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Designing for Achievement of Sustainable Vernacular Patterns in a Cultural Context

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Abstract

Traditional wisdom in vernacular design can be a guiding light for our design approach today. All of the important pressing issues of our time, such as environmental sustainability, ecology, and meaning are an intricate part of a vernacular process of design. Vernacular architecture is the physical manifestation of a specific culture. The consideration of patterns of behaviour in the design process ensures the reflection of cultural identity and meaning in the proposed alternatives. In vernacular design the range of ideas are constrained in advance and are limited to a specific community or intended audience. The sustainable approach is embedded in a vernacular design which stems from a sense of oneness with nature. This article includes a variety of case studies related to vernacular architecture. Vernacular ways of building stem from a vernacular lifestyle and belief system. Lessons from this design process show us how to bring the sense of place back to any context.

Keywords: Vernacular design, Patterns, Cultural landscape, Meaning, Sustainable.

طراحی برای محصولی بوم گرا - الگوهای پایدار در بستر فرهنگی رضا سیروس صبری*

استاد، گروه معماری منظر، دانشکده معماری و شهرسازی، دانشگاه سیستم ایالتی
کالیفرنیا و دانشگاه ویرجینیا تک

چکیده

خرد حاصل از سنت‌ها در طراحی بومی می‌تواند راهنمای ما در رویکرد طراحی امروزمان باشد. کلیه مسایل بر اهمیت زمان ما در حیطه‌های پایداری محیط، بوم‌شناسی و معنا هر کدام بخش‌های دقیقی از فرایند بومی طراحی هستند. معماری بومی تبلور کالبدی فرهنگ خاصی است. ملحوظ نمودن الگوهای رفتاری در فرایند طراحی موجب بازتاب هویت فرهنگی و معنا در گزینه‌های پیشنهادی می‌شوند. در طراحی بومی رده‌های حاصل از ایده‌پردازی در چارچوب از قبل تعیین شده و مختص به جامعه خاص و مخاطبین مشخص است. رویکرد پایداری نیز در طراحی بومی نهادینه شده که از حس وحدت با طبیعت ناشی می‌شود. در این مقاله نمونه‌های متنوعی مورد بحث قرار می‌گیرند. نحوه ساخت بومی از شیوه‌های زندگی و اعتقادات بومی حاصل می‌آید. از فرایند طراحی بومی می‌توان درس‌هایی ارزشمند را در جهت معرفی حس مکان در هر بستری فراگرفت.

کلمات کلیدی: طراحی بومی، الگوها، منظر فرهنگی، معنا، پایداری.

Introduction

In an age of environmental and economic collapse, peak oil prices and other converging emergencies, the solution for many of our ills might just be getting back to basics and focusing on food, clothes, and shelter. The long-term survival of the planet as a host for sustained human occupation in anything other than a degraded lifestyle is in serious doubt. We need to think differently about house and home, for material and for spiritual reasons, both the personal and the political. It is time to look back and seek time-tested solutions. This is a viable approach in architecture as a reflection of societal values.

There is an increasing threat of erosion of traditional wisdom in the built environment as the manifestation of life, due partly to the extraneous acceptance of modernization by indigenous communities. The role of cities and urban areas as a guiding light and reference point to smaller towns and rural communities is a facet of globalization, in this case, a blind assimilation. This side-effect of globalization should be controlled through a process of selecting solutions that parallel the complexities of our environment among vernacular as well as tested modern ideas.

Architecture is one of the most dependable reflections of a civilization's philosophical foundations. Although some of the most notorious monarchies have constructed the most aesthetically magnificent and ecologically responsible civic works, such as the boulevards in Paris and Chahar Bagh in Esfahan where merchants have come together they establish a bazaar, a place full of everyday life, as opposed to the wastelands of Middle America's "land of the free" tract houses and merchandise strip malls.

In the past, human life was intimately related to things and places, therefore mankind had a sense of belonging and identity. Tessie Naranjo's statement in the American Indian museum at Washington DC reads: "Our elders created for us a sacred way of being in the universe. It is our responsibility to pass this understanding on to the next generation." (Martinez, 2004) The world Naranjo describes was experienced as a world of quality and meaning, thus it became a common world, a world of qualitative totality. Now we deal with abstract understanding, thus imagination is executed and reason reigns. Modern man loses his own identity as well as the sense of community and participation. Man becomes "homeless" and "careless".

The most impressive examples of architectural iconography and municipal planning usually relate to a fully resolved integration of social structure, governmental policy, religious rituals, and human relationship to the environment. Certainly, the most environmentally responsible shelter was developed by nomadic cultures who built only what they needed: simple clusters of tree branches and palm leaves which blew away in the next strong wind. We can look back and extract the lessons of the past to enhance our future way of building.

The three messages conveyed in this article are as follows. First, cultural reflection on our vernacular architecture deserves attention. Second, this cultural value should be protected and preserved. Third, our vernacular architecture can be a guide to shape our built environment today.

What is Vernacular architecture?

Vernacular architecture is as a set of objects, the common buildings of a given place and time; as an

ensemble of buildings or vernacular landscapes, the product of a particular architectural community; as vernacular architecture studies, an approach to studying buildings as cultural manifestations. (Carter, 2005) More specifically, vernacular architecture is the study of those human actions and behaviours that are manifested in commonplace architecture. Also, a common form of a building in any given place and time is vernacular architecture and so it must encompass material and design aspects. The close tie that vernacular architecture has with the natural elements expands its meaning to a construction technology developed out of regionally acceptable materials which satisfied the demands of the climate, topography, and an agrarian society. Materials in a vernacular context have been tested in that community over generations. The use of new materials from the outside world was rarely accepted. But design process for achieving vernacular outcome has a different approach.

Design implies planning the ability to transform intangible ideas about beauty, function, and behaviour in a particular society into tangible ideas about form. This applies to all buildings in a vernacular texture. Steeping oneself in a vernacular

culture is the best way to understand vernacular architecture. Vernacular architecture reveals the architectural expression of community, traditions, and relationships. These are ordered by hierarchy of function and convey both ceremonial as well as utilitarian meanings. Architecture, from this perspective, becomes a living and changing phenomenon rather than a static work of art that can be created instantaneously. Man's native inertia is overcome only by desire and nothing gets made unless it is desirable. In other words, vernacular architecture has not been formed by accident or thoughtlessly but rather represents the thought of human beings and therefore it repays our attention (Kubler, 1962).

Vernacular Design Process

The notions of "design" and "designer" came to prominence after the industrial revolution. The change in the process of providing the everyday product from a hand-made process to mass-production brought about an important role for designers. This "design" oriented culture has become the norm in "role-model societies" (Sabri, 1997). It is vital to know explicitly the differences between the two design approaches.



Figure 1. The source of modern design ideas (drawn by Sabri, 2012).

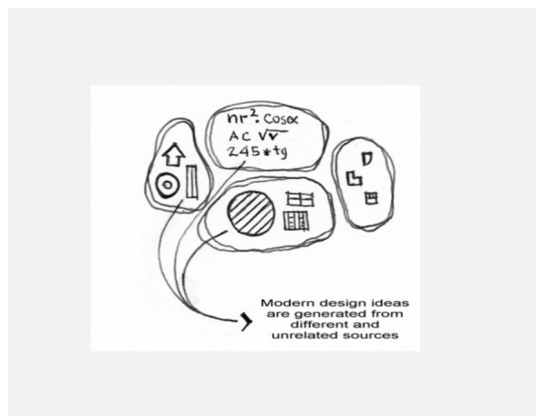


Figure 2. The source of vernacular design (drawn by Sabri, 2012).

The vernacular design process is different from design by an architect trained academically in the traditions of modernism. The major difference in vernacular design points to the availability of the ideas. So-called 'modern' architects exercise the freedom to draw from all possible sources, from local to cyber, and aspire to the unique and innovative to quench the thirst for novelty in their designs. In vernacular architecture the range of ideas is more self-contained and limited by the specific community or the intended audience. Also, the end-product would be considered wrong in a vernacular environment if it fell too far outside the conventional norms of the community or the group. So, designs in the vernacular realm are usually conservative, based on replication rather than invention. This does not mean that there is no creativity and change. The new ideas are introduced slowly and only in the framework of a larger vernacular concept in a particular architectural community. A constant, small variation within accepted norms is the rule.

This revolution in the norms of the community is evident if we witness a shift from one common kind of behaviour to another. For example, in many rural areas in Iran farmers used to live in a house in which their livestock were kept in the lower level. This practice was used to conserve energy and to ensure security. Now, with the change of economy, their behaviour and the norms of the design for their houses also underwent a change. Such dramatic shifts are rare in vernacular architecture. The usual change is slow and within an accepted paradigm unless the forces of 'progress' are at work. Here, progress is defined in the degree in which adjusting environmental reforms respond to

the objectives of an economy of profit margins, and the market. That is the major shift for the absence of culturally-based design in recent vernacular communities in countries, such as Iran, where western cultural icons are so popular. Vernacular design can be described as the assembly of pre-existing parts or ideas to solve a problem or create a physical solution. This putting together of ideas from a context is similar to "bricolage" (Levi-Straus, 1966).

- Patterns of behaviour
- Traditions of the area
- Building ideas within the tradition and climate
- Commonly used materials

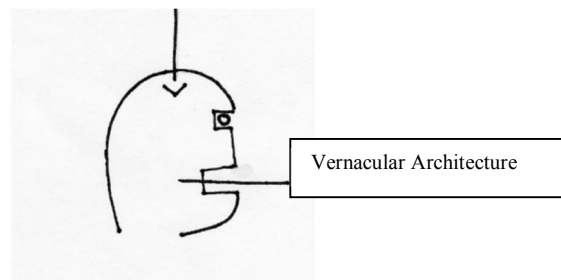


Figure 3. The vocabulary of vernacular architecture
(drawn by Sabri, 2012).

Modern architects formulate new elements of designed product, while a vernacular designer creates a newly designed product out of old parts. "Old parts" does not necessarily mean obsolete. Vernacular designers seek design decisions by working from a commonly understood and shared ground of forms and materials that have been tested in a specific community over generations. In this realm criteria for design decisions are based on space, form, community values, and architectural meaning.

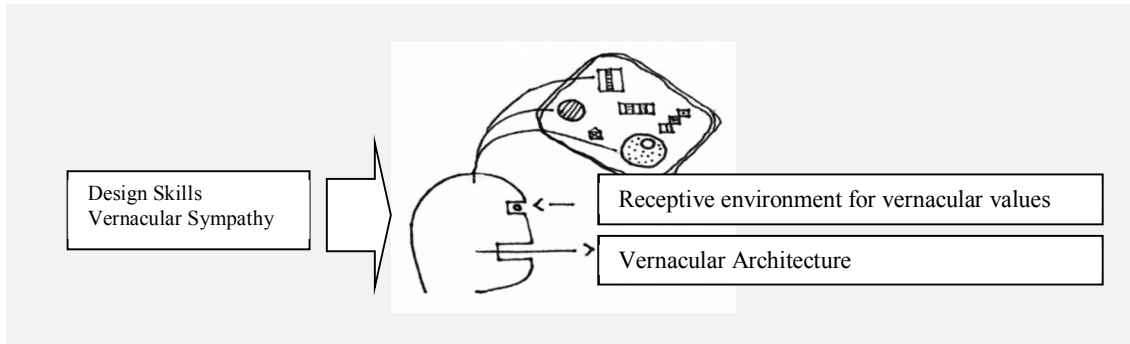


Figure 4. Conditions for the emergence of vernacular architecture (drawn by Sabri, 2012).

Understanding the Patterns

In order to make informed inferences about what the built environment has meant and continues to mean to the people who built and continue to occupy it, we have to move beyond description. The common framework for analysis in vernacular architecture is associated with time, space, form, function, and technology. Developing these analytical frames begins early in the intelligence phase of the process of design. Architectural and archival evidences join to reveal the patterns of behaviour that are the result of the research process.

Pattern is an important concept in design as a part of vernacular architecture study, because it results from repetition with a healthy amount of variation and even innovation. The following famous saying is a test by which we can recognize patterns in any community. If it happens once it is an accident, if it happens twice it is a coincidence, if it happens three times, it is a pattern (Coelho, 1988). Consistency in the behaviour of any group of people results not from mindless imitation, but from the presence of a set of shared operating values. The repetitive behaviour becomes a sign

that this specific way of doing things was considered right and appropriate for a good many people at a specific time and over a defined space. Thus through observing repetition we can decode the regular and patterned behaviour that is culture-based. Here culture includes social norms as well as ecological consequences and interactions.

The meaning of the environment, as it is valued in the norms of the society, should be strengthened. Consensus reached through generations has the seal of approval on the shared character and the meaning. Environmental identity arises from this common vision. The past exists as an infinite number of powerful mini narratives – everybody plays his part in the framework of the larger story. The story runs through generations in a continuum of events occurring in succession, leading from the past to the present and even into the future. History, as unrelated fragmentations is not useful in giving us a coherent perspective to understand the past and learn from it. Patterns of behaviour are rooted in this perspective. We need to build models of interpretations that address how the central issues, our common bounds, shape the world we live in (Sabri, 2012).

In examining the patterns of individual behaviours we should aim for collective statements of community structure and identity, towards interpretive narratives that tell about the ways people of different backgrounds try to survive and live with a sense of belonging in an environment.

Result

Cultural Landscapes – a Contextual Meaning of Nature and Culture

The quest for meaning is at the heart of any cultural entity. The erosion of traditional wisdom in the tangible and intangible aspects of our life is due partly to the wholehearted acceptance of modernization without thinking of the consequence of the lost meaning in our lives. This side-effect of globalization at different scales – internationally, nationally and locally – should be controlled through a multidisciplinary process of selecting solutions among vernacular as well as modern ideas (Sabri, 2010). Lewis Mumford warns us about the way modern architecture looks at design with

“standardized materials and patterns and plans and elevations – here are the ingredients of the architecture of the machine age” (Mumford, 1938).

How do we become interested in our own culture? An inquisitive environmental planning open to poking at the following issues is the first step. Informal education plays an important role. It helps us to know how things started. What different phenomena mean in a society? How did we arrive here? All these issues make us belong to an episode of a long story. This is the cultural theme of a community. Vernacular landscape is a part of this scene. Vernacular architecture is the physical manifestation of an intangible culture.

Although Frank Lloyd Wright, who pioneered the subject of “organic architecture” in the early 20th century, declared that “out of the nature comes what character in any particular situation you can give to a building as a creative artist”(Carter, 2005), few were listening. The modern designer considers nature as an element of design. In a vernacular ideology, nature is an indispensable part of heritage.



Figures 5 and 6. Women peeling pomegranates in traditional settings in the North of Iran. (Pictures by author).

Human beings are a part of nature, and nature communicates with us; we should be open to the messages of nature. Unity can provide us with a meaningful landscape, a place rooted in our cultural relevance, a place with a deep sense of belonging.

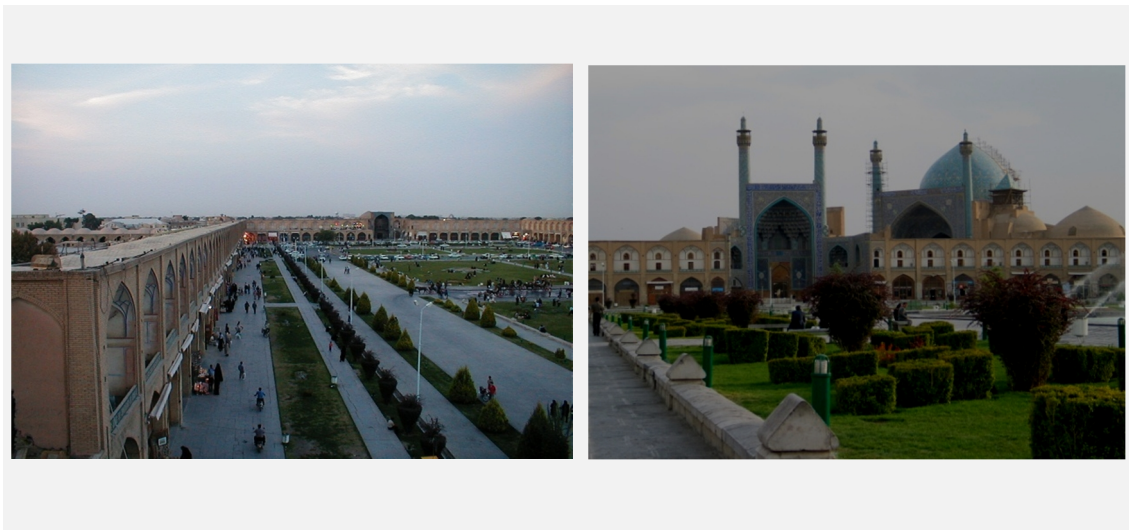
Landscapes all over the world are inscribed with enduring physical marks. Socially constructed and engaged, landscape inscriptions (monuments, roads, gardens, rock art) are foci of social experience and as such are symbolic expressions that mould and facilitate the transmission of ideas (David and Wilson, 2002). Through land-marking, landscapes become social arenas where time becomes a component through memorializing history, where personal roots, ambitions, and attachments are laid, where futures unfold, and we experience all this in the present.

A sustainable approach to habitat, following aboriginal cultures' belief that any hard-built dwelling must refer to nature's need for reclamation, would soften our "designer" view of the environment. The modern notion of an ego-centric mission in design should transform to an eco-centric design process. The call for the reawakening of an expansive sense of "oneness" with nature is resonating in the messages to ensure life preserving in our environment. Unfortunately, the visual interpretation choices of most architects are locked in time-worn early 20th century stylistic idioms which tend to confuse rather than reinforce a progressive image of an earth-friendly environment.

Vernacular settings are best examined in a context larger than the single building. A constellation of several buildings and their immediate surroundings constitute a landscape with place-making and place-marking aspects. The

place-making involves social encounters, immersion in the sights, sounds, sun, aroma, wind and atmosphere of a locale, and curiosity about the traces of thought, imagination and investment that have guided their construction and use over time. Place-marking involves selection and location of the individual structures to help with the process of integrating landscape, structures and people into an environment that reflects a deeper meaning and a distinct character. This all comes to the consideration of the "Spirit of Place". Thoughtfully designed places had a protective, guardian spirit that nurtured life. The concept encompasses the spiritual characteristics of a place (history, traditions, culture), the tangible attributes (natural setting, architecture, walkways, roads, etc.), and the social aspects (the mix and flow of living beings). The special places we cherish in our memories from New York's Central Park to the Naghshe-Jahan square in Esfahan all have acquired the spirit of place that transforms a space to a place. Mass and space was designed at the same time as if the place was carved out of the dense fabric. When you visit such special places you think that there was something spiritual, inviting and intimate about them. They allow visitors to experience and participate in life on a more profound level. The place immerses you in the culture.

Places such as Naghshe-Jahan square are no longer being designed or built. How did we get here? Design plays an important role in shaping the environment. In the first decade of the 21st century we observe designers addressing wants rather than needs and allying themselves to the blatant consumerism of the 'retail culture' designers who emerged from the backrooms to claim a starring



Figures 7 and 8. Naghshe-Jahan square in Esfahan. (Pictures by author).

role in the shaping of modern life (The Genius of Design, 2010). In this approach, novelty is a final prize. In response to this, the vernacular approach in design can bring back the inherent sense of place to any community.

Scholars who extended the study of vernacular architecture to whole landscapes have been able to show the essential interrelation of building spaces to outdoor spaces in rural areas. In his influential book “Life Between Buildings”, Jan Gehl indicates the importance of outdoor spaces (Gehl, 1971). He also echoes the consideration of human interaction and behaviour in public space in his recent book, “Cities for People” (Gehl, 2010). Lying at the root of his research and conclusions is the human condition, the desire to interact with others, even if only through their presence. This leads to the fundamental consideration that design should respond to people’s interaction with the context. Such landmark studies suggest the need to be aware of the indoor-outdoor relationship and the related behaviours in the entire built environment during the design process.

Large landscapes can metamorphose over generations, completely changing their meanings. This change can become a part of the meaning of that landscape. Runnymede, East Palo-Alto, was set up in 1916 with the idea of creating an agricultural utopia with one-acre lots each with a house and a grid-planned street network. Chicken farming died in 1930s to be replaced by flower growing which itself faded out in 1960s. Runnymede became a crime-ridden area with some still living off the land. Today this area is a cul-de-sac, a fenced-in suburban residential enclave. The history of a community should play a role in defining a coherent place for the future (Wackernagel, 1995).

Discussion

A Vernacular Way of Building Stems from a Vernacular Lifestyle and Belief System

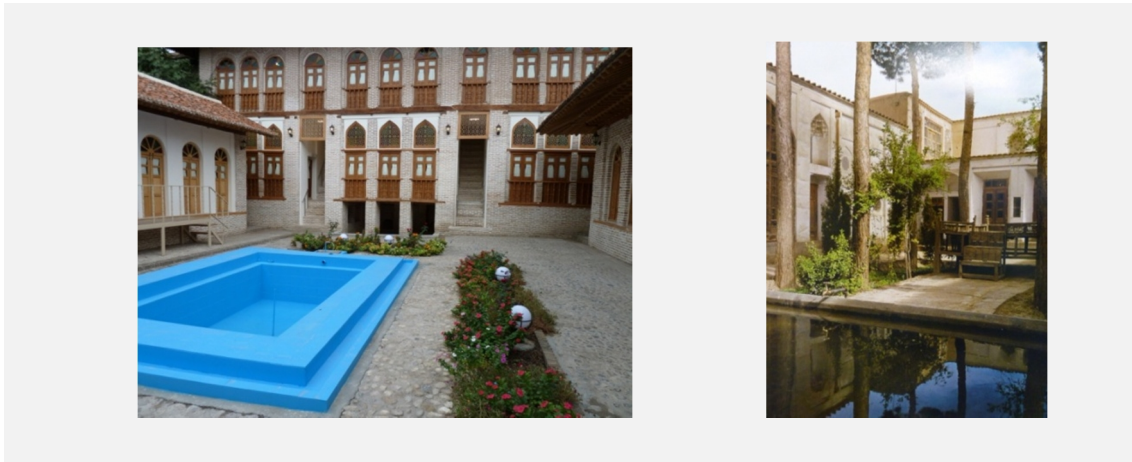
The vernacular way of life is unlike a modern society’s response to disruptive environmental occurrences, like earthquakes, floods, fires, and hurricanes, which demands that technology finds solutions and condemns the event as a “natural

disaster". In the vernacular thought process, these dreaded catastrophes are preventable since they are not necessarily natural but instead man-made disasters. If the community had not paved over the wetlands, the flood water would have been absorbed and the township would not have been flooded. If people did not build flimsy dwellings on the hillside over a fault-line, an earthquake would not have tumbled their houses into the valley. This view of the Earth and its riches as an intrinsic part of one's self-called animism, clearly precludes mistreatment of the environment because this would only constitute a destruction of self. Those who hold it see their relationship to the environment as a single harmonious continuum. As Martin Heidegger declares: "It is one thing to use the earth: it is quite another to receive the blessings of the earth and become at home with the laws of this reception" (Heidegger, 1940).

In his book "Sustainable Urbanism", Douglas Farr states that the American lifestyle, believed to be rational, has only been based on self-interest and has thus failed and is on the wrong course (Farr, 2007). The metaphor of the 'ecological footprint' approximates and visually illustrates the capacity of nature's systems to support the demands placed upon it by contemporary lifestyle. It categorizes human demands on land into food, goods and services, transportation, housing, energy use, location, green practices, and income. According to research prepared by WWF, starting around 1977 human resource demands exceeded the planet's capacity to provide them (Wackernagel, 1995). By far, the most surprising and provocative finding concerns the energy intensiveness of the process of providing food for Americans. A prime villain in all

this is a contagious love-affair with private automobiles. This way of life has been spreading, especially in developing countries which lack of proper infrastructure network. Therefore, this quest to create infrastructure destroys the vernacular way of life. We have all become addicted to driving our own cars, therefore addicted to oil. This is all a matter of choice in lifestyle.

With all the changes in the meaning of life we should realize that there are some lasting qualities that linger for generations. Privacy has an important effect on Iranian lifestyle. Public and private life has separate domains evident in the arrangement of spaces in a vernacular house. Within a vernacular house, degrees of privacy are expressed architecturally, the most fundamental division being between male reception area and the private area where the more intimate behaviours such as bathing, cooking, and sleeping occur. This family sanctuary usually is placed in the interior courtyard. Although a much more formal façade is presented to the outside world, for visitors such as formal friends, distant family members, strangers, the interior courtyard is a place where the family is free to work and relax. Even today, the living space in Iranian houses has two completely separate sections. The formal setting is waiting for the occasional use of guests to whom the residents are not prepared to present their private life. The intimate and informal setting is available for close friends and family. This is the area that is used every day and almost all the time. Without understanding the extent of this intangible relationship our designs may not be relevant.



Figures 9 and 10. Courtyards of traditional houses in Gorgan (pictures by the author).

The inventiveness of a village builder is evident in the structural and material qualities of the building. This sensitivity to nature transforms an elementary building material like mud, stone, and wood into an astonishing variety of regional house-

types. The use of a three rocks or timber foundation has been discovered to be an earthquake resistant method used for many centuries (Langenbach, 2009).



Figures 11, 12, 13 and 14. Traditional houses in the North and centre of Iran. (Pictures by author).

A townhouse in Esfahan has all the elements of the ideal domestic environment: a sheltered courtyard with trees, a pool, outdoor furniture, and a shady Ivan. This same setting is also discovered in other parts of Iran. An elaborate house in Gorgan located in the Northeast of Iran displays the same qualities in its courtyard. A typical house in Rasht, located in Northern Iran in a temperate climate zone, has an inviting semi-private porch functioning like the courtyard in the hot-arid zone. Flat roofs serve a variety of purposes in the hot-arid zones, such as for storage and drying fruits and vegetables, and also as a pleasant and cool place to sleep in the hot summer evenings. Wind-towers were used in Iran to ventilate houses sustainably without the need for electricity. They also provided wind to the underground pool in the basement to cool off the underground cisterns as seen in Yazd.

Recommendations

The challenge facing the modern designer is to create an outdoor environment that is collective and unifying, but usually the designer's contribution fails as a cosmetic after-the-fact treatment of space. Considering buildings as the larger fabric of streets, squares and viable open space is key to this. Designers influenced by the Modern Movement abandoned time-tested patterns and principles as well as the human dimension evident in Vernacular architecture. The close connection between the life inside buildings and activities on the street was lost in modern design (Trancik, 1987). The modern city resident is forced to create a social life on personal controllable territory instead of engaging in a communal place around the street with neighbours. Therefore, the attitude of individuals towards the

sense of belonging has been radically altered. This change results in the loss of the collective image and meaning of the public place. In a vernacular texture, buildings are subordinate to the powerful collective realm and are integrated with exterior public space. We need to reconsider the patterns of form and corresponding behaviour that enriched the lives of the inhabitants and develop our design vocabulary based on these patterns.

Living in an environment of resource consciousness and economic restraint in the public sector, in particular, and looking for sustainable solutions is crucial. Designs that respond to the indigenous context must be open to public participation. The local wisdom takes part in development process and the abandoned wealth of knowledge in vernacular architecture is once more tapped into. The fruits of indigenous vernacular design do not appear overnight but solutions inspired by strong ideas rooted in societal values and philosophical ideals shall prevail at last.

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