective being to enhance the capacity of the community to deal with its own problems.

MIMAR: But isn't this external influence within communities a continuation of the dependance mode?

Angola to start work. Mohammad Reza Dariaie, another Iranian stayed in Tehran to wrap up work there, is now in Angola. John Norton from England, taught at his old school in London and after learning Portuguese has joined the other three.

This interview has been put together by Hasan-Uddin Khan and Brian Taylor through conversations and correspondence with the group members over the past few months. Even though the answers have been collected from different group members they represent the Workshop's thinking as a whole.

D.W.: To some extent what you say is correct. Exogenous assistance serves best as a temporary catalyst and exogenous methods are best introduced when there is a clear indication that indigenous processes cannot suffice. Consequently, those exogenous methods that can be rapidly “internalised”, that is, adapted into and generated henceforth from within, are most valuable. To achieve this we find it necessary to work closely with the community, particularly those involved in the process of making the built environment — the builders, craftsmen and artisans. Such persons are often the best sources of knowledge regarding indigenous resources, the most valuable co-workers in assessing and improving these resources, and finally the most effective channels through which innovation can be introduced and become self-sustaining within a community.

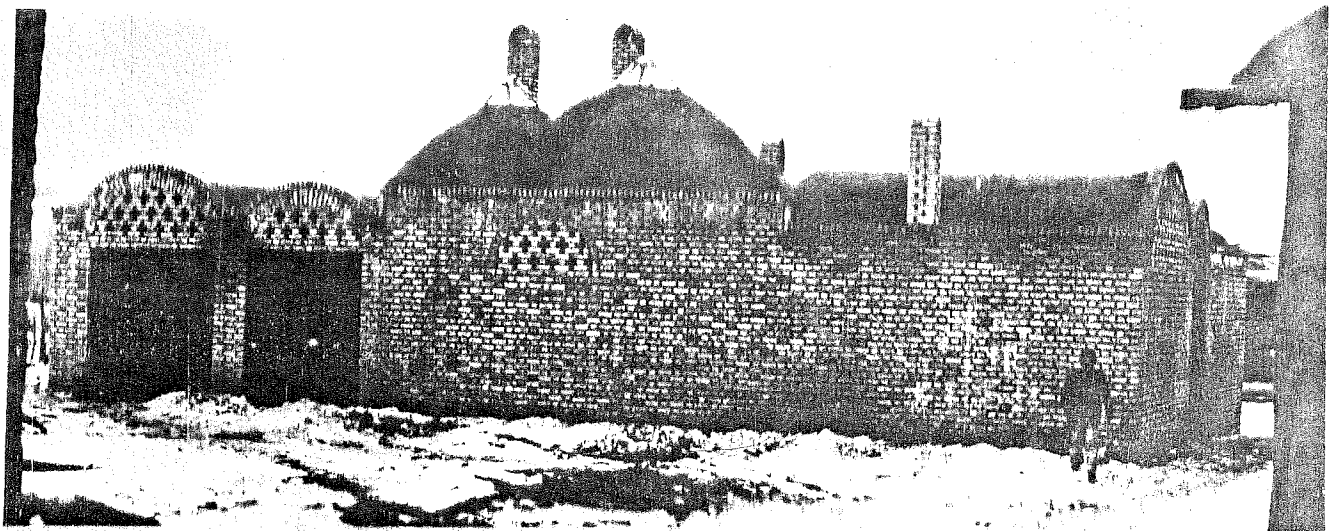
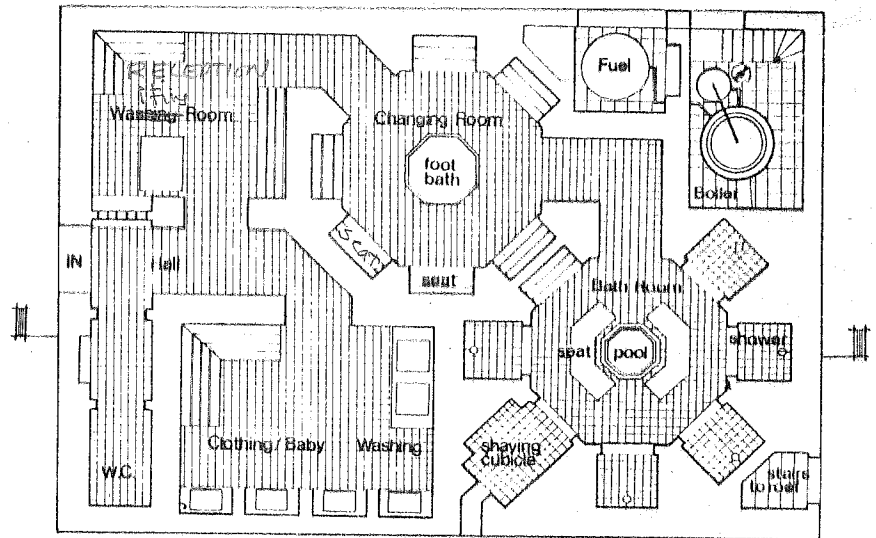
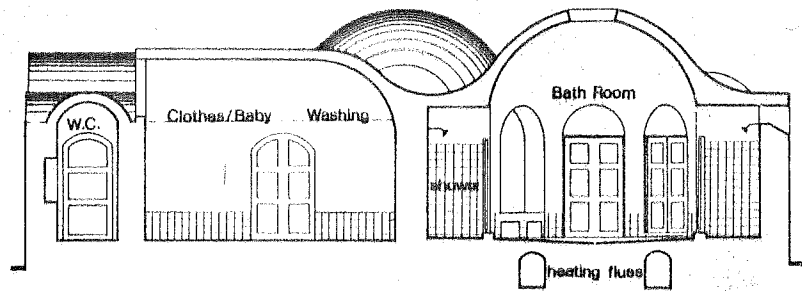
MIMAR: You appear to be redefining architectural professionalism in the Third World. Do you think that you are being realistic?

D.W.: Yes, to answer the latter part of your question, we have shown that this approach can work in practice. It is all a matter of the stand one takes. We believe that appropriate solutions to human settlements can be developed from indigenous methods which have evolved from and remain in the hands of Third World countries.

And to get to the first part of your question: yes, we think that a new type of architectural professional is required. A professional who is deliberately trained to practice in developmental contexts which make quite different demands from those a conventional architect is trained to deal with.

Similarly, at the community level, be it squatter settlement or village, a new type of local “barefoot builder” perhaps is required, specially trained to draw on and innovate with his tradition to meet the rapidly changing needs in his community. An architectural practice, yet unformulated, is required to bring the two together in a creative and fruitful manner that will be directly relevant to the very real and pressing needs of the poor, who remain the majority in our world today.

Community Baths The Public Bath (Hamaam)



the local builders who were trained during construction.

Top: Floor plan and section of Niuzabad Hamaam. Above: The domes cover the changing and bathing rooms.

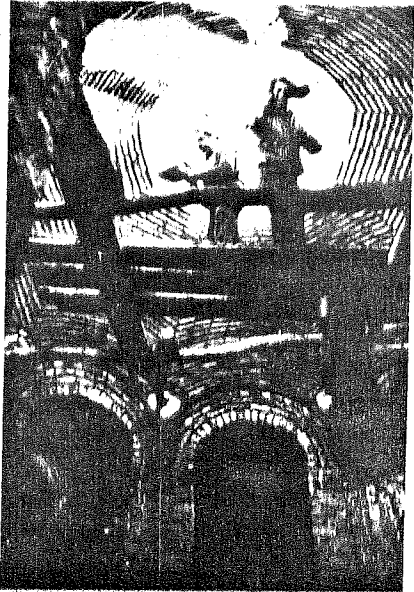
construction.

From the experience of constructing the first hamaam and further discussions with the villagers and builders, a set of 2, 4 and 6-shower prototype hamaams was designed to respond to the variations in village size across the district. Only vaults were used in these second-generation hamaams, because

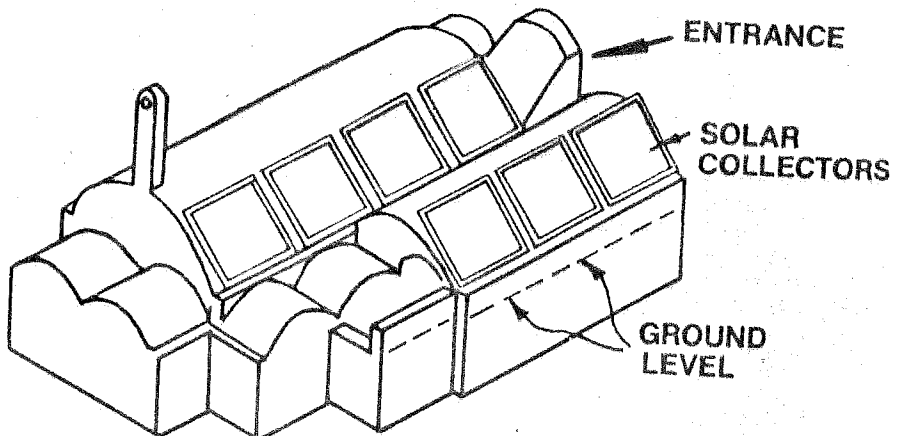
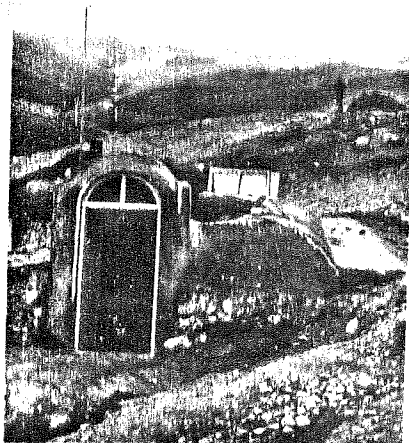
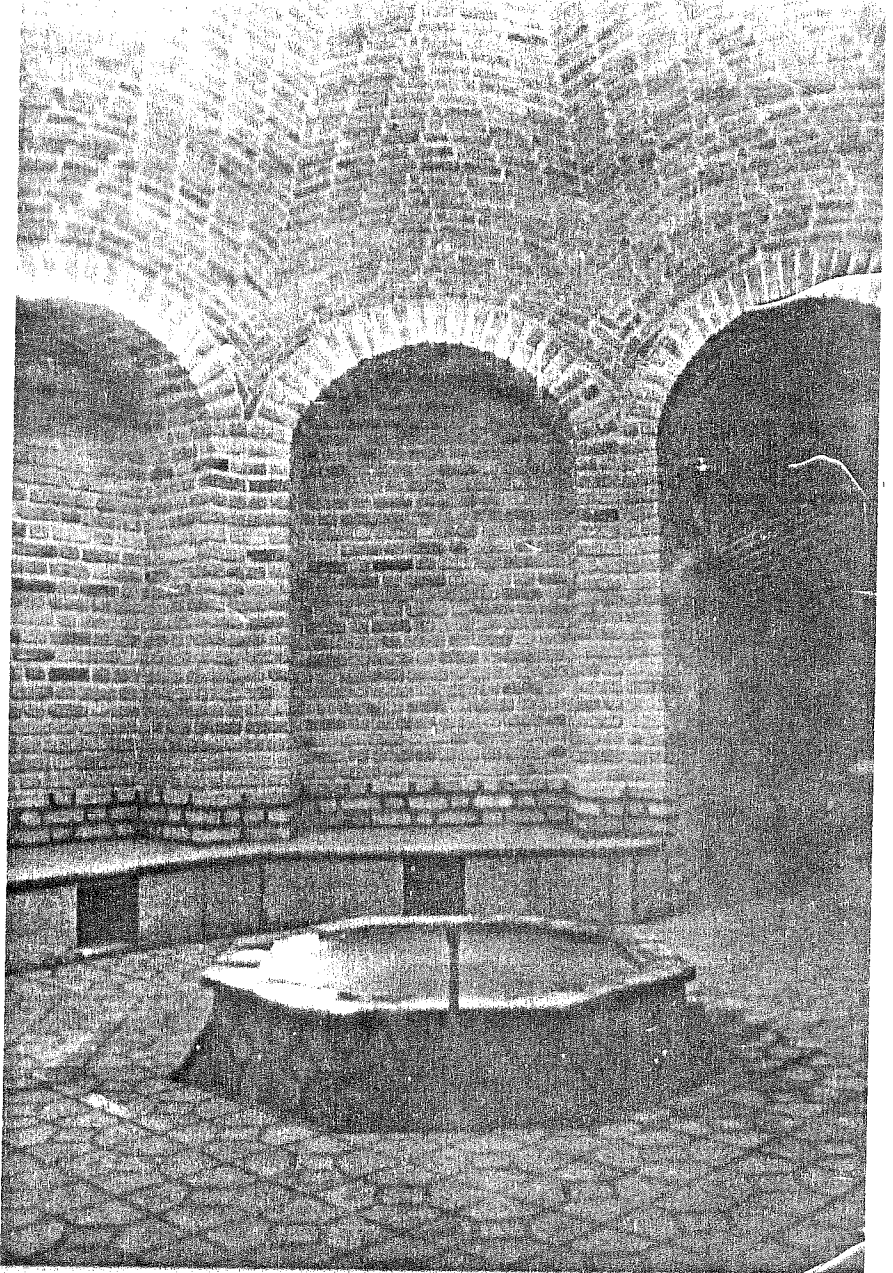
they were simpler to construct than domes, and the buildings were partially sunk underground, as is traditional, to improve thermal insulation. More emphasis was also placed on improving and integrating the village water supply system with the hamaam. In some cases this consisted of constructing an enclosure for the village spring, extending a pipeline to a reservoir in the village from which water was drawn to communal taps as well as the hamaam. The spring enclosure protected it from pollution

by animals. It was designed so that water could be simultaneously drawn for irrigation. Since the spring was often a kilometre or more from the village, the extension of clean water from it right into the settlement improved health conditions as well as saved the women a laborious trek fetching water daily. With each *hamaam* built, more local builders were trained and the construction programme was thus progressively accelerated.

The projects were completed at half the cost of equivalent government constructed *hamaams*. The costs included the estimated value of the voluntary labour. These savings accrued despite the fact that village participation and builders' training caused inevitable construction delays.



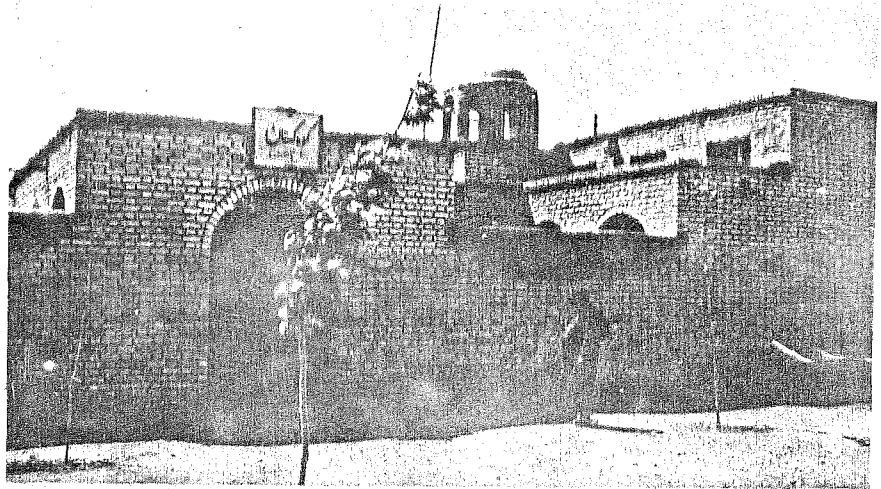
Above: Building the dome over the changing room.
 Right: Changing room with foot washing pool.
 Below: Only the entrance and the profile of the vaulted roof are visible above ground.
 Below, right: Isometric of expanded public bath with solar collectors.
 Opposite: Typical four shower *Hamaam*.



The Alashtar School

The emergence of new technical and design demands do not automatically invalidate indigenous methods of construction. As often as not, the creative application of indigenous methods can solve new problems.

For this school, the government required 7 metre free span classrooms, which indicated that steel "I" beams be used instead of the traditional timber beams which cannot span more than 4 metres. How to avoid using steel was the problem posed to the builders. They suggested a simple but ingenious solution which combined two traditional technologies: a brick arch was constructed across the centre of the room on which would rest the timber beams spanning from each end wall.

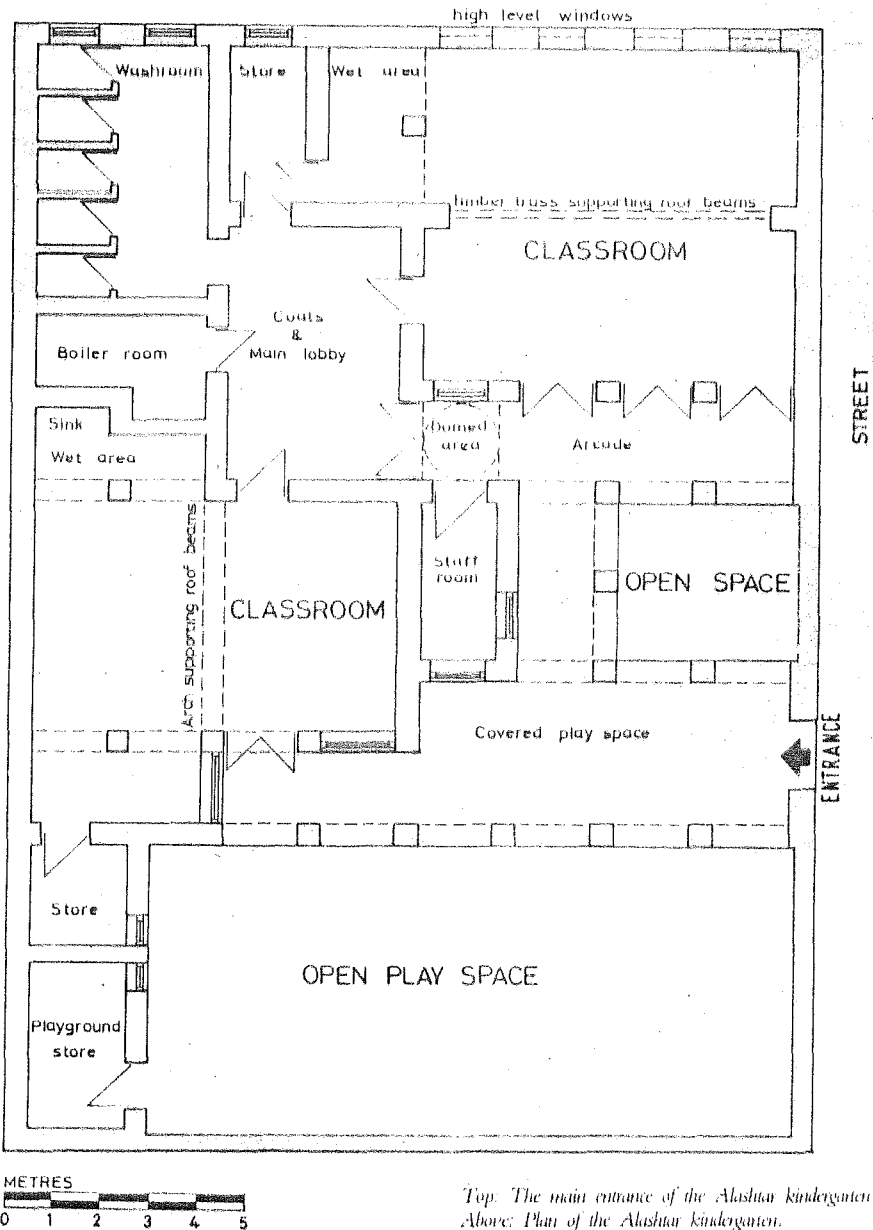


"...Perhaps architects can play a new role in the development of the Third World. It requires learning additional skills and developing new sensitivities. It is a role that increases greatly the variables to be dealt with. Consequently, chances for error are also increased. But the challenge is well worth the risk."

The Kiln

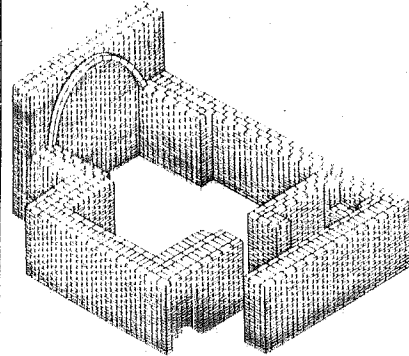
A range of efforts to improve local building materials were undertaken, including improving the treatment of roofing timber, mudbrick production, and fired brick and lime kilns.

The experience of the kilns is instructive. The first kiln was begun in a village where land and water was donated by a village headman. The kiln was to become cooperatively owned by those who had worked on it, once it began to yield a financial return. The headman's son manoeuvred himself into a supervisory situation with the stated purpose that the kiln would devolve to him. He was sacked. The headman withdrew all water rights and all further cooperation. The next kiln in another village was constructed on public land, insuring independent access to water, and was more successful.

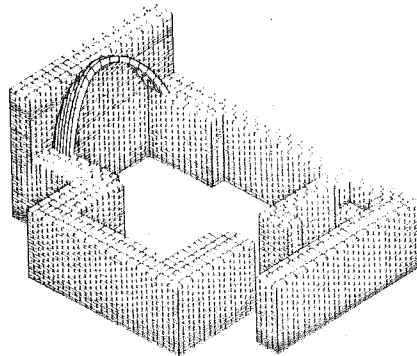


Top: The main entrance of the Alashtar kindergarten.
Above: Plan of the Alashtar kindergarten.

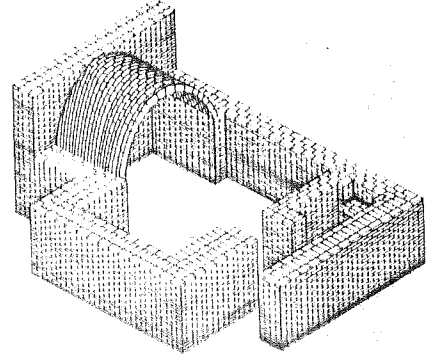
Mud-Brick Vaults



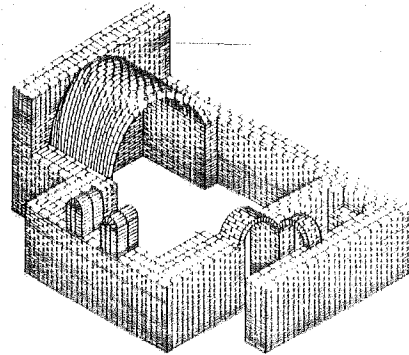
Walls built up to the level of the spring points of the vaults. End wall built up for vault to lean on. Inverted catenary form traced on end wall.



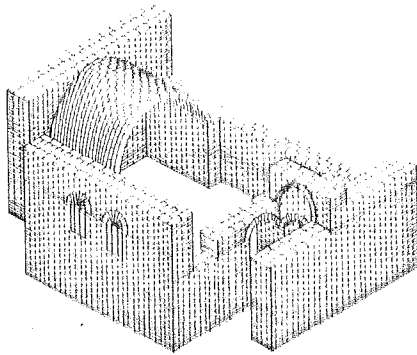
Vault building with courses leaning towards end wall so that no form work or shuttering is needed.



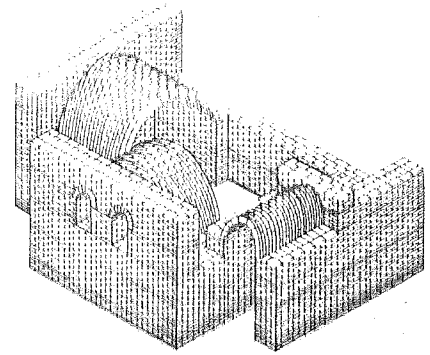
Vault is completed; each course of bricks is less inclined, until vault is flush with side walls.



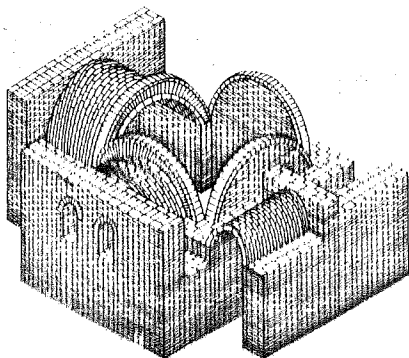
Window openings built up with dry bricks — no mortar.



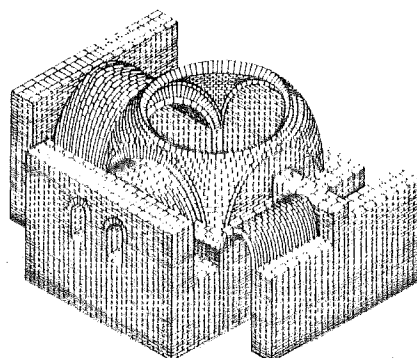
Walls built up. Arches built over dry brick in windows.



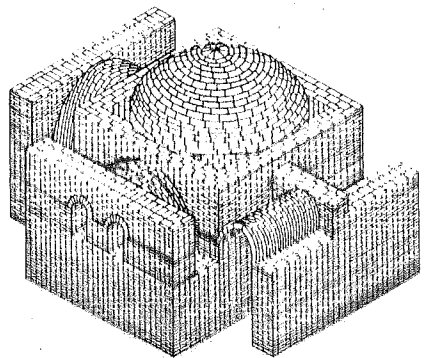
Small vault built in same way as large ones. Loose bricks removed from window openings.



Circular arches built over vaults to form a base for the dome.



Pendentives completed, forming continuous course from which dome can be completed.



Brick courses of dome incline increasingly until dome is finished.

Sometimes a small, technical innovation or re-application of a once widely used traditional technique is all that is necessary to overcome what otherwise appears to be a major weakness in an indigenous method. Mudbrick vault construction is probably the simplest, cheapest and most widely applicable domestic construction method available. Mud, straw and water are all that are required to complete the house, since not

even timber shuttering is necessary to span the vault. Mudbrick, vaulted housing has, however, been faulted for its weakness against moisture and earthquakes. Mixing as little as 2 to 5 percent of bitumin in the mud-mix greatly improves its moisture resistance. Imbedding a timber-frame tie along the corners (a once-traditional practice) strengthens the house against earth tremors. This prototype low-cost house

Sequential series of drawings illustrating the process of construction of an experimental housing unit built in Upper Egypt. It employs a traditional Nubian mud-brick vault and dome roofing system. Note that no wooden formwork is required.

using the bitumin can withstand very severe winters.