# Even the Moon Has a Dark Side: A Critical Look at Vernacular Architecture

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## INTRODUCTION

Views of it has changed over time, but in the last three decades vernacular architecture has enjoyed an exalted position with many architects (Aysan & Teymur 1990). Most writings on vernacular architecture tend to extol on its splendid nature. Vernacular architecture has been presented as a beautiful example of what anonymous people, left to their own devices without the interference of architects, can do (Moholy-Nagy 1957; Rudofsky 1964) and what "unselfconscious" architecture can be (Alexander 1964). Many architects claim that vernacular architecture inspired them in their work. Faculty in schools of architecture have presented vernacular architecture as emulation worthy exemplars and models (Highlands 1990), and have encouraged its study and use as a source of inspiration. If not in its entirety, certainly in its component parts, vernacular architecture has become for architects an ideal type, a holy grail that modem architectural students are challenged to draw inspiration from. As one of my professors once queried of us third year architecture students on a field trip to sites of architectural importance: "Those people built these buildings hundreds of years ago, and you today, cannot even draw them?" Vernacular architecture has become almost mythical. This is a magnificent and romantic picture of vernacular architecture. There is the implication that there are no problems with vernacular architecture or use of elements and ideas from it.

I too believe that vernacular architecture provides scintillating examples and lessons, and has much to offer. But, even the moon has a dark side. The view of vernacular architecture presented above is at best partial, superficial and incomplete and perhaps biased as it does not point out any difficulties and issues. Yet, there are documented problems with vernacular architecture. It is important for architects to consider these and have a more balanced view of vernacular architecture. Knowledge of the problems is essential so that architects can make educated decisions about the nature and impact of a source of their ideas and inspiration. As Oliver points out:

"We may nurture romantic notions about the technological qualities, even the superiority, of vemacular architecture but we shall learn little, and do little useful service to the advancement of building, if we are not also aware of its weaknesses, even its failures." (Oliver:1990:153)

In this article, I present a critical look at vernacular architecture. I describe a typology of views of vernacular architecture, point out some commonly overlooked features, and conclude with some additional concerns related to unconsidered use of vernacular architectural elements. In doing so I shall call on my research, particularly on my studies of vernacular architecture in Iran and India, as well as on other examples. Vernacular architecture needs to be seen more wholistically and in depth. I do this in the hope that this will lead to a deeper and balanced understanding and more educated use of vernacular architecture. My intention is to balance the picture, not to show vernacular architecture as not worthy of attention or study.

## VIEWS OF VERNACULAR ARCHITECTURE

Architects's views of vemacular architecture have changed over time. Writings on vernacular architecture can be categorized based on the view of vernacular architecture assumed. There have been attempts to categorize the analysis of vernacular architecture. For example, Upton (1983) identifies four "avenues of inquiry" as object-oriented, socially-oriented, culturally-oriented, and symbolically-oriented. To this Bourdier and AlSayyad (1989:7) add "design-oriented. Rapoport (1989:79) develops categories with a slightly different focus of "the rationale for studying traditional environments". He says:

"One may ignore traditional environments; one may acknowledge their existence but deny that they have any value, interest, or lessons; or one may romanticize them and try to copy them. I argue that the only valid approach is to analyze them in terms of concepts, and derive lessons which are applicable to research, theory-building or design."

Works on vernacular architecture can be categorized into four kinds based on the view of vernacular architecture they adopt. These are described below.

The despising view

Aysan and Teymur (1990) point out that it in the early years of the profession the prevailing view was one of shunning. Architects wanted to distinguish-themselves and their work from those who built without appropriate education and degrees. They claimed to be able to design in ways that were longer lasting and better than the traditional builders, and that the people wanted their buildings to be different and innovative. These writers viewed vernacular architecture as simple, primitive, underdeveloped, and therefore to be despised and ignored.

This view was assisted by some explorers, travellers and anthropologists, mostly Europeans, who depicted vernacular architecture in other nations as "barbaric", "inferior", "ugly" and "ill" (Aysan & Teymur 1990:308; Oliver 1971; Head 1986), "non-literate", "pre-literate", "unsophisticated" (Oliver 1989:53).

Practicing architects too, did not see much in vernacular architecture as worthy of emulation or inspiration. The attitude was that vernacular designs were not very good, and that architects could use their training, ideas, creativity and systematically derived knowledge to design better buildings. In many instances, vernacular architecture was seen as a lower bench mark which the modern designs could easily improve on by a significant margin.

The admiring view

Later, the view of vernacular architecture changed to admiration and extolling. This view, Aysan and Teymur (1990) claim, began with the works of Rudofsky (1964) and Alexander (1964) and has, for the last several decades, been the prevailing view. In addition to these there have been many writings about the wonderful nature, virtues and achievements of vernacular architecture. It has been admired for creative use of locally available materials, ingenious structural design, innovative but simple technology, novel construction techniques, intelligent problem solving, wonderful design, captivating beauty of form, and fit with surroundings(Moholy-Nagy, 1957; Beazeley 1977; Bahadori 1978, Tavassoli 1983, etc.). Writers have also focused on design elements, such as design solutions, use of materials, and so on (see for example Ranier 1977; Knapp 1989; Blier 1987; Denyer 1978; Ota 1972; Swithenbank 1969; McHenry 1983; to name only a few).

In this category too, are writings that have tried to demonstrate the superb capabilities of vernacular elements based on tests or analyses along a variety of considerations. For example, studies were conducted of the effectiveness of passive cooling devices, shading devices, climate control, etc. (examples are Bahadori 1978, Beazeley 1977). There are of course writings that extol on the capabilities of vernacular architecture based on experiential information while some do this without the benefit of systematic tests (Beazeley 1966).

Practicing architects too have, as mentioned earlier, taken the admiring view. Many architects have seen vernacular architecture as the source of their inspiration and have drawn ideas from it. The impact of this is increased because many master and other famous architects, who themselves are seen as examples and mentors, are seen to belong to this category (examples are Frank Lloyd Wright, Le Corbusier, Louis I. Kahn, Charles Moore, Robert Venturi, Hassan Fathy, Charles Correa, to name only a few). To be sure, architects have been selective in the ideas or elements they borrowed, but not much is known about why they selected those over others. Hence, this is not a claim that architects have taken elements from vernacular architecture without exercising any choice or being completely uncritical.

The indifferent view

A third set of writings seem not much concerned about whether vernacular architecture was despicable or admirable. They were not as concerned with how well vernacular architecture was designed or functioned. Rather, the interest in this set of writings was with what vernacular architecture could teach about a variety of questions of interest to the researcher. They have seen vernacular architecture as a vehicle, as an artifact, a record of a civilization or people which could be used for understanding something else. There have been many works on vernacular architecture from fields ancillary to architecture, such as folklore studies, archaeology, geography, and history that have taken this approach.

Some have seen vernacular architecture as text that informs us about the lives of the common folk (Glassie 1990). For example, Glassie (1986:395-396) says:

"Some scholars --they may be historians, archaeologists, cultural geographers, anthropologists, or folklorists-- have begun to appreciate the artifact as a powerful source of information. They view objects as books that, no matter how pretty the bindings, are worthless until read."

Another set among these, was interested in the historical development of vernacular architecture, such as when a particular feature was introduced. Although a few of these writings describe design, much like architectural history, their primary focus has been in the development of epochs, of ideas, as a way to understand people and the relations with other people. Geographers, for example, have devoted attention to the of the spread or diffusion of certain ideas and artifacts as well changes in them (see for eg. Kniffen (1986).

These writers have been only secondarily interested in the design and building aspects of vernacular architecture (examples are Upton & Vlach 1986; Wells 1986; Carter & Herman 1989; etc.). For these writers, vernacular architec-

ture was useful primarily to the extent that it was able to inform them about the civilization, about folklore and folk lifestyle, and about societal beliefs about the universe. For example, Glassie says:

> "A building may enhance the landscape, but it remains a heap of old wood and stone until it is analyzed. The analysis leads away from a concern with the fabric itself toward the ideas that were the cause of the fabric's existence." (Glassie 1986:396).

This is quite a different view from seeing it as an inspiration.

Largely, these writings have not provided a critical look at vernacular architecture.

## The Critical View

Of course, not all recent writings on vernacular architecture are positive, some are indifferent (as described above), and a few are critical.

Recently, several authors have attempted to put vernacular architecture in perspective. Rapoport (1990) has seen all architecture on a continuum with four points marked by primitive architecture at one end, then vernacular architecture, followed by popular architecture, and finally high style architecture at the other end. In his classification, and by his set of criteria, vernacular architecture is not at the apex. Stea (1990) describes ten myths that lead to mistaken ideas about vernacular architecture. Oliver (1990) points out several problems with vernacular know-how, use of materials, and technology. Others, such as Oliver (1990) and Highlands (1990), claim that some notions about vernacular architecture, that it was "unselfconscious" (Alexander 1964) or that it was built without specialist help (Rudofsky 1964), may have been incorrect. Yet, the romantic view has prevailed.

## THREE COMMONLY OVERLOOKED FEATURES OF VERNACULAR ARCHITECTURE

There are still other issues, problems and cautions associated with vernacular architecture which are commonly overlooked. Below I describe three commonly overlooked features, symbolism and meaning, context, and culture.

### Symbolism and Meaning

Several writers have argued that architecture is symbolic and carries meaning (see for example Rapoport 1982; Mazumdar 1986). There have also been writings about the symbolism attached to modern designs. Vernacular architecture too, has received a fair amount of attention from the symbolic perspective. Anthropologists in particular have seen architecture as being symbolic, to the extent that architecture is of interest to them primarily if it can be seen as symbolic of society and its beliefs (see for example Cunningham 1972; Bourdieu 1973, Tambiah 1973). Architects too, have seen architecture as symbolic. But other than writings by architects about what their designs symbolize, this literature is not large.

The way I am addressing symbolism and meaning, especially with regard to vernacular architecture and use of vernacular elements and ideas is different from seeing vernacular architecture as symbolic of some aspect of society or even builders seeing the building as symbolic of their vision of the world or parts of it. Many vernacular architectural elements are symbolic. They are symbolic in the sense that the symbolic elements contain or convey a message or messages. For example Knapp (1989:2) says:

> "Chinese rural houses not only communicate these folk beliefs but also express the conjoined cosmological and technical practices of China's imperial tradition seen in palaces, temples, and even grave sites."

Symbolism can be intended in the use of the element. Let us call this denotative symbol. An example of a denotative symbol is the use of markers to indicate ownership. The houses of Zoroastrians in Iran were required to have some symbols on the front door. These markers constituted denotative symbols as they were expressly designed to point out the houses where Zoroastrians lived.

Messages can be read into architectural elements and their use or non-use. These can be called connotative symbols. In Iran, Zoroastrians houses were required to be low in height. There was some variation in the regulation or in the interpretation so that in some places the height was to be lower than the houses of Muslims, in some areas the height was to be determined by a Muslim on horseback, and in some areas Zoroastrian houses could not higher than the tip of an outstretched hand of a Muslim (English 1966, Mazumdar & Mazumdar 1984). There was functional reason for this: it was to prevent non-Muslims to overlook into the houses of Muslims (Mazumdar & Mazumdar 1994). To Iranians, the low heights of the houses connoted the ownership of the house as well as the status of the owner. In addition, use of special and peculiar elements, such as single-leaf doors, or non-use of elements, such as lack of double-leaf doors, can and were used as symbols by the local people to connote the ownership, social status and other characteristics of the owners.

Vernacular architectural elements can also carry meanings for members of a culture. The features of Zoroastrian houses described above had intense negative meanings for the Zoroastrians. The low heights not only connoted to Iranians that the house occupants were Zoroastrian, to Zoroastrians it was a constant reminder that they could not build higher houses. The heights and other features of Zoroastrian houses were almost daily reminders of their low status and condition, which they were powerless to change. These elements thus carried deep meaning, which in this instance were intensely negative. While the meanings described above were negative, it is important to note that meaning can also be positive.

Desecration or destruction of architectural elements that carry strong positive meanings can lead to mourning the loss of that element. It may lead to actions, such as reconstruc-

tion, development of plans and strategies to prevent further or future desecration and destruction. It may also lead to more vigilant guarding of those elements, seeking of retribution and even retaliation. Similarly, destruction, abolition, or non use of elements which have negative meanings may lead to pleasure. For example, lifting of regulations regarding building heights, doors, and use of badgirs (windcatchers), which Zoroastrians were disallowed from using, were seen positively by the Zoroastrians. Also, the use of ideas and elements from Sassanian times was seen positively by Zoroastrians. On the other hand, use of elements having positive meanings in ways that are seen as inappropriate, demeaning, destructive or lacking respect can lead to feelings of hurt, disappointment, displeasure, and anger. These may lead to refusal to accept or use those elements in those ways, and to actions to change the use of those elements. For example, the swastika (a cross with the ends turned at right angle to the left, like a Z) is an auspicious symbol to Hindus and has been used for centuries to signify well being and good luck on special occasions. (It was also an auspicious symbol of longevity used on vernacular buildings in China {see Knapp 1989:156, Figs. 5.26, 5.27)). This auspicious Hindu symbol was used by an American university as part of its logo and had been in use for many decades. A different reversed (a cross with ends turned at right angle to the right, like an S) and rotated (at 45 degrees to the vertical) version of the swastika, black on white background with an eagle atop, was used as an emblem by the German National Socialist (NAZI) Party as their symbol (Shepherd 1971:334-335; Biedermann 1972:409; Whittick 1971:308, 326-329). For Jews, particularly holocaust survivors, this graphic became a memorial and mnemonic for bad memories symbolizing the atrocities and persecution they had faced. A few years ago, this university decided to discontinue the use of this sign in its logo (even though the symbol they had used was the original Hindu swastika which still means good luck to Hindus). For this university then, a symbol had changed meaning from positive to negative.

Some of these features and meanings may not be immediately obvious when one looks superficially at vernacular architecture. An element that seems to be rather innocuous to an architect who is not well versed on the symbolism and meanings of the vernacular elements, may carry deep meanings to culture members. For example, Le Corbusier's use of the rainwater spouts and glorifying and celebrating these as a major and central feature in important architecture of the state capitol was seen by many locals as awkward. Many were surprised that a common and simple element as a rainwater spout could be given so much importance (see also Sarin). Rains were not particularly heavy or common in Chandigarh and neither were his buildings made like the local vernacular architecture, out of easily destructible water-soluble mud. So the elevation of relatively unimportant feature in this manner defied logic for some local people. Use of a vernacular element may symbolize giving credence to, legitimizing, or valuing it when that society considers that

element of lower order, common, crass or ugly.

Similarly, use of elements from the past may be bothersome as it may be seen as stagnancy and even regression by many local people who attempt to improve their lot by making a move to toward more modem materials and the forms they make possible, such as multi-storied towers, huge unobstructed spans, large glass windows, plastics, metals. At times symbols are used to indicate progress and modernity. For example, in Lucknow, India, one house had an airplane made of concrete on its roof, perhaps as a sign of progress and modernity. The house across the street had a rocket built into the front of it. This indicates a certain "conversation" through the use of architecture as a symbolic communication medium. Some feel that new kinds of uses deserve new forms, materials, elements and so on.

## Context

Context is used here to mean the background conditions, circumstances or situations with respect to the environment, people and other creatures and things. The designs, forms, and elements used in vernacular architecture are set in a surrounding context. It is important to understand this context so that we are able to obtain a better understanding of vernacular and of the effects of using vernacular elements.

From an analytical perspective, context provides the background information necessary to understand the relevance and effectiveness of a solution. Specific designs can be seen as attempts at resolving some "problems" related to the context. The context and parameters for similar "problems" can differ in detail and thus change the nature of the "problem". This should help us understand vernacular elements. An example of an environmental context is climate. As is well known, hot humid climate can pose quite a different design "problem" than a hot dry climate; and the solutions can be quite different.

Parameters may also be affected by factors that seem minor to those not involved. For example, two areas classified as hot dry may have different climatic conditions. One may get slight breezes and another may not, this may lead to different design problems and different design features. Further, the breeze may be from one direction in one instance while for another it may blow from different directions. Presence or absence of sand and dust in the breeze may change the nature of the design problems. To this may be added the presence or absence of flying insects, mosquitos and even micro-organisms. A design solution for one set of contextual problems may not be appropriate when one or more of these contextual problems is different.

A variety of other contextual factors similarly can be considered, such as availability of materials, technology, and so on. Knowing these can help us understand the selection process.

Borrowing of elements, designs, and ideas from vernacular architecture without a good understanding of the context may lead to inappropriate solutions because the context and therefore the "problems" and the ensuing design solutions

are quite likely to be different. An example of inappropriate borrowing and use of vernacular elements is provides by Fathy:

"In modem architecture, claustra are sometimes used inappropriately over the entire facade of a building to serve as a brise-soleil. In fact, the claustrum is a screen to be set in an opening of proper size and should not be used as a bearing wall. In extending it beyond its frame and scale to cover an entire facade, the structural scale and aesthetic rules of architecture are disturbed. Furthermore, when claustra are set at eye level, they annoy the eye with dazzling contrasts of light and shade, resulting from the inappropriate relative and absolute sizes of the solid and void lattice components and the lack of graduation caused by the rectangularity of the bars." (Fathy:1986:55; picture on p. 111).

Fathy (1986:58) also mentions that the malqaf (windcatch) can be used appropriately in modern buildings, as was done by Paul Rudolf in his proposal for the School of Architecture in Yale University (see Fathy 1986:120 for a picture).

### Culture

Although culture underlies many of the categories described above, it is useful to highlight some special aspects and to re-emphasize its importance. Rapoport (1969a,b) has shown that choices of architectural elements are not determined by technology, availability of materials, climate but rather are mediated by the cultures. He provides evidence to indicate that different cultures, left to their own devices, develop their own, mostly unique solutions (see also Saile 1980). For example, for transporting water long distances the Romans developed the aqueduct, while the Iranians have underground water channels called qanats. An architectural equivalent is the difference between malqaf and badgir, both windcatchers, pointed out by Fathy (1986).

Cultural values affect the framing and selection of design "problems". Choices are involved in the selection and definition of a "problem" as one, out of the numerous problems related to architecture, requiring attention. These selection decisions are mediated by cultural values, logic and notions of appropriateness. Hence, the "problem" set by one culture in an area, for example in a hot dry climate, may be quite different from the way it is seen by another.

Selection of a solution as appropriate also involves choices which are affected by cultural values. Historically, presumably, numerous and progressive attempts were made over time to resolve the "problems" faced by a society. Some of these must have been seen as being better than others, as some were selected more and became common practice. That is, choices were made by members of that culture using their own values and ensuing logic regarding which solutions were more appropriate. Hence, even if the parameters and definition of a problem were identical, the solution selected by two cultures may still vary. The variety of architectural designs of different cultures in the world is evidence of this.

Thus, a cultures exercise judgement in the decision in selecting which "problems" and architectural design solutions are appropriate. A design solution may be deemed inappropriate by a culture even if it is technologically advanced and sophisticated, uses innovative materials, or even innovative design ideas. It is therefore useful for designers to consider culture (see also Rapoport 1969).

Cultures reject designs they consider inappropriate. For example, in this case from India, deeming that local fisherman needed more permanent and proper housing rather than live in their vernacular housing referred to by the government as "shacks", the government designed and built a set of multi-storied flats for the fishermen. Even though the government pressured them to move into and live in their flats, apparently, the fishermen rented out or sold the flats and continued to live in their "shacks". They preferred their shacks apparently because the flats were not seen by them as appropriate for fisherman's lifestyle. One problem was that there was no space in the flats to spread fishing nets to dry and repair.

Another example is the story of the selection of the "wrong" design in Turkey. Western architects were invited to design and build housing in response to an environmental disaster--that of an earthquake. These architects designed multistoreyed housing in response. To house construction workers, they used designed-to-be-temporary, rapidly constructed geodesic domes. These geodesic domes were to be dismantled on completion of the main project. The local Turkish people reportedly preferred the geodesic domes to the housing units designed for them (Warfield personal communication). For the same reasons, use of vernacular architectural elements from elsewhere may or may not be seen as appropriate by the culture.

### CONCLUDING DISCUSSION

In this paper I have described four different views taken by writings on vernacular architecture. I suggested that it is not very useful to overlook vernacular architecture by considering it unsophisticated. Looking at the positive aspects of vernacular architecture for the lessons it holds is useful. These excite the imagination and spur action. These qualities of vernacular architecture are not being disputed here. Disregarding the features and problems described above will increase the chances for misunderstanding and errors. This paper also points to the perils of looking at vernacular architecture superficially and uncritically.

I am not recommending abandoning the study of vernacular architecture. Rather, I would like to reiterate Rapoport's (1989:79) point:

"Not only is it important to study traditional environments, it is essential."

Based on this analysis, I advocate a more balanced and in-depth approach and a mor critical examination of vernacular architecture.

Borrowing ideas, elements and techniques from vernacular architecture should be done with an awareness of at least three features: symbolism and meaning, context, and culture. When architects look to vernacular architecture for inspiration they do not necessarily restrict themselves to the local vernacular but often borrow from other cultures, and sometimes from older vernacular architecture. As I explained above, borrowing even from the same culture without knowledge of embedded issues and factors can lead to problems for the recipient culture and may even lead to rejection of the design.

As professionals entrusted by the public, architects need to take steps to avoid errors. It is in this spirit that I present cautions described earlier and some additional ones described below. It is important to note that use of particular vernacular architectural elements may:

- symbolically convey inappropriate messages,
- lead to dissatisfaction due to the symbolism or meaning attached to some elements,
- lead to inappropriate design due to overlooking of or disregard for context,
- lead to designs inappropriate for a culture, which may lead to abandonment, lack of use, misuse, or destruction of the designs,
- symbolically or otherwise privilege some groups,
- underprivilege or disadvantage some groups,
- lead to increasing or lowering of status of some groups,
- lead to conflict caused by non-use and inappropriate use of some elements.

This paper indicates that inappropriateness in the use of elements from vernacular architecture can lead to problems. The effects of use of inappropriate elements from vernacular architecture needs to be researched further so that we are able to obtain a better and more complete understanding of the effects of inappropriate use.

## REFERENCES

Alexander, Christopher (1964) *Notes on the Synthesis of Form,* Cambridge, MA: Harvard University Press.

Bahadori, M.N. (1978) "Passive Cooling Systems in Iranian Architecture", *Scientific American,* 238 (2):144-154.

Becket, T.P. (1950) "Qanats of Persia", *Journal of Iranian Studies,* 125-133.

Beazeley, Elizabeth (1977) "Some Vernacular Buildings of the Iranian Plateau", *Iran*:15:89-102.

Beazeley, Elizabeth (1966) "The Pigeon Towers of Isfahan", *Iran*:4:119-124.

Biedermann, Hans (1992) *Dictionary of Symbolism,* New York, NY: Facts on File.

Blier, Susan (1987) *The Anatomy of Architecture,* New York, NY: Cambridge University Press.

Bonine, Michael (1980) "Aridity and Structure: Adaptations of Indigenous Housing in Iran," in Clark, K.N. & Paylore, P. (ed) *Desert Housing: Balancing Experience and Technology for Dwelling in Hot Arid Zones,* Tucson, AZ: University of Arizona, Office Arid Lands Studies.

Bourdier, Jean-Paul & AlSayyad, Nezar (ed) (1989) *Dwellings, Settlements and Tradition: Cross-Cultural Perspectives,* Lanham, MD: University Press of America.

Bourdieu, Pierre (1973) "The Berber House", in Douglas, Mary, (ed.) *Rules and Meanings: The Anthropology of Everyday Meanings.* Harmondsworth, UK: Penguin, pp. 98-110.

Boyce, Mary (1971) "Zoroastrian Houses of Yazd" in Bosworth, C. E. (ed) *Iran* and Islam, New York, NY: Bibliographic Distributors, pp. 125-146.

Boyce, Mary (1977) *A Persian Stronghold of Zoroastrians,* London, UK: Oxford University Press.

Carter, Thomas & Herman, Bernard L. (ed) (1989) *Perspectives in Vernacular Architecture III,* Colombia, MI: University of Missouri Press for the Vernacular Architecture Forum.

Cunningham, Clark E. (1972) "Order in the Atoni House", in Lessa, William A. & Vogt, Evon Z. (ed). *Reader in Comparative Religion: An Anthropological Approach,* New York, NY: Harper & Row, pp. 116-135.

Denel, M. Bilgi (1990) "Maxims and Traditions: Anatolian Vernacular", in Turan, Mete (ed) *Vernacular Architecture: Paradigms of Environmental Response,* Aldershot, UK: Avebury.

Denyer, Susan (1978) *African Traditional Architecture,* London, UK: Heinemann.

Edelman, Murray (1964) *The Symbolic Use of Politics,* Urbana. IL: University of Illinois Press.

Edelman, Murray (1978) "Space and the Social Order", *Journal of Architectural Education,* 32(3):.

English, Paul Ward (1966) *City and Village in Iran: Settlement and Economy in the Kirman Basin,* Madison, WI: University of Wisconsin Press.

Fathy, Hassan (1973) *Architecture for the Poor,* Chicago, IL: University of Chicago Press.

Fathy, Hassan (1986) *Natural Energy and Vernacular Architecture,* Chicago, IL: University of Chicago Press.

Ghirardo, Diane (ed) (1992) "Architecture and Culture in Fascist Italy" *Journal of Architectural Education,* 45 (2):66-106

Goodsell (1993) "Political Meanings of the American State Capitol", *Journal of Architectural and Planning Research,* 10(4)(Win):294-307.

Head, Raymond (1986) *The Indian Style,* Chicago, IL: University of Chicago Press.

Highlands, Delbert (1990) "What's Indigenous? An Essay on Building", in Turan, Mete (ed) *Vernacular Architecture: Paradigms of Environmental Response,* Aldershot, UK: Avebury.

Hubka, Thomas (1989) "Deep Contextualism: An Attitude Toward Vernacular Architecture Research", paper presented at the Vernacular Architecture Forum Conference in Salt Lake City, UT 1987; abstract in: Carter, Thomas & Herman, Bernard (ed) *Perspectives in Vernacular A.•hitecture. III,* Columbia, MO, University of Missouri Press, p. 242-243.

Katzir, Yael (1982) "Preservation of Jewish Identity in Yemen: Segregation and Integration as Boundary Maintenance Mechanisms", *Comparative Studies in Society and History,* pp.264-279.

Knapp, Ronald G. (1989) *China's Vernacular Architecture: House Form and Culture,* Honolulu, Hawaii: University of Hawaii Press.

Kniffen, Fred B. (1986) "Folk Housing: Key to Diffusion" in Upton, Dell & Vlach, John Michael (ed) (1986) *Common Places: Readings in American Vernacular Architecture,* Athens, GA: University of Georgia Press, pp. 3-26.

Mazumdar, Sanjoy (1981) *Control and Cities: Some Examples from Iran,* Cambridge, MA: M.I.T. M.Arch.A.S./M.C.P. Thesis, Department of Architecture and Urban Studies and Planning.

Mazumdar, Sanjoy (1986) "Corporate Image Making Through Architecture: Media Iconographics" in Dutton, Thomas (ed) *Icons of Late Capitalism: Corporations and Their Architecture,* Proceedings of East Central Regional Meeting of the ACSA, Miami, OH: ACSA Press.

Mazumdar Sanjoy & Mazumdar, Shampa (1984) "Zoroastrian Vernacular Architecture and Issue of Power, Status and Conflict" abstract in Duerk, Donna & Campbell, David (ed) *EDRA 1984: The Challenge of Diversity,* Washingotn, DC: EDRA.

Mazumdar Sanjoy & Mazumdar, Shampa (1994) "Societal Values and Architecture: A Socio-Physical Model of the Interrelationships" *Journal of Architectural and Planning Research* 11(1):66-90.

McHenry, Paul G. (1980) "Adobe Comes Full Circle", in Clark, K.N. & Paylore, P. (ed) *Desert Housing: Balancing Experience and Technology for Dwelling in Hot Arid Zones,* Tucson, AZ: University of Arizona, Office Arid Lands Studies, p. 115-.

Moholy-Nagy, (1957) *Native Genius in Anonymous Architecture,* New York, NY: Horizon Press.

Oliver, Paul (1990) "Vernacular Know-how", in Turan, Mete (ed) *Vernacular Architecture: Paradigms of Environmental Response,* Aldershot, UK: Avebury, pp. 146-160.

Oliver, Paul (1989)"Handed Down Architecture: Tradition and Transmission", in Bourdier, Jean-Paul & AlSayyad, Nezar (ed) (1989) *Dwellings, Settlements and Tradition:Cross-Cultural Perspectives,* Lanham, MD: University Press of America, pp. 53-76.

Ota, Hirotaro (ed) (1972) *Traditional Japanese Architecture and Gardens,* Yokohama, Japan: Kokusai Bunka Shinkokai.

Ranier, Ronald (1977) *Anonymes Bauen im Iran (Anonymous Building in Iran),* Graz, Austria: Stadplanun gsabteilung Der N.I.S.C. Akademische Druck-U. Verlagsanstalt.

Rapoport, Amos (1990) "Defining Vernacular Design", in Turan, Mete (ed) *Vernacular Architecture: Paradigms of Environmental Response,* Aldershot, UK: Avebury.

Rapoport, Amos (1989)"On the Attributes of Tradition"in Bourdier, Jean-Paul & AlSayyad, Nezar (ed) (1989) *Dwellings, Settlements, and Tradition: Cross-Cultural Perspectives,* Lanham, MD: University Press of America, pp. 77-105.

Rapoport, Amos (1982) *The Meaning of the Built Environment: A Non-Verbal Communication Approach,* Beverly Hills, Sage.

Rapoport, Amos (1969a) *House Form and Culture,* Englewood Cliffs NJ: Prentice Hall.

Rapoport, Amos (1969b) "THe Pueblo and the Hogan: A Crosscultural Comparison of Two Responses to an Environment", in Oliver, Paul (ed) *Shelter and Society,* London, UK: Barrie & Radcliffe.

Rudofsky, Paul (1964) *Architecture Without Architects,* New York, NY: Doubleday.

Shepherd, Walter (1971) *Shepherd's Glossary of Graphic Signs and Symbols,* New York, NY: Dover Publications.

Stea, David (1990) "The Ten Smudge Pots of Vernacular Building: Notes on Exploration into Architectural Mythology", in Turan, Mete (ed) *Vernacular Architecture: Paradigms of Environmental Response,* Aldershot, UK: Avebury.

Stead, Peter (1985) "Lessons in Traditional and Vernacular Architecture" in Golany, Gideon (ed) *Design for Arid Regions,* New York, NY: Van Nostrand Reinhold, pp. 97-120.

Swithenbank, Michael (1969) *Ashanti Fetish Houses,* Accra, Ghana: Ghana Universities Press.

Tambiah, Stanley (1973) "Classification of Animals in Thailand", in Douglas, Mary ed. *Rules and Meanings,* Harmondsworth, UK: Penguin.

Tavassoli, Mahmood (1983) "City Planning in the Hot, Dry Climate of Iran", in Golany, Gideon (ed) *Design for Arid Regions,* New York, NY: Van Nostrand Reinhold.

Upton, Dell (1983) "The Power of Things: Recent Studies in American Vernacular Architecture", *American Quarterly* 35(3):262-279.

Upton, Dell & Vlach, John Michael (ed) (1986) *Common Places: Readings in American Vernacular Architecture,* Athens, GA: University of Georgia Press.

Vale, Lawrence (1992) *Architecture, Power, and National Identity,* New Haven, CT: Yale University Press.

Warfield, James P. (1984) "Vernacular Influences as Means to Culturally Responsive Architecture", Paper Presented at the Conference on *Built Form and Culture Research,* Lawrence, KS: Oct 18-20.

Warren, John & Fethi, lhsan (1982) *Traditional Houses in Baghdad,* Horsham, England: Coach Publishing House Ltd.

Wells, Camille (ed) (1986) *Perspectives in Vernacular Architecture II,* Colombia, MI: University of Missouri Press for the Vernacular Architecture Forum.

Whittick, Arnold (ed) (1971) *Symbols. Signs and Their Meaning,* London, UK: Leonard Hill.