Vernacular Futures

Research Journal of the Faculty of Architecture

FARU Journal
2010

Faculty of Architecture Research Unit
University of Moratuwa–Moratuwa–Sri Lanka

With collaboration of the

5th International Seminar on Vernacular Settlements

30th and 31st of July 2010 – Colombo, Sri Lanka

compiled by

Prof. Harsha Munasinghe

Journal editor
Prof. Harsha Munasinghe

Technical Assistance
AMS Attanayake
Amalie Charles
Bimali Mudunkotuwa

Publisher
Faculty of Architecture
University of Moratuwa
Katubedda
Moratuwa
Sri Lanka
Tel / Fax : 94 11 2650216
faruuom@gmail.com

Volume 01 / Issue 01
December 2010
ISSN 2012-6301

FORWARD

Faculty of Architecture Research Unit (FARU), in association with the Innational Seminar on Vernacular Architecture (ISVS), organizes the research conference "Vernacular Futures" in Colombo. This is the forth FARU research seminar and we believe that this will also be a success in terms of knowledge construction and knowledge transfer. Reflecting the intension of FARU to facilitate research and its strength in molding the human resource needs of the research and development sector in the country, we note the support received by ISVS in organizing this international conference. In keeping with the vision of the University of Moratuwa, "to be a centre of excellence of higher learning and related activities with emphasis on national relevance, international recognition, innovation and creativity...", FARU embarks on strengthening the research culture and innovation in knowledge transfer within the faculty by bringing staff members, postgraduate candidates, and professionals in to one forum.

Having experienced the necessity of reconstruction and resettlement due to natural and man-made disasters, and having noted the significance of vernacular architectural traditions in the era of globalization, ISVS5 will discuss the issue of Vernacular Futures: Reconstruction and Resettlements. Sri Lanka undoubtedly is an instructive example to discuss these issues. The research papers that are presented at the conference will address the issues from various angles with a high diversity of cases.

The abstracts that are compiled here would be presented at the FARU Research Conference held on 30th and 31st July 2010 in Colombo. FARU Research Journal will publish all the full papers that are presented the conference later, thus acknowledging the hard work of the researchers and academics.

Prof. Harsha Munasinghe
Director, Faculty of Architecture Research Unit
Faculty of Architecture
University of Moratuwa
Sri Lanka

MESSAGE FROM THE DEAN, FACULTY OF ARCHITECTURE

It is a great pleasure for me to have the opportunity to write this massage for the third research symposium of the Faculty of Architecture Research Unit, University of Moratuwa. At present the Faculty has a relatively strong research culture. Research activities are carried out at three levels; i.e Faculty level, Department level and Individual level. Major mode of presenting research carried at Faculty level is to hold the annual research conference on a theme related to built environment. This year it has been decided to hold an international seminar on vernacular settlements (ISVS) and it is the fifth seminar on the research arena of vernacular settlements.

The theme of ISVS-5 'Vernacular Futures' was selected for this seminar to identify and discuss the role of local knowledge and technology used in the planning and designing of built environment . It will also deliberate on the issues of the future vernacular settlements and the neo-vernacularism which has been emerged as an approach to bring new life to vernacular settlements.

This seminar will give our academics and professionals the opportunity and the venue to discuss and deliberate various issues pertaining to vernacular settlements in the local and global context.

Prof. P.K.S. Mahanama
Dean, Faculty of Architecture
University of Moratuwa
Sri Lanka

CONTENTS

FORWARD i

MESSAGE FROM THE DEAN, FACULTY OF ARCHITECTURE ii

SHELTER FOR ALL: CONTINUITY AND CHANGE IN THE WORLD HOUSING 01
Professor Paul Oliver

CONTEMPORARY VERNACULARS: INFORMAL HOUSING PROCESSES AND VERNACULAR THEORY 06
Professor Peter Kellett

VERNACULAR SETTLEMENTS 17
Dr. Roland Silva

BRASÍLIA: 50 YEARS 33
Professor Cláudia Estrela Porto

THE VERNACULAR AN EVOLVING TRADITION 47
Deshmanya Vidyajothi Archt. Ashley de Vos

SIWALUH JABU TRADITIONAL HOUSES EMERGENCE LOCAL WISDOM THROUGH INCREASING COMMUNITY PARTICIPATION 49
Nina Carina

NOTES ON THE ETHICS OF STUDYING VERNACULAR ARCHITECTURE 60
Prem Chandavarkar

EMBODIED ENERGY IN VERNACULAR HOUSES: CASE STUDY OF GORAI SETTLEMENT, MUMBAI; INDIA 72
Madhura Yadav

VERNACULAR ARCHITECTURE OF OLD SAFFEIN VILLAGE: THE LAST CHANCE FOR SAVING THE ARCHITECTURAL VALUES OF HISTORICAL KISH ISLAND - IRAN 85
Ali Afshar, Elias Salleh, John Ashraf Lucas

THE ROLES OF TRADITION AND VERNACULAR IN POST-COLONIAL ELITE DOMESTIC ARCHITECTURE OF CEYLON (SRI LANKA) 97
Nishan Rasanga Wijetunge

EXPLORING LOCAL WISDOM IN APPROACHING THE NATURE AND ENVIRONMENT OF SPACE ACCORDING TO THE LOCAL ORDER AND IMAGE 110
Lintu Tulistyantoro

RECONSTRUCTING THE VERNACULAR: PALESTINIAN URBAN LIFE VS. THE "ARAB VILLAGE" 118
Rachel Kallus

MANAGING THE THREAT TO THE LOS' VERNACULAR QUALITY IN JAVA, INDONESIA 132
Titien Saraswati

THE OTLA: A 'FREE SPACE' IN BALKRISHNA DOSHI'S ARANYA SETTLEMENT 144
Krystina Kaza

WEAVING ARCHITECTURE: A STUDY OF WOMEN'S ROLE IN THE VERNACULAR ARCHITECTURE 164
Anna Christina Ealdama, Kristine Ann A. Muñoz, Michelle P. Pernia

THE SABARMATI STORY: MEMORY OF WATER AND NOTIONS OF PLACE 176
Gauri Bharat, Seema Khanwalkar

BRUNEI KAMPONG AYER : AN ANALYSIS OF THE STRUCTURE AND THE CONDITIONS OF EVOLUTION OF A BORNEO MALAY URBANISM 183
Remy Leblanc

THE TRADITIONAL COURTYARD HOUSE OF CENTRAL AND SOUTHERN SARDINIA: METHODOLOGICAL HYPOTHESIS FOR THE TYPOLOGICAL AND PERFORMANCE RENOVATION OF "CASA DEMURTAS" IN ESCOLCA (CAGLIARI, SARDINIA) 191
Antonello Monsù Scolaro, Giamila Quattrone

NEW MACHINE VERNACULAR:REMOTE BUILDING DEVICES, DIGITAL/CULTURAL ACCOMMODATION, AND TECHNOLOGY'S RENEWED HUMANITARIAN AGENDA 201
Marcus Shaffer

VERNACULAR ARCHITECTURE INNER BADUY COMMUNITY IN CIBEO VILLAGE AS REPRESENTATION OF CREATIVITY AND INNOVATION RESPONDING TO THE NATURE 211
Henry H Loupias

INFORMAL STRUCTURES: VERNACULAR SPATIAL RESPONSES TO THE INDUSTRIAL CORRIDOR IN INDONESIA'S MAIN RICE PRODUCER REGENCY, KARAWANG WEST JAVA 218
Kemas Ridwan Kurniawan

ANALYSING THE MORPHOLOGICAL CHANGES IN VERNACULAR DOMESTIC ARCHITECTURE OF KERALA, INDIA SINCE 1947 235
B S Bhooshan, Manoj Kumar Kini

DESIGNING THE VERNACULAR: AN INQUIRY IN THE PROCESSES OF MAKING IN KUTCH, INDIA 251
Sachin Soni

ENHANCING THE QUALITY OF LIFE BY MAINTAINING THE CULTURAL VALUES AND VERNACULAR FUNCTIONAL SPATIAL FEATURES OF MALAY VERNACULAR RESIDENCES 262
Amirhosein Ghaffarian Hoseini, Mohd Nasir Baharuddin, Rahinah Ibrahim, Nur Dalilah Dahlan

BORDERING ON VERNACULAR-THE TRADITION OF THE ORIYUR SHRINE 272
N.Lakshmi Thilagam, V.Balasubramanian

CREATING NEW VERNACULAR: RE-ENACTING CULTURE AND MAKING PLACE IN THE WINTER CAMPS OF BAHRAIN 279
Ranjith Dayaratne

REINTERPRETING VERNACULAR AS A STRATEGY FOR CAPACITY-BUILDING IN THE URBANIZING SOUTH: ARCHITECTURE & LABOUR POLICY-MAKING 295
Milinda Pathiraja

EGYPT'S VERNACULAR ARCHITECTURE, FROM RURAL SETTLEMENT TO EXOTIC RESORTS 305
Mamdouh Mohamed Sakr

THE GRAND AND THE LITTLE TRADITION: TRACING THE LINKS OF TWO VERNACULAR BUILDING TYPES OF SRI LANKA 315
D.P.Chandrasekara

ARCHITECTURAL HERITAGE & URBAN IDENTITY BETWEEN NOSTALGIA & REALITY: THE CASE OF BAHRAIN 324
Souheil El-Masri

VERNACULAR NAUTICAL ARCHITECTURE IN TRANSITION: A CASE STUDY OF TRADITIONAL SRI LANKAN FISHING CRAFT 338
Somasiri Devendra

KEYNOTE ADDRESS

SHELTER FOR ALL: CONTINUITY AND CHANGE IN THE WORLD HOUSING

Professor Paul Oliver
Oxford Brookes University, United Kingdom

Abstract

In a period of unprecedented growth in global population, the accommodation and settlements of peoples throughout the world are being profoundly affected by many issues. These relate to the care and management of the environment, from material resources to climatic change, which will be reflected in the use of appropriate technologies, and to the preparation of future generations, With the rapid expansion of the human global population from six to nine billion predicted as occurring in the 21st Century, these have to be recognized and addressed at all levels. Issues that have to be considered are not only material but are also related to the values and practices of specific cultures, their dependencies and their inter-relationships.

While the traditional values and skills of many indigenous cultures in all continents have been maintained in their housing, the demands of living have been increasingly difficult, reflected in urban growth. Of particular significance in the past half-century has been in the siting and development of peri-urban settlements in circumstances where the advanced technologies of the cities have been major attraction for recent generations. These have meant that the material needs of expanding populations are considerable, requiring both wider recognition and positive support in many areas, including education and employment, as well as fundamentals of sites, resources and services.

During this presentation some of these aspects will be considered by comparison of the shelter traditions of indigenous cultures in Asia, Africa, Europe and the Americas, and their adaptation, growth, reception and development in diverse urban contexts.

Whatever the circumstances, and wherever the people, the need for "shelter" is universal. Fundamentally, the availability of shelter in virtually any form is sought for the protection of the people concerned. It may be shelter from storms, from hurricanes and gales that may be significant, or from exposure to the heat of the sun - and other climatic conditions. Water, warmth and nourishment are necessary for all living beings, but extremes in their provision can be harmful, even fatal. So we could well account for the creation of all forms of human shelter as being responses to the prevalent climates. But there are many other conditioning factors, such as the degree of life support that is to be gained in specific environments: whether they are deserts, prairies, mountain ranges, riversides or coasts – or any of the complex variety of landscapes and conditions in which different communities live. Fundamental to human survival and indeed, the survival of all living creatures or vegetation throughout the world, is access to fresh water. Consequently, the majority of indigenous communities live near rivers or streams.

Communities themselves may vary in their nature – whether they are clusters of people, small or large, whether they are of related families, or of diverse lines of descent, whether they are socially stratified or, more rarely, of equal importance and significance. Their social forms, from family to tribe, from caste to class, are frequently to be recognised in the shelters they construct - or that are constructed for them. Shelter is required by all people, whether they are nomads or seafarers, pastoralists or agriculturalists, living in settlements and villages, or towns and cities. Climate and environment play important parts in the factors that define the nature of such settlements, but so do materials, occupations and industry - as well as defence from other comunities seeking to obtain their resources.

Of major importance to all communities is the availability of materials with which to construct their shelters. These will frequently include resources from the land they occupy, whether these may be kinds of soil, earth or clay, or masses of rock, stone and sand. They may also be constructed from living materials such as timber logs and branches, palms, grasses, bamboo and cane. The kinds of natural materials employed in vernacular buildings are customarily those of the region that they occupy, and have probably occupied for several generations. Over time, most established communities and their cultures have learned to make the best use of the materials available, effectively massing them, achieving joints, gaining the benefit of foundations, cladding walls and roofs, eventually constructing identifiable shelter types and forms.

All the foregoing may be familiar and obvious to many conference participants, but they need to be recognised and considered when the issues of urbanisation, even globalisation, are confronted. Less widely considered are aspects of human shelter that are of a social or technological nature, except where these are functional, such as the construction of mills, or of symbolic significance related to hierarchies or religious beliefs, as in temples, mosques and churches. These social and spiritual values may be reflected in the form of the built shelters, their spatial character and relationships, their internal organisation and means of circulation, their fenestration – and much else.

While aspects of the foregoing have been the

focus of extensive research and writing, they have been subjected to increasing pressure by fundamental changes in human development and in the environment. Significant among these is the growth of populations in many parts of the world. At the conclusion of the Twentieth Century, the global human population was estimated at six billion and was forecast to expand by fifty per cent to nine billion people by the mid Twenty-First Century. Whether this implied regular Malthusian growth in some regions and extensive expansion in others is a matter of debate, but the inevitable impact of such global population growth will be increasing environmental impairment and pressure on resources.

Its effect has been significant during the past half-century, particularly with regard to urban expansion. As technologies have advanced and have become more accessible, population movement to towns and cities has continued to grow. Often where they were uninvited, incoming settlers have frequently brought with them the basic materials for the construction of their initial shelters. Claiming sites and seeking services they have identified with specific towns and cities wherein they have sought, or responded to appeals for employment. The resulting peri-urban regions have changed the identities of many of the world's major cities with expanding "squatter settlements" as they have frequently been termed.

Among the earliest of such complexes to be recognised were those that gathered in mountains surrounding Lima in Peru. Analyses of such *barriadas* made by John Turner and William Mangin in the 1960s have been informative and influential on the treatment of later clusters. Generally, structures in the squatter settlements have been self-built by squatter families from rural villages and districts, for whom the forms and spaces, the materials and their shaping and assembly, have been in accord with their vernacular traditions. Aspirations as to urban living have led to numerous compromises, inevitably, by both the former residents and administrations, regarding the building attempts of the new settlers.

Eventually, the disparate needs of these settlements led to the introduction of fully serviced sites which were of urban dimensions and character in plan; grids in which water, electricity and sanitation were installed for permitted settlers in such *barriadas* that were recognised as "progressive development." The dwelling units were built by immigrants using local stone, in addition to soil and the materials that they had brought with them.

Such settlements were constructed in other South American countries, including Brazil, where the *favelas* of Rio de Janiero were regarded as being notorious for the alleged criminality of the squatters. In some areas and in periods of repression of the "illegal immigrants", as the settlers were sometimes termed, there were restrictions on access to the *favelas* which, however, continued to grow. Of a similar character, but differing in form, structure and detail, were the self-built urban shelters in the *barrios* of Venezuela. Although anthropologists were slow to study the way of life in such settlements , Lisa Redfield Peattie lived with her architect husband in Cuidad Guayana, in the early 1960s, later having published her perceptive *The View from the Barrio*. A numb er of important studies, including those of the response to the desire for urban dwelling of the impoverished in many countries, have been made.

Settlements that have developed close to urban centres have been established in several continents, and have been subject to differing responses by both the regional authorities and by the impoverished settlers. In Africa, for example, squatters in Nairobi, Kenya who sought to remain there, were offered sites with services in compact units. Examples of how these might be integrated in self-built shelter were constructed, but the provision of such facilities attracted thousands more settlers, eventually enlarging rather than ameliorating the problem.

Different approaches have been made to the issue of rapid urbanisation, of which several studies were published, including Charles L. Choguill's *New Communities for Urban Squatters* subtitled *Lessons from the Plan That Failed in Dhaka, Bangladesh.* Among the more successful responses to such urbanisation was that of Western Turkey, where the large *Gecekondu* settlements were encouraged to engage in an exchange of facilities, such as a settlement providing spaces in which children could play, in exchange for the provision of a road network, or similar mutual agreements.

In the opinion of some architects, planners and urban designers, such examples fall outside the compass of Vernacular Architecture, which is understood by many to imply a folk tradition. Indeed it may be so, for some, but this is a debate about the approach to the subject. Irrespective of the position taken, the fundamental issue is that people of all cultures require shelter, which for many, may be houses whether self-built, or contractually constructed to the plans of professional designers.

An argument may be made that the quality of shelter in such complexes as the *favelas* of cities in Brazil is below that of vernacular traditions, or of professional designers. Depending on the examples cited, the alternative argument may also apply, as in the example of the squatter settlements of the Brazilian city of Belo Horizonte, in which the mountain slopes have been urbanised and the self-built dwellings have achieved a quality that has promoted wide support for what is now recognised as the *Bela Favela.*

There is no simple solution to the ever-present problem of global population growth, which may reach nine billion by mid-century. Nevertheless, the problem has to be confronted, with the cultivation and protection of potential building resources, and with the advanced education and training of professional architects, planners, and designers. Just as important, is the need for anthropologists who are fully informed in relation to people of all cultures, classes and capacities, as to the desire for homes. In their dwellings, as in the vernacular traditions that they have inherited, the people may play a major role in the design, organisation and construction. Supported by informed professional advice and guidance, they and their families of shared cultural identities, may live appropriately, meeting the need for appropriate Shelter for All.

References

Many have been published, including those of the Urban Innovation Abroad Series, Edited by Thomas L. Blair and produced by Plenum Publishing Corporation, New York, NY 10013.
Other specific references include:

Choguill, Charles L.(1987) New Communities for Urban Squatters.Lessons from the Plan that Failed, in Dhaka, Bangladesh. New York, Plenum Press.

Cole, Raymond J. and Lorch, Richard (eds) (2003), *Buildings, Culture & Environment ,Informing Local and Global Practices,* Oxford, U.K. Blackwell Publishing,

Mangin, William R., and Turner, John C. (1969),"Benavides and the Barriada Movement" in Oliver, 1969, pp 12-136

Peattie, Lisa Redfield, (1968) *The View from the Barrio* Ann Arbor, University of Michigan Press.

Rapoport, Amos, (1977) Human Aspects of Urban Form. Towards a Man-Environment Approach to Urban Form and Design. New York, Pergamon Press.,

Romanos, Aristidis, "Illegal Settlements in Athens" in Oliver, 1969, pp137-153

Southall, Aidan (ed) (1973) *Urban AnthropologyCross-Cultural Studies of Urbanization* London, Oxford University Press

KEYNOTE ADDRESS

CONTEMPORARY VERNACULARS: INFORMAL HOUSING PROCESSES AND VERNACULAR THEORY

Professor Peter Kellett
Senior Lecturer, Newcastle University, United Kingdom

Abstract

Despite recent critiques, vernacular architecture is still largely associated with traditional practices and forms and assumed to be found only in rural areas and historic centres. The vernacular is identified directly with the past and is believed to be under threat from contemporary values and globalisation; and unless efforts are made to preserve and rescue it, then it will disappear. These perspectives tend to be based on static notions of culture which underplay processes of cultural change and the material culture of construction. Such views are frequently clouded by romantic, visually-based preconceptions and value judgements which are similarly used to produce negative critiques of informal settlements. The views of the users rarely figure in these analyses: inhabitants of traditional environments are frequently keen to modernise, whereas inhabitants of informal settlements rarely select traditional materials and forms.

Whilst recognising the significance of vernacular traditions, this paper will argue that it is vital to acknowledge current building processes, particularly the 'popular construction' taking place on a massive scale in informal settlements throughout the developing world. These settlements are frequently assumed to be the opposite of vernacular environments, but on closer inspection we can find many parallels and similarities. Analytical frameworks which address the broad spectrum of non-professionally produced environments will be examined and their relevance demonstrated using data from a longitudinal ethnographic study of informal settlements in Latin America. The paper will explore the interface and overlap between traditional vernacular and contemporary popular processes, and will attempt to demonstrate that far from inhabiting separate universes there are many points of commonality. In short, if our definitions are appropriately framed, we may regard much contemporary construction to be a continuation of existing vernacular traditions[1].

[1] This paper draws heavily on ideas developed in Kellett (1995) and Kellett and Napier (1995). An earlier version was presented at the First International Conference on Zagros Traditional Settlements, University of Kurdistan, Sanandaj, Iran, April 2008.

Re-thinking Informal Housing

During the 1960s a reassessment began led by the anthropologist William Mangin and architect John Turner. They inverted established thinking to suggest that far from being a problem such settlements could be the solution. Turner (1968; 1972, 1976) reinterpreted the simple shacks in the squatter settlements as the first stage in an incremental process of construction. Rather than being passive victims of circumstance he believed the poor demonstrated great energy and intelligence in the use of resources and in evaluating priorities. He describes the dwellers as rational and effective articulators of their own needs and priorities, and able to weigh up the relative merits of different strategies: short term discomfort and insecurity for longer term benefits such as independence, space and income generating possibilities. He articulated the idea of housing as essentially an activity or process: 'housing as a verb' rather than as merely a physical object (house). This emphasis on the underlying processes is fundamental because it changes the focus away from the visual and physical characteristics, i.e. what a house 'is', towards what a house 'does' for its occupants. In other words, away from product towards process.

Such a radical re-think provoked serious challenge from those who believed this approach was rationalising poverty and romanticising substandard housing conditions. They rejected the individualisation of problems which should be the responsibility of the state; and depoliticised 'the housing problem' to effectively maintain the status quo. However the scale of the problem required action. The 1976 UNCHS Habitat conference raised the profile of self-help which then became a central plank in many national housing policies and international agencies.

Shelter or Architecture?

But institutional and state support of informal efforts failed to materialise on any significant scale. Hence more urban dwellers than ever are responsible for creating their own dwelling environments within a wide range of economic and cultural circumstances. However despite their immense scale the resulting built environments have been largely ignored and few have studied the built forms and spaces as integral components in the housing equation. Interestingly some who did, dismissed the positive significance of their findings because of the structural constraints within which the dwellings were created, and of the unacceptability of promoting approaches or policies which appeared to condone such conditions.

For example in a study of popular settlements in Colombia, Viviescas (1985:45) found *"considerable expressive . potential"* but believes poverty inhibits meaningful impact on the built environment other than to produce the barest of shelter and *"a penurious kitsch."* This is highly questionable as apparently equivalent constraints of rigid social structures, climate and limited resources have been identified as key formative factors in traditional vernacular environments which are acknowledged to be both expressive and supportive. Why have informal

urban environments been interpreted so differently compared with traditional vernacular settlements?

Vernacular: from Visual Bias to Holistic Approaches

Studies of traditional vernacular environments, especially those by architects, have frequently produced romantic and naive analyses by concentrating on visual appearances independently of social structures and economic conditions. This focus on the visual also meant that few such scholars made more than a passing reference to informal settlements, precisely because they did not appear to share any of the positive formal characteristics which were so 'self-evidently' an inherent part of traditional vernacular environments. This superficial approach was epitomised in the pioneering work of Rudofsky (1964), but is still common despite several sharp critiques (Highlands, 1990:39; Oliver, 1990:158; Turan, 1990).

A group of theorists have proposed analytical frameworks designed to redress the previous imbalances and partial interpretations surrounding vernacular environments (Lawrence, 1987, 1990; Rapoport, 1988; Stea and Turan, 1990, 1993; Oliver, 1990, 2006). Such frameworks are more holistic and comprehensive in nature and are seeking to accommodate process, product and use characteristics, as well as address issues of constraint and context. The broader scope and greater complexity of such frameworks can more naturally include informal settlements as part of the wider spectrum of non-professional environments, but to date have been generally applied only in traditional environments. This papers will use such approaches as analytical tools to restore a view of the built form of informal settlements whilst simultaneously accommodating the ideological and economic contexts in which such environments are produced; in other words to examine the built form alongside process aspects.

Rapoport: Constraint and Choice

With a background in vernacular studies and people-environment relations Rapoport (1977; 1988) has also turned his attention to informal settlements. He believes such settlements are significant from an architectural perspective, and argues that *"if vernacular design is defined properly, spontaneous settlements can be shown to be its closest contemporary equivalent"* (Rapoport, 1988:53). He then asks a question which raises several issues pertinent to this discussion:

"How is it that people who are often illiterate, with very limited resources and power, and hence operating under stringent constraints-economic, informational, political, and so on - are able to produce settings and environments that I at least judge to be vastly superior, in terms of cultural supportiveness and perceptual quality, than designers working in the same places? These environments are frequently even of higher quality than those of designers working in much more developed and wealthier places. The environments of spontaneous settlements are frequently comparable in

quality to those of traditional ernacular, many of which professional designers admire" (Rapoport, 1988:72).

He substantiates his claims with only limited and partial evidence, but although he appears to overstate his case, it is helpful in that it challenges the predominant view and encourages us to test the validity of his assertions.

Rapoport is interested in the 'design quality' of spontaneous settlements and in the way that they respond to the aesthetic and cultural needs of their inhabitants (Rapoport, 1988:51). He argues that such environments are the outcome of numerous individual decisions taken over a long period of time, but which collectively add up to 'recognisable wholes'. This is because there must *"... be an implicit model or cognitive scheme shared by all the individuals making apparently independent decisions"* (52). In order to describe these qualities he identifies a large number of both process and product characteristics which may be present to various degrees in particular environments (see Table 1).

This approach not only provides a tool for analysing a specific environment, but also to make comparisons between different situations, including other types of vernacular as well as professionally produced environments. He concludes that if this we would find that informal settlements are

"... closer to traditional vernacular than to any other environment and farthest from professionally designed or 'high-style' environments" (Rapoport, 1988:55).

Table 1: Process and Product Characteristics of Spontaneous Settlements

Process Characteristics	*Product Characteristics*
1. Identity of designers	1. Degree of cultural and place specificity
2. Intentions of designers	2. Specific models, plan forms, and morphologies
3. Anonymity of designers	3. Nature of relationships and underlying rules
4. Reliance on a model with variations	4. Presence of specific formal qualities
5. Presence of a single model	5. Use of specific materials, textures, and colours
6. Extent of sharing of model	6. Nature of relation to landscape
7. Nature of underlying schemata	7. Effectiveness of response to climate
8. Consistency of use of a single model for different parts of the house-settlement system	8. Efficiency in use of resources
9. Relationships among models used in different environments	9. Complexity due to place specificity
10. Specifics of the choice model of design	10. Complexity of a single model with variations
11. Congruence of choice model with ideals of users	11. Clarity of the environment: order expressed by the model
12. Degree of congruence between environment and culture-life style	12. Open-endedness allowing changes
13. Use of implicit vs. explicit design criteria	13. Presence of 'stable equilibrium' vs. the 'unstable equilibrium' of high style
14. Degree of self-consciousness of the design process	14. Complexity due to variations over time
15. Degree of constancy vs. change of basic model	15. Open-endedness regarding activities
16. Form of temporal change	16. Degree of multi-sensory qualities of environment
17. Extent of sharing of knowledge about design and construction	17. Degree of differentiation of settings
	18. Effectiveness as setting for life style and activity systems
	19. Ability of settings to communicate effectively to users
	20. Relative importance of semi-fixed features vs. fixed feature elements.

Source: Rapoport (1988:54)

Table 2 Comparison of Terms and Concepts

Turner	Alexander	Rapoport	Stea and Turan
housing by people	people-designed	identity of designers	mode of production
	egoless	anonymity of designers	
housing as a verb	timeless way	process	placemaking
	pattern language	shared model	underlying rules of order
	patterns	settings	
close fit	comfortable, exact	congruence of choice model with ideals of users	
	wholeness	coherence	

Shared Models and Patterns

Several of the process characteristics listed by Rapoport relate to the presence of shared models. He believes that such models (partially) account for some of the visual coherence which he notes, and where absent can be explained by the state of flux between *"... traditional cultural core elements and newly introduced elements highly desired by builders and users."* Such elements include forms, materials and services (Rapoport, 1988:52). There are many similarities between this and the work of Christopher Alexander who identified 'timeless ways of building' using 'pattern languages' (Alexander, 1977, 1979). Such shared patterns are able to provide the underlying basis for observed visual coherence with timeless 'indescribable' qualities which occurs only if the patterns are 'alive'. In common with both Rapoport and Turner he recognises the importance of process at the centre of housing: *"... life cannot be made, but only generated by a process"* (Alexander, 1979:174). Similarly he emphasises the role of people; compare for example: *"The power to make buildings beautiful lies in each of us already"* (Alexander, 1979:14) with: *"... the most plentiful and renewable resources... are possessed by people themselves as users"* (Turner, 1982:99).

Lawrence: Reciprocal Relations

In his empirical studies of domestic architecture, Lawrence (1987) lists the defining qualities of domestic vernacular architecture: identifiable as a building type (sharing qualities with others); specific to a period and to place (e.g. building materials); traditional design and construction rather than 'academically' inspired; and house the normal activities of ordinary people. This definition would clearly qualify many informal settlements as vernacular building (except traditional inspiration in some cases). However, informal settlements are clearly not academically inspired, and so fall more towards the vernacular type, a conclusion he shares with Rapoport (1988).

Lawrence (1987:32) proposes a "more

comprehensive approach that accounts for the reciprocal relations between a range of contextually defined factors which are implicated in the design and use of the built environment." He groups the factors into three 'dimensions': 1) the physical or material factors, 2) societal and cultural factors and 3) individual or human factors, and urges us to study not only the form and meaning of dwellings, but also how form is used by people at different stages in their life cycle and throughout the history of the building. In addition to looking at macro-scale (economic, political, social and cultural influences), he collects oral and written biographical histories about the detailed use and design of the house at the micro-scale. Lawrence's approach is useful as a checklist of possible influencing factors, but the way he addresses the subject and the sources of evidence are potentially more useful than the framework itself. His approach is essentially an historical, temporal perspective, and is both evolutionary and typological, in that he describes the development of dwelling types and their social and geographical origins. His approach would appear better suited to the study of types in a particular region, and less useful for broader comparative analysis.

Oliver: Knowledge and Specialisation

Oliver (1987, 1990) adopts an approach similar to Rapoport but with greater emphasis on the evolutionary development of the house building process. Where Rapoport talks about vernacular and professional environments as opposites, Oliver uses the words tribal, folk and institutional (amongst others), and links them together as stages in a progression towards the ever increasing protection of knowledge (i.e. specialisation). He addresses vernacular architecture in terms of the sharing, or otherwise, of knowledge, or 'know-how', or 'technology' in the true sense of the word. Such knowledge is possessed by people about their own local conditions of climate, topography, natural hazard, materials, tools and methods. His conjecture is that in most traditional (especially tribal) societies most, if not all, knowledge about building is part of the common domain.

Oliver includes informal settlements in his evolutionary framework, but places them at the extreme end of a scale of knowledge specialisation, as the most unspecialised type. However there is considerable evidence of the use of skilled labour and small-scale contractors in informal settlements (Gough, 1992; Kellett, 1995, 2005). Where 'building' knowledge is rarely distinguished from 'design' knowledge this implies that knowledge is indeed concentrated and echoes a clear if flexible division of labour.

Oliver regards informal settlements as "processes of emergent vernacular types" which will be refined over time. He argues that vernacular architecture should not be imitated, but recognised for its own merits and conserved where appropriate. It is important to understand vernacular, but not to overlook its defects. He suggests that local knowledge has a major part to play in addressing the shortage of urban housing as the materials, skills and financial expenditure *"necessary to meet it by 'modern' means"* do not exist (Oliver,

1990:160). Like Turner, he implies that the builders of informal settlements should be part of the answer to urban housing problems.

Stea and Turan: Modes of Production

Stea and Turan's (1990) focus on 'placemaking' is relevant to informal settlement formation as their concern is with the *process* and *products* of placemaking activity, and the *use* of places (or the "consumption of built form"), which are similar to the analysis used by Lawrence and Rapoport. They define placemaking *"...as a form of* ***economic*** *activity, in its broadest sense, combining social, cultural, political, and material aspects of a society's* ***mode of production*** *[which is] a specific, historically occurring set of social relations through which labour is deployed to wrest energy from nature by means of tools, skills, organisation, and knowledge."*(110, 13).

Using mode of production as a basis for analysis, they aim to *"improve our understanding of the domestic architecture and settlement patterns - 'vernacular' form - of traditional and transitional societies"* (Stea and Turan, 1990:121). They believe that (17). The clearly transitional condition of many informally housed societies makes this a particularly apt tool for analysis.

They discuss informal settlements where spaces appear disordered and offer two explanations:

firstly, the observer may not understand the *"underlying rules of order", thus " the apparent 'messiness' surrounding a squatter dwelling ... may actually be a 'stockpiling' system for building materials."* Secondly, apparent spatial 'disorder' may *"...result from a traumatic transition from one mode of production to another"* (Stea and Turan, 1990:117). This is similar to Oliver's view of informal settlements as a kind of nascent vernacular where tradition eventually emerges over time. They acknowledge that the destruction of the 'place/activity dialectic' can occur, or as Rapoport (1985:258) puts it, that *"..in some cases constraints may be more important than choice."* This implies that these frameworks can address the situations where imposed structural conditions appear to subsume personal attempts at participation.

Stea and Turan (1990:114) refer to context as the 'conditions of existence': *"A society's material conditions and its cultural conditions, taken together, are its conditions of existence".* These break down into material conditions (climate, siting, resources) and cultural conditions (kinship, social and labour relations). Conditions of existence are accompanied by conditions of change which come from outside of society. The conditions found within a society which shape the response to external forces are referred to as the 'basis of change.'

The approach of Stea and Turan is similar to Rapoport in that they present ideals for comparison along a continuum. Where Rapoport uses the notion of societies as typically vernacular and typically professional, Stea and Turan start from the "primitive communist mode of production" where people truly participate in the making of place, and trace a development (similar to Oliver's evolutionary process) through increasing 'stratification' of society, and 'mystification', 'professionalisation' and 'commodification' of

the placemaking process, until they reach the totally commodified environment that we have in the 'Capitalist West' where places are received by exchange rather than made and people are products of the environment rather than vice versa (Stea and Turan, 1990:115).

Within these differing modes of production they compare 'shelter' with 'property' as the "basic relationships in domestic architecture": use value is contrasted with exchange value; and social identity with individual/family identity. By presenting their ideas in terms of dialectics they allow the description of tendencies in settlements rather than forcing categories on cases, avoid generalisations and simplifications, and anticipate the likelihood of change or transition over time.

Comparing Theorists: Constraint and Choice

These frameworks have many common elements. The analysis of vernacular environments has moved away from viewing only the artefact, and focused attention also onto the people who shape, use and alter the form (and in turn are influenced by it). These frameworks all propose typologies which rely for their grouping or categorisation of examples on the kinds of societies which create the environments, or on the way labour is organised.

In early vernacular studies the artefact was first viewed and then conclusions about the people were drawn from this, here we are approaching from the opposite direction. The frameworks are now centred on comparisons of the societies in which form arises. The importance of the form itself has remained an element of vernacular frameworks, and it is this strength that informal settlement studies can recover if viewed properly as a type of vernacular. These frameworks offer the tools for handling complexity in societies and their range of built environments.

In traditional vernacular environments strong, largely natural constraints are believed to play a positive role. For example rigid social structures, climate and limited resources have been identified as key formative factors in environments which are acknowledged to be both expressive and supportive. Why have urban informal environments been interpreted so differently? Informal settlements are usually located in urban areas which are defined and controlled by dominant groups and therefore the key constraints are 'artificial' i.e. institutional, and man-made, and the resulting conditions can therefore be attributed (at least in part) to intentional physical and social marginalisation, and consequently human culpability for the conditions. In contrast to the stable context and slow, evolutionary pace of change in traditional vernacular environments, informal settlements by definition have emerged and continue to expand in conditions of considerable instability and uncertain, rapid change. To use Stea and Turan's terms, the conditions of existence (as well as external conditions of change) in which such settlements are formed rarely remain static. This provides a further challenge in accommodating such dimensions within a classification framework.

Rapoport (1985:258) identifies the types of potential constraint: resource constraints, market constraints, ability to cope,

willingness and ability to move, knowledge and information and finally external constraints. Although in a particular situation certain constraints may be severe (e.g. resources) others may be weak, and as such facilitate the exercise of choice. He identifies the weakness (or absence) of official regulations, planning controls and building codes as well as formal professional ideologies as typical of informal environments (Rapoport, 1988:52). Such weak official constraints and restraints may indeed open up fruitful opportunities for expression.

From Informal to Formal

Informal settlements achieve their distinctive (if varied) identity by reference and contrast with the formal, institutional and legal parts of city. Turner (1972) proposed a typology of settlements in terms of physical development and degree of security of tenure, which included fourteen stages ranging from transient and tentative to complete and legal. He believed that security of tenure was crucial to unlock the creative energy and resources of informal dwellers, and in his case studies from Peru showed how over a period of years, dwellings and settlements consolidated when such security was achievable. What is fascinating is that fully consolidated and legalised settlements can become virtually indistinguishable from conventional formal residential neighbourhoods, despite contrasting trajectories. Informal settlements have traditionally been defined in negative terms in relationship to formal parts of the city: absence of legality, substandard in terms of space and infrastructure, absence of permanent materials, etc. Effectively informal settlements have achieved their identity through what they are not, or do not have, in comparison with the formal. This is illuminating, particular as it is clear that in favourable circumstances, the consolidation processes may be regarded as a gradual movement away from what are regarded as informal characteristics towards increasing formality. However such an interpretation could lead to a continuance of the invisibility of the built forms of the earlier stages of settlement and consolidation, and to a denial of the valid architectural expression which can undeniably exist.

Drawing on the work of several theorists, this paper has attempted to demonstrate why and how we must revise our view of informal settlements, and attach appropriate importance to the study of the built environment. The inclusion of the dwelling object in this analysis allows a fuller picture of the decision-making process of the inhabitants with the full scope of possible influences which may impact upon the shaping of that built form. Through such an approach it is possible to identify multiple points of commonality to show how much contemporary construction is effectively a continuation of existing vernacular processes.

References

Alexander, C. et al. (1977) *A Pattern Language*, New York: Oxford University Press.

Alexander, C. (1979) *The Timeless Way of Building*, New York: Oxford University Press.

Berner, E. (2001) 'Learning from Informal Markets: Innovative Approaches to Land and Housing Provision', *Development in Practice*, 11(2-3), 292-307.

Gough, K. (1992) 'From Bamboo to Bricks: Self-Help Housing and the Building Materials Industry in Urban Colombia', *PhD thesis*, University College London.

Highlands, D. (1990) 'What's Indigenous? An Essay on Building' in Turan, M. (ed.) *Vernacular Architecture: Paradigms of Environmental Response*, Aldershot: Avebury, 31-62.

Hernandez, F., Kellett, P. and Allen, L.K. (2010) Rethinking the Informal City: Critical Perspectives from Latin America, New York, Oxford: Berghahn.

Kellett, P. (1995) 'Constructing Home: Production and Consumption of Popular Housing in Northern Colombia', *PhD thesis*, University of Newcastle upon Tyne.

Kellett, P. 2005. 'The Construction of Home in the Informal City', in F. Hernández, M. Millington, and I. Borden (eds.), *Transculturation: Cities, Space and Architecture in Latin America*. Amsterdam and New York: Rodopi, 22-42.

Kellett, P. and Napier, M. (1995) 'Squatter Architecture: a Critical Examination of Vernacular Theory and Spontaneous Settlement with Reference to South America and South Africa' *Traditional Dwellings and Settlements Review*, Berkeley: University of California, Vol. 6, No.2, May 1995, 7-24.

Lawrence, R.J. (1987) *Housing, Dwellings and Homes: Design Theory*, Research and Practice, Chichester: Wiley.

Lawrence, R.J. (1990) 'Learning from Colonial Houses and Lifestyles', in Turan, M. (ed.), *Vernacular Architecture: Paradigms of Environmental Response*. Aldershot: Avebury, 219-257.

Lewis, O. (1965) *Los Hijos de Sanchez; Autobiografia de una Familia Mexicana*. Ciudad de Mexico: Editorial Joaquin Mortiz.

Oliver, P. (1987) *Dwellings: the House across the World*. Oxford: Phaidon Press

Oliver, P. (1990) 'Vernacular Know-How' in Turan, M. (ed.), *Vernacular Architecture: Paradigms of Environmental Response*. Aldershot: Avebury, 146-160.

Oliver, P. 2006. *Built to Meet Needs: Cultural Issues in Vernacular Architecture*. Oxford: Elselvier.

Rapoport, A. (1977) *Human Aspects of Urban Form*, Oxford: Pergamon.

Rapoport, A. (1985) "Thinking about Home Environments: A Conceptual Framework." in Altman, I and Werner, C.M. (eds.), *Home Environments: Human Behaviour and Environment*, Chapter 11, 255-286. New York: Plenum Press.

Rapoport, A. 1988. 'Spontaneous Settlements as Vernacular Design', in C.V. Patton (ed.), *Spontaneous Shelter: International Perspectives and Prospects*. Philadelphia: Temple University Press, 51-77.

Rudofsky, B. (1964) *Architecture without Architects: a Short Introduction to Non-Pedigreed Architecture*, London: Academy Editions.

Stea, D. and Turan, M. (1990) 'A Statement on Placemaking' in Turan, M. (ed.), *Vernacular Architecture: Paradigms of Environmental Response*, Aldershot: Avebury, 102-121.

Stea, D and Turan, M. (1993) *Placemaking: Production of Built Environments in Two Cultures.* Aldershot: Avebury.

Turner, J.F.C. (1968) 'The Squatter Settlement: an Architecture that Works' *Architectural Design*, Vol. 38, No. 8, 355-360.

Turner, J.F.C. (1972) 'Housing as a Verb' in Turner, J.F.C. and Fitcher, R. (eds.) *Freedom to Build: Dweller Control of the Housing Process*, London: Collier-Macmillan, 148-175.

Turner, J.F.C. (1976) Housing by People; *Towards Autonomy in Building Environments.* London: Marion Boyars.

Turner, J.F.C. (1982) 'Issues in Self-Help and Self-Managed Housing' in Ward, P. (ed.) *Self-Help Housing: A Critique*, London: Mansell, 99-113.

Viviescas, F. (1985) 'Myth of Self-Build as Popular Architecture: the Case of Low-Income Housing in Colombian Cities' *Open House International*, Vol.10, No.4, 44-48.

KEYNOTE ADDRESS

Dr. Roland Silva
Chancellor, University of Moratuwa, Sri Lanka.

In an academic discourse as this, our first obligation is to establish our definitions right. The key to "Vernacular Settlements" is to understand the accepted meaning of (a) Vernacular and (b) Settlement.

The term **Vernacular** according to the Concise Oxford Dictionary means: "*1. Of language, idiom, word of one's native country, native, indigenous, not of foreign origin or of learned formation;* - **architecture** *(concerned with ordinary buildings, not cathedrals etc.) 2. The language or dialect of the country; language of a particular class or group; homely speech, etc.*" (1) The same term **Vernacular** according to The New Oxford Dictionary of English states, 1. The language or dialect spoken by the ordinary people in a particular country or region: 2. Architecture concerned with domestic and functional rather than monumental buildings. The origin is from the early 17th century from Latin *vernaculus* – 'domestic, native' (from *verna* 'home-born slave'). The identical word Vernacular is interpreted in The Shorter Oxford Dictionary. In the same breath, Settlement means: "*…… (Law) conveyance of or creation of estate(s) in, property to make provision for one or more beneficiaries differing from what would result from simple conveyance or statutory inheritance (marriage – usu. Made at the time of marriage and in favour of wife, her children, etc,.) ; group of social workers from a college etc. who establish themselves in poor or crowded district to provide education, recreation, etc….*" (2) There is yet another source of possible information, namely, through the Scientific Committee of Vernacular Heritage of the International Council of Monuments and Sites. The Charter on the Built Heritage as ratified in Mexico in 1999 has number of relevant sections that read as follows:

(a) " Examples of the vernacular may be recognized by: a manner of buildings shared by the community; a recognizable local and or regional character responsive to the environment; coherence of style, form and appearance, or the use of traditionally established building types; traditional expertise in design and construction which is transmitted informally; an effective response to functional, social and environmental constrains; the effective application of traditional construction systems and crafts.

(b) The appreciation and successful protection of the vernacular heritage depend on the involvement and support of the community, continuing use and maintenance.

(c) Government and responsible authorities must recognize the right of all communities to maintain their living

traditions, to protect these through all available legislative, administrative and financial means and to hand them down to future generations" (M. Petzet, International Principles of Preservation, *Monuments and Sites XX, ICOMOS*, Paris, p.86)

Ladies and Gentlemen, I wonder if anyone is wise consequent to the much hailed definitions of the Oxford Dictionaries. You will see from the above definitions as documented in the three versions of the Oxford Dictionary, that neither the words "Vernacular" nor "Settlement", do not lead us to any further interpretation towards a meaning indicating Architecture nor Town Planning. Hence, we have to follow a path conjecturing an instant thought that will enable us to abstract a definition out of the known instances of "Vernacular Settlements" as best guided by the well drafted, "Charter on the Built Vernacular Heritage" of ICOMOS by abstracting the essence from known examples such as:

(a) Would people living on 'stilt-houses' constitute of a brand of vernacular erection?

(b) Would the 'igloos' of the Eskimos constitute a vernacular expression?

(c) Would the 'boat-houses' of the river people constitute a vernacular community?

(d) Would the 'potable-house' of the gypsies' clans constitute a vernacular camp?

(e) Would the 'tree-top' houses of the chena cultivators constitute a vernacular cluster?

(f) Would the 'wigwam' shelters of the Red Indians constitute a vernacular expression?

(g) Would the 'skin-tents' of the Bedouins constitute a vernacular settlement?

(h) Would the 'leaf-huts' of the Veddhas constitute a vernacular expression?

(i) Would the 'caverns' of the Vietnam Freedom Fighters amount to a vernacular erection?

(j) Would the 'catacombs' of the early Christian Martyrs constitute a vernacular structure?

People living on 'stilt-houses' in the flood plane of Rivers

This is a common site along the banks of the Irravadi in Burma or beside the Mi Kong in Vietnam or beside the rivers in Thailand or Bangladesh where the water levels fluctuate without notice either due to flooding up-stream or due to the tides in the delta regions. Even pre historic remains of these stilts have being found in the lakes of Switzerland (Banister Fletcher, 1950, p.1). Such houses are made of the simplest of simple materials often found in the vicinity of rivers such as bamboo or some timbers that would stand up to the wet or dryness of the surroundings. The roofs are generally thatched with a type of palm leaf which too need replacement every two or three years. If any permanent elements are found, these are more of a recent date. The mode of transport is generally by water and so each house has a mooring post. The occupation of such people is generally fishing or being engaged in some trade connected with these encampments.

There must always be the all purpose grocery shop that has house hold goods to children's toys, and even lengths of cloths for the community.

The igloos of the Eskimo bordering the North Pole

This is a site common to the Arctic Circle in the regions of North America and Greenland and even across Alaska to some part of eastern Siberia. The row materials for their houses is drift wood covered with snow or frozen water in the form of ice which is shaped out and made in to a dome with a narrow tunneled opening to enter and a sky light to the sky with a clear block of ice. A cluster of these would undoubtedly be a living community used mainly in the winter. The igloos are considered as common property and the first occupants of these continue to use them as their own during the cold months. Transport is by sledges drawn by dogs over the glaziers or the frozen surfaces. The main occupation of this community would be fishing which in itself is a specialized craft. Although this row fish eating community is considered to be a dying lot, many conservation groups are eager to sustain them as far as is possible (Eskimos, Encyclopedia Britanica, Vol.8, p.708-710). The film, Nanuk of the North by Robert Flerty is a classic document made in the first half of the twentieth century for a fir company.

'Boat-houses' of the River people

This type of boat people live in boats floating in the water mainly due to the scarcity of land around crowded river banks or beside lakes or lagoons where buildable ground is scares. Kashmir, Venice, Bruges and the large Inle Lake in the mountains of Burma are places that come to mind. Here people eat, work and live in boats. The boat houses are moored to the banks and in the developed establishment the central services like fresh water, electricity and drainage are also provided by the township the 'floating market' in Bangkok, or the 'flower market' in Amsterdam are all of such a tradition.

'Potable-houses' of the Gypsies

The Gypsies are thought to have originated in India and they are found scattered throughout the world. However, there is a concentration still in the south-east Europe. They are by nature are a wondering tribe with never a fixed aboard. In Sri Lanka they move from place to place with their donkeys and pitch their tents of poles and palmara palm leafs on some vacant land near a supply of water and would stay there for four or five weeks before they leave for another site. The main task of the men would be to attend to odd jobs while the women folk would go around the village relating stories, fortune-telling and entertaining kids with monkeys and

performing dogs after which they would return to the camp to prepare the one meal of the day for the entire clan. In the colder countries, the Gypsies carry out parallel practices, but would live in make-shift accommodations at least in the winter and in tents during the summer. The Encyclopedia Britannica records this practice thus, "Whatever their habitation, it is always in a sheltered spot, a sand pit, a quarry, a valley or a wood away from wind. British, French and German Gypsies build one-room brick cottages in sand pits or on waste land. Further east and in the Balkans their dwellings are of wattle and daub or other crude materials. It is mainly the wanderers, despised by the settled Gypsies that live in tents.... Coastal wanderers of Spain sleep in the sandstone caves." (Encyclopedia Britannica, London, 1954, vol.11, p.44).

'Tree-top' houses if the Chena Cultivators

Tree-top houses in the arid zones of Sri Lanka are a common sight even today. If one were to drive past Habarana or Maho township along the Anuradhapura road within a couple of miles one begins to observe the tree-top houses in the chena cultivations on either side of the road. In more recent times the villages seem to have made this a type of tourist curiosity and have erected such huts even alongside the highway. These enterprising youth have gone even one step further and have made cutouts of fathers, mothers and children and placed these in appropriate positions on the ground, halfway up the ladder or at the top, inside these watch huts, ready to ring the self made to drive away the elephants from the chena cultivation. The tree-top house is a modest platform framed with jungle timber and cross woven with smaller twigs whish are tied to the structural members with wild creepers. Upon this frame fitted on a series of strong branches of a selected tree, the roof timbers are fixed in the form of an inverted 'V'. With the rafters and the laths in place the roof is thatched with woven coconut palm leaves. The floor is the n divided in to two spaces with a wall of sticks and cadjan, the floor is covered with clay and moistened for compaction. Such a floor is even good to light a fire for cooking a simple meal. The mother house is on higher ground with coconut palm around, upon which is the dwelling that is well established on an elevated plinth of earth. The house sits upon this and is of wattle and daub walls with firm corner posts of strong timber. The coconut rafters rest on these beams which in turn retains a slope for the rain water. The laths consists of strips of arecanut bark, upon which rests the coconut leaf cladding. The houses of the children are built to the same design in the same compound and this practice continues to the next generation as well. The paddy store and the cattle used for cultivation and their sheds all surround the main dwelling. A good example of this is at Maha...

'Wigwam' Shelters of the Red Indians

A brief but comprehensive description is given in the Encyclopedia Britannica thus: "Wigwam, a term loosely adapted as a general name for the houses of North American Indians.

It is, however, strictly applied to a particular dome-shaped or conical hut made of poles lashed together at the tops and covered with bark. The skin tents of many of the Plains Indians are called *tepees*. The word "wigwam" represents the Europeanized or Anglicized form of the Algonkian *wekou-om-ut*, ie., "in this(their)house." (Encyclopedia Britannica, London, 1954, vol.16, p.594).

'Skin-tents' of the Bedouins

The Bedouins are of nomadic origin and are mainly Arabs using sheepskin tents (Banister Fletcher, 1050, pp.1-2 fig. J). The Bedouins (Bedawins) of the desert are among the most familiar of all pastoral nomads, and their nomadism has no known beginning (Encyclopedia Britannica, London, 1954, vol. 23, p. 481). The nomads, be it the Bedouins or any other, were respected and feared for their knowledge of poison and for the sorcery in which they are thought to be the masters. This attitude points to the probability that they were the original owners of the respective country. It is also know that in times of drought and food shortage these pastoral nomads were compelled to raid their agricultural neighbors.

'Leaf-huts' of the Veddhas

The Veddha community in Sri Lanka as was known to Seligmann at the turn of the twentieth century congregated in defined groups of five, ten or more families. The area of their habitation was generally confined to the plane east of the central mountains and between the latitudes of Trincomale and Panama. It was a transitionary community moving from hunting to a chena agricultural livelihood. The geographical layout of the region was ideal in the earlier livelihood of this community as the natural rock shelters were a ready shelter to these hunter-gatherers (Seligmann, 1911, p.84, pl. XVII, fig. I and II). It is in their second phase of occupation that this community integrates in to this vernacular style of a settled life consequent to their transformation to chena agriculture. With the concept of chena cultivation whereby a selected portion of forest is burnt down and with the first showers of the monsoon the seeds of maize or kurakkan *(eleusine coracana)* are shown on this rich fertile soil (Seligmann, 1911, p.42). The fact that the new agriculture state of life has now compelled the community to care and watch over their crops, the Veddha people, consequent to their new way of life has to consider a type of more permanent habitat located amidst the plantation. The jungle timber gathered from the forest prior to setting it on fire provided the materials for the dwellings. The thatching of the roofs was dried grass cut from the patna planes (Seligmann, 1911, p. 16, pl. II). The walls were of wattle-and daub and the round was mud plaster. The many houses of the families constituted this vernacular village surrounded by the chena cultivation (Seligmann, 1911, p.42, pl. XII, fig. I and p.48, pl. XV, fig. I)

Earth-Caverns of the Vietnam Freedom Fighters

During the 1960's and the 1970's the Vietnamese were at war with the American. During this phase of rebellion, the strategy of the Vietnam people was to hide in underground caverns as still preserved and displayed near Ho Chi Ming city. This complex near old Saigon was capable of accommodating nearly 35 000 troops at different physical levels of occupation. The exceptional way of ventilating this living complex was to inject fresh air from the outside through camouflaged inlets established like termite nests sticking out of the ground looking as natural as possible. The site selected for such encampments was high round with a soil consistency, namely a type of ground that could be conveniently carved in to without the earth caving in as would be in a sandy terrain. Entrances and exits were possible through a hole in the turf that was well disguised. Fresh water for drinking was provided by each individual and ablution and such wants of nature were generally attended to under the darkness of the nights. Even the cultivation of paddy and such wants of food and agriculture were activities conducted at night. Even the tunneling of the underground passages was sensitively planed so that the small made Vietnamese could negotiate these passageways and not the bigger made American soldiers. There were many such underground encampments established and scattered in the areas of war, until the extended war menace was over and the Americans had to concede defeat. Thus the concept of 'vernacular Settlements' is not a phenomenon exclusively of the past, but a living reality adoptable to situations of the future as well.

Catacombs of the early Christian Martyrs

The concept of catacombs extended to Etruscan times when these were excavated into hillside and usually laid out to a house plan and meant as a family burial ground. In later times the underground layout expanded horizontally to diverse designs and even to many tiers. The catacomb concept spread from Italy southwards even to Sicily and across the Mediterranean to places like Carthage in North Africa. This burial pattern and the underground cemetery idea serve the early Christian as a refuge from persecution as the then prevailing Roman Law disallowed any person to be taken as a prisoner from any burial ground. Hence, the catacombs became the places of religious practice as well for the early Christians. Thus it will be seen that a type of 'vernacular settlement' for this community of early Christians became established consequent to a legal provision and strongly a concept stemming off a royal practice of family burials.

What therefore is Vernacular?

In the absence of dictionary definitions that lends a pragmatic need to a working meaning of VERNACULAR, one needs to rely on

examples through usage. Accordingly, we have listed a selection of examples in their geographical spread as well as those in a historical context. At the same time the Scientific Committee of the International Council on Monuments and Sites titles "The Built Vernacular Heritage", that retains objectives closely comparable to the title of our seminar subject, spells out its own variant, as stated previously, thus:

"Examples of the vernacular may be recognized by:

(1) a manner of building shared by the community;

(2) a recognizable local or regional character responsive to the environment; coherence of style, form and appearance

(3) or the use of traditionally established building types; traditional expertise in design and construction which is transmitted informally;

(4) an effective response to functional, social and environmental constrains;

(5) the effective application of traditional constructions systems and crafts"

Hence, it seems prudent to accept such a definition that has been academically evolved and internationally endorsed.

What therefore is a Settlement?

In this regard there is no dispute but accepting a simplification of the Oxford Dictionary Definition, namely:

"..... creation of estate(s) in, property to make provision for one or more beneficiaries differing from

(1) what would result from simple conveyance or statutory inheritance...

(2) group of social workers from college etc. who establish themselves in poor or crowded district to provide education, recreation etc...

(3) for the inhabitance; newly settled tract of country, colony;....

etc..."

Evaluating the 'Settlements' Listed above as being 'Vernacular'

(a) People living on 'stilt-houses' in the flood plane of Rivers

The stilt houses of the Thai people are seen mainly on the river banks adjacent to cities like Bangkok. The population explosion in these urban neighborhoods is so vast and the attractions of these cities in terms of work availability forces the urban spill to continue to live in whatever space that the city can provide. An area that is frequently exploited are the river banks which is public property and the sympathies of the owning authorities are readily exploited. At the same time the settlers have to be sensitive to the water level that is affected by the tide or flood level. As such these settlers are prepared for these

Figure 1: Stilt Houses, Thailand

Figure 2: Stilt Houses, Burma

eventualities by retaining adequate boats for a fast getaway as well as for use on their regular movements for the daily supplies. The basics in terms of their shelters are the timber piles and the beams to establish a living platform. Thereafter the pillars of the dwelling place needs to be extended, upon which the roof rests. Finally, the pillars are joined with wooden planks to constitute the living, cooking and sleeping areas. The roof is generally covered with corrugated metal sheeting. Often the flowing water of the rivers had to look after the sanitary needs of the settlers. The first illustration from Thailand sets out this vernacular set up substantially. On the other hand the second illustration from Myanmar where the settlement is on a lake sets out a parallel vernacular establishment on still waters that could also rise and fall with the rains. The arrangements here are undoubtedly the same except that the roof cover is of wild grass or hay.

Figure 3: Iglo

(b) The igloos of the Eskimo bordering the North Pole

The illustration well records the scene of an Eskimo community on a rare sunny day in the Arctic Circle in winter. The igloo in the foreground is nearly complete and a resident seem to be coming out of it. However, those in the background seem to be in the process of these being lined with snow and with blocks of ice. The people in the picture are well covered against the prevalent cold of the Polar region. The various poles planted around the igloos being built could either be items of scaffolding or other bits of equipment of use meant for their livelihood. The picture also records a possible modernized form of igloo shelter or an industrialized unit of the settlers. In terms of our presentation, it is, indeed, a vernacular settlement of the Polar people using available material from the vicinity and confirming to the regularity of an evolved structure common to the locality.

(c) 'Boat-houses' of the River people

The boat houses of the Kerala people in South India are as regular a feature as in the Kashmiri region. The many waterways of each locality

Figure 4: Boat Houses, Kerala

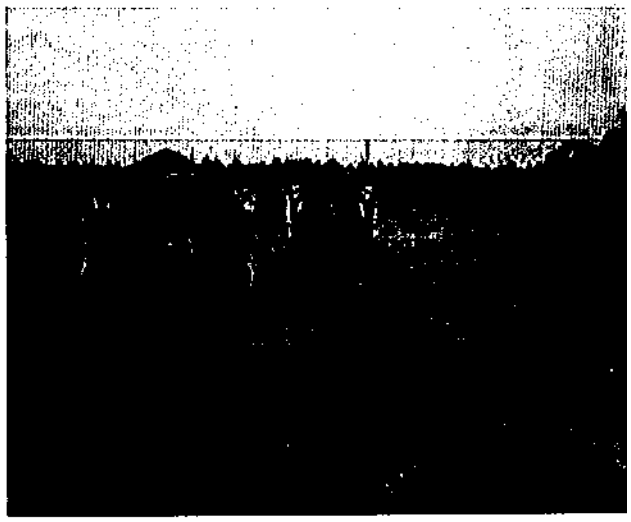


Figure 5: Boat Houses, Kerala

and the scarcity of land, undoubtedly, warranted such a solution. Moreover, both groups are keen craftsmen with their ready wears made for sale. Hence, the multiple shortcomings have been converted by these industrious people to advantage in not only making the boats their home and workshop but also their sales unit not only at their ports of call, but also to those they transport but also to those that they hire out their craft as a holiday home. The illustration records an attractive landing platform for such visitors. A fleet of such vessels clearly establishes the reparative concept of the natural environs of nature's own assignments to the peoples of such regions.

(d) 'Potable-houses' of the Gypsies

The Potable –house of the Gypsies in Europe as illustrated above is an adaptation akin to the financial, climatic and resourcefulness of the Gypsies in Europe. In contrast the Gypsies of Sri Lanka who carry their Palmyra Palm leaf shelters on the backs of donkeys with the minimum of poles to support leaf covering as shown below. The adaptation of house types and the selection of materials skin to the availability in the locality are, indeed the characteristics of vernacular styles of settlements. The men folk of these establishments visit the houses and market centres and entertain the young and elderly folk with snakes and monkeys. In the mean time the grown up daughters visit the younger lads in their homes to provide appropriate companionship to them in the guise of reading their palms and recommending magical cures to various shortcomings. Hence the dressers and attire of both men and women confirm to their trades.

Figure 6: The Potable Houses of the ypsies in Europe

Figure 7: Palmara leaf shelters of the Gypsies of Sri Lanka

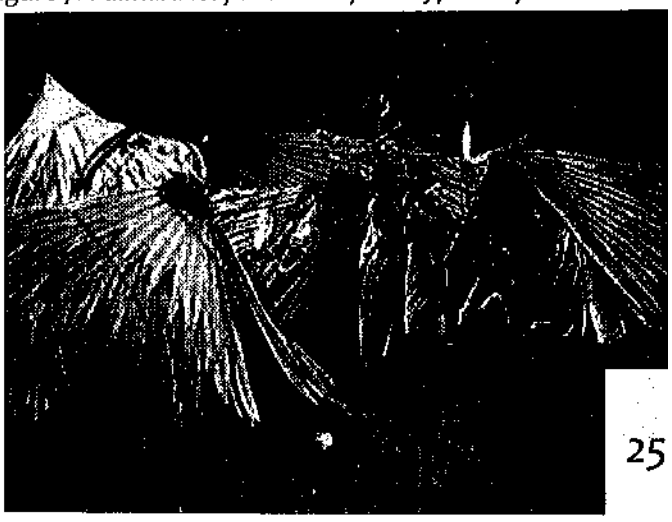


Figure 8: A large camp of Gypsies from South India with coconut leaf huts

Figure 8: A Gypsy Snake Chamer

(e) 'Tree-top' houses if the Chena Cultivators

The Chena Tree Top houses described earlier was an example from Sri Lanka. However the one illustrated here is one from..... built more specifically for a chena as seen from the recently cut tree stumps and the newly planted banana shoots seen in the foreground. The night watchman is seen climbing the 'tree top house' along a vertical ladder of jungle timber and cross bars of the same material tide tied with jungle bark. Unlike the tree top houses in Sri Lanka, this one illustrated is supported by vertical poles, possibly with arecanut trees. The roof is covered with dried wild grass and the walls are mere panels of short wooden poles and possibly a bamboo tat. The second illustration is a mere 'watch hut', meant for bird watching or to enjoy the scenic setting. The fact it provides a summer cum winter view it is undoubtedly, from a country in the temperature zone. As such the concept of 'Tree Top House' are not a phenomenon of the tropics only, which were the lookout points of the watchmen that guarded the fields of the landlords or had viewing points overlooking a scenic valley or come such vantage point. The third illustration is that of the central homestead at Mahakirinda which shows the appendages of paddy storage surrounding a manor, but also the houses of the subsequent generations that continue to live round the ancestral home.

Figure 9: Chena Tree top

Figure 10: Watchout House - Europe

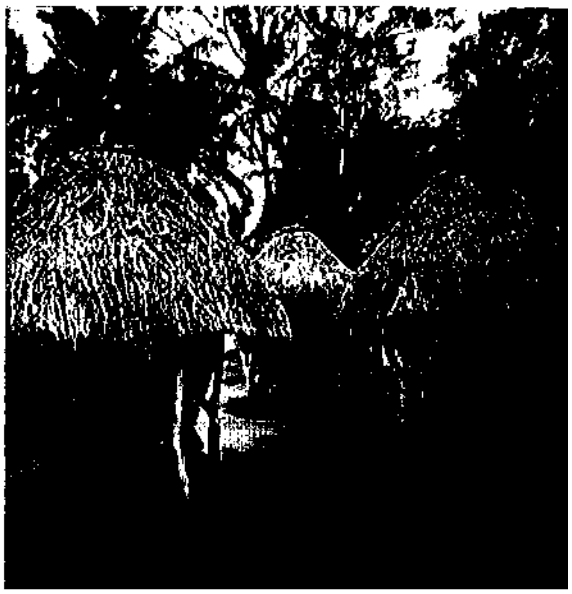


Figure 11: Mahakirinda Paddy Storage

(f) 'Wigwam' Shelters of the Red Indians

These houses cover the full range of the houses in the vernacular settlements of the Red Indians covering the full range of their migration, be it the Rokies in North America or the Andes in South America. The first illustration shows a conical shelter that is about 15 feet high and about 25 feet in diameter. It is within this that the families rest at night. The construction could be quite simple in having the poles forming the rafters being planted in a circle and gradually tilting these toward the centre and fastening the beam ends together. This had a cladding of bark which was a suitable insulation against the possible extremes of the temperature on the mountain slopes. The second illustration is a variant of the first, but built poorly with limited wooden members and adopting a type of rattan weaving to form of the top is also modified to a truncated shape.

(g) 'Skin-tents' of the Bedouins

Banister Fletcher in his fifteenth edition covering the history of architecture of the world illustrated a couple of Bedouin tents. His comments are indeed most pertinent which reads, "Tents of sheepskin speak for themselves and are still as much in use among Bedouin Arabs and other nomadic tribes as they can have been in prehistoric times; (Banister Fletcher, 1954, p. 1). When one views the sketches perhaps drawn by the author,

Figure 12: Wigwarm

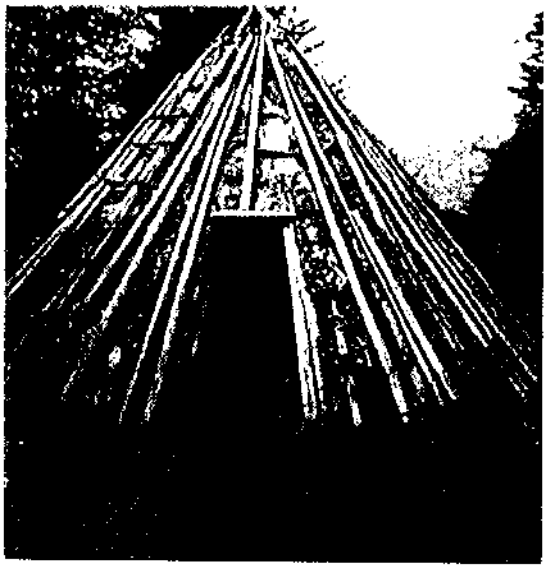
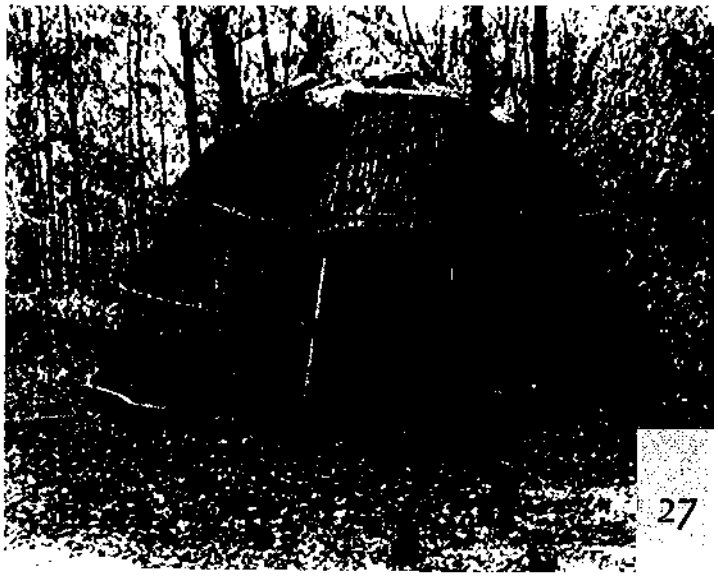


Figure 13: Wigwarm



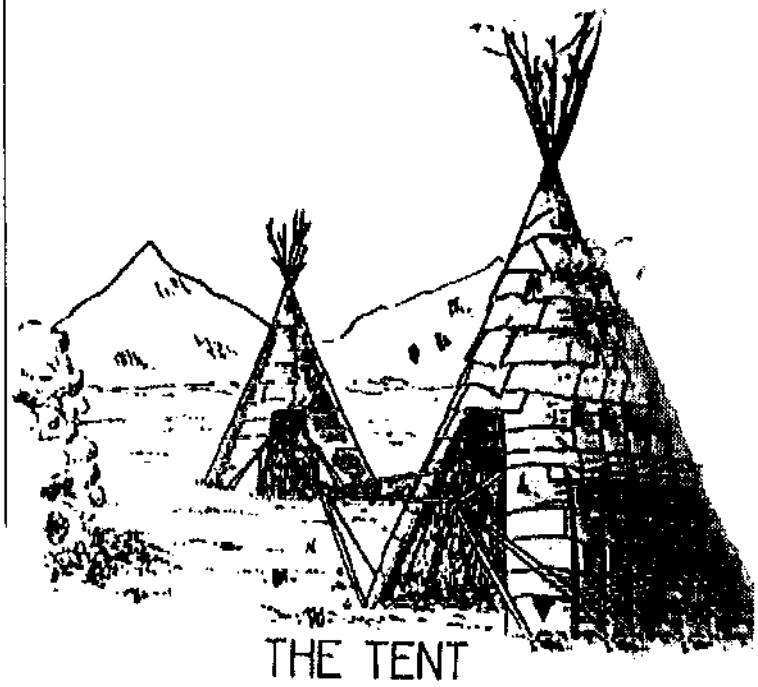


Figure 14: Banister Fletcher – P.2

indicates a most simplistic form of sticks planted in a circle and brought together at the top perhaps over 15 feet and these fastened with horizontal twigs at regular intervals, upon which the sheep skins are laid to protect the interior from the sun and the rain. There could well have been openings to the exterior for ventilation where at the sheepskins could have been rolled up. The vernacularness of this repetitive shelter depended on the availability of the raw materials being at hand. The wooden poles could have been gathered from the sparse forest around and retained when the inhabitants had to move to another oasis campsite. The sheepskins used as roof cover was also available from the herds that these Bedouins reared. Hence, the Bedouin's shelters retained a common character using available material and this community carried out a common life style.

(h) 'Leaf-huts' of the Veddhas

The Veddhas of Sri Lanka are generally accepted as the original inhabitants of the island with whom the migrant races mixed or lived in isolation. However, this original community continued to live in isolation carrying on their traditional occupation of hunting and food gathering and hence moving with the migration of the wild herds upon which they relied for their food. Thus the shelters were natural caverns as was seen and recorded by Seligmann at the turn of the twentieth century and illustrated below:
However, with time and possibly with the influence of subsequent migrants the concept of agriculture engulfed the Veddha community. The first efforts at agriculture which could be traced even to 14 000 BP, Seligmann at the beginning of the twentieth century also saw traces of these elements with the Vaddha community that he studied in depth. An illustrated of a chena cultivation and the type of permanent dwellings of a regular format as seen at the turn of the twentieth century are given below:

Figure 15: Seligmann - Fig 2 Plate XIX

Figure 16: Seligmann - fig. 1 Plate XII

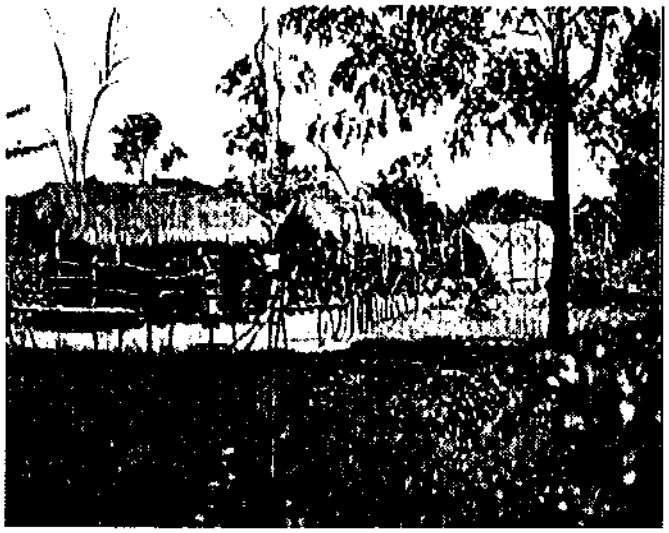


Figure 17: Seligmann - fig. 1.Plate XV

Figure 18: Hut and Tree Top Watchout

The first illustration shows the forest that has been burnt down for the chena cultivation. No doubt the elders would have gathered the necessary timber required for the modest shelters of the community. The simple structures of the houses constitute a series of vertical posts to support a roof and the heights of these varied to provide for a steep roof to flow the rain water from the central ridge. The beam of jungle timber placed upon the pillars retained the rafters also of a smaller section of unsown forest wood. Jungle twigs placed across the rafters retained the dries wild grass that needed regular replacement. The space so sheltered was enclosed with more vertical poles of jungle timber and with twigs made to crisscross these, puddle clay was presses into the timber frame and left to harden. Hence a series of modest wattle-and daub shelters of the Veddha people as seen in figure 3. Thus, a community with housing of an even character, using the available wood, clay and grass found at the site. Hence, a vernacular settlement with and identified occupation of chena cultivators. Although this illustration is from neighboring country it records almost the identical phase of growth of the Veddha community that is about to be integrated with the rest of the community. This also shows the 'Tree Top House' still in vogue in the Sri Lankan Community today.

(i) Earth-Caverns of the Vietnam Freedom Fighters

Camouflaged U underground hideouts are not an uncommon feature in troubled times. Hence, the Vietnamese freedom fighters too adapted a practice not too different to others. But the scale of the underground establishment south of Ho chi Ming city was

Figure 19 - A modern cove to a concealed underground camouflaged entrance in Vietnam

Figure 20: A view into an underground entrance with a modern visitor climbing out, Vietnam

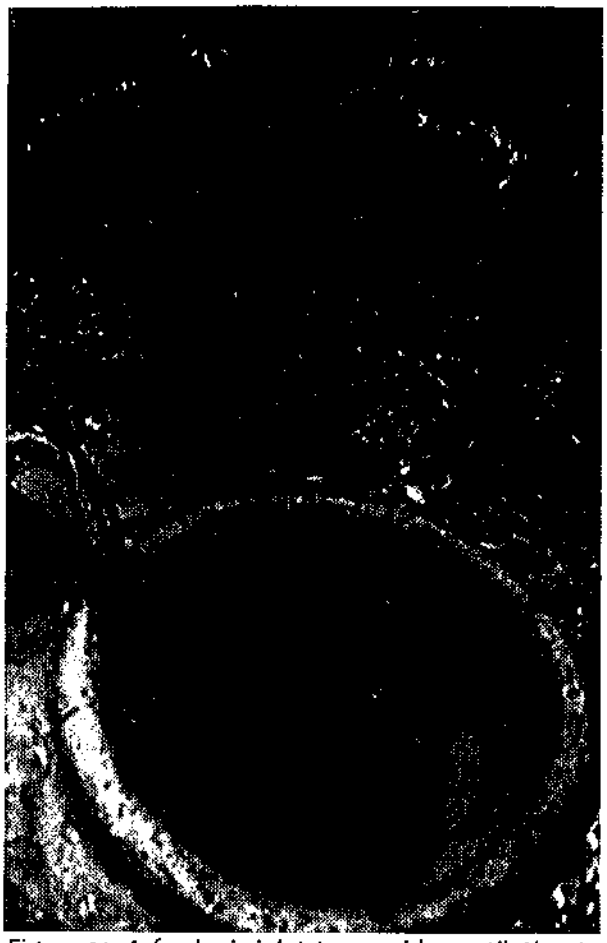


Figure 21: A fresh-air inlet to provide ventilation to thousands of occupants,Vietnam

as extensive as to be able to accommodate nearly 30 000 troops. The intake of air for the occupants was not exposed as the photograph shows, but was concealed under an artificially molded white ant hill. The many stories of occupancy were very much like the Catacombs that we will see next. The subtle planning of the tunnels etc.., were such that the small-made Vietnamese soldiers could creep through the tunnels without any difficulty, but the larger bodies of the American soldiers could not negotiate these narrow openings. This camp site of war for over twenty years was impregnable to the enemy.

(j) Catacombs of the early Christian Martyrs

The concept of catacomb imply burial chambers that are underground and as such these do not count as a human settlement until these become the cover for the Christian communities to take shelter during the early centuries of the current era when this sect was band and persecuted. However, the prevailing laws of the time did not permit the law enforces to persecute any community within

Figure 22: Catacombs, View of an Underground Passage

the premises of a cemetery. Hence, the persecuted Christians took shelter under this rule of law to carry out their rituals without being harasses by the law. Hence, the catacombs became a settlement. The first illustration records one of the limestone passages in the underground Catacombs where on the side walls of it had crevices made to insert the stone or wooded sarcophagus in to these. These passages ended in to a wider space, the walls of which also had crevices cut in to place the coffins. It were these wider spaces that has been used by the early Christians to hold their services with impunity as these Catacombs were treated as cemeteries or burial grounds within which no arrests were permitted under Roman Law. The span of these Catacomb complexes were quite extensive and illustration I records the regularity of some of these in Alexandria.

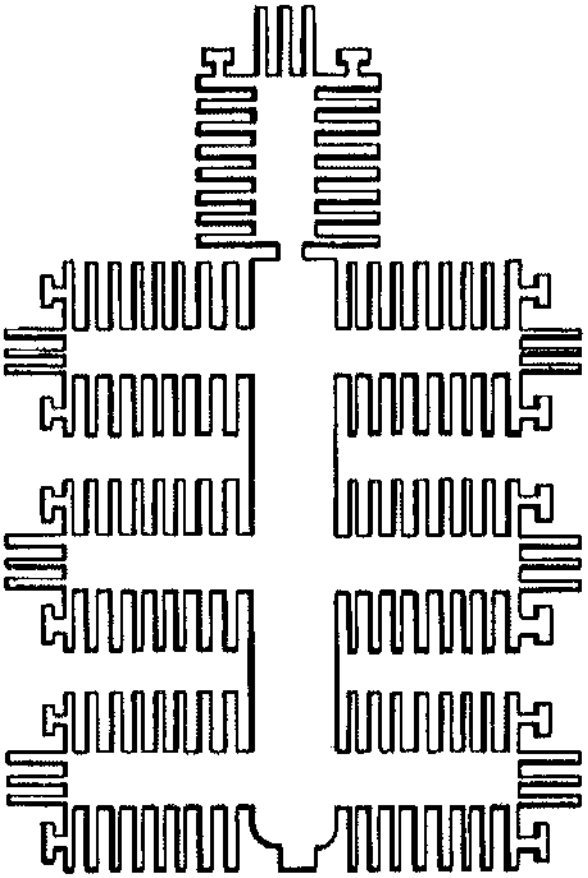


Figure 23: Ency. Britt.1950, vol. 5, p17, fig. 8.– Catacomb at Alexandria

Establishing the Authenticity of the Settlements Evaluated

Let us recapitulate the definition that we recognize as being vernacular

(1) a manner of building shared by the community;

(2) a recognizable local or regional character responsive to the environment; coherence of style, form and appearance

(3) or the use of traditionally established building types; traditional expertise in design and construction which is transmitted informally;

(4) an effective response to functional, social and environmental constrains;

(5) the effective application of traditional constructions systems and crafts"

We have little reason to overrule the many examples so carefully selected and evaluated for these not being vernacular. The only addition is that these are not the full complement of examples. There could be as many as the sand on the shores. The life spans of these need not be eternal. There is every possibility many more vernacular settlements being born a new. And finally we need not

confine vernacular to this planet alone. There could well be other galaxies harboring vernacular settlers, and humans may need to discover these, if not they discovering us.

Professor Cláudia Estrela Porto

Abstract

Brasilia, Brazil's capital was officially inaugurated on April 21, 1960. Past fifty years of the event, this article seeks to rescue key moments in the history of the city, the Master Plan1 contest won by urban planner Lucio Costa in 1957 until the establishment of the great metropolis, today. Presented as a great historical overview, the text also shows some possible relations between the colonial experience of Brazil and that of India and Sri Lanka.

Keywords: *Brasília, Architecture and Urbanism, History*

So far and so close

When the Portuguese landed on the land we now call Brazil, India already had millennia in its own history. Its exuberant culture and almost infinite wealth constantly aroused curiosity and greed of the Western world. Lusitanian Vasco da Gama was the first to sail directly from Europe to India, reaching in 1498 the beach of Kappakadavu(Kappad), near Calicut (in Kerala). His expedition opened the doors of paradise and unfolded over a period of European domination which lasted 449 years.

Ironically, it was in his way to India that Pedro Alvares Cabral arrived in Brazil in 1500. So, the land was discovered. The explorer found a significant population of natives, who were soon baptized as "Indians", name given to inhabitants of the Americas, since, for a long time, the Europeans thought they were in the Western India. From Brazil, the Portuguese navigator followed to the African coast, landing at Calicut in 1500. It was he who "discovered" Brazil and it was he who established the first trade agreement between Portugal and India. Staying in Malabar Coast, he also arrived in Cochin and Cannanore. The foundations of Portuguese rule in India were established. Brazil and India were both condemned to the European commercial exploitation system.

At the same time, the chance caused the first Portuguese expedition to arrive at the port of Galle. In November 1505, a Portuguese fleet at the service of the Viceroy of India and conducted by Lourenço de Almeida scares Moorish pirates. But contrary currents, due to the southwest Indian monsoon, forced it to take refuge in the port of Galle. The country fascinates the Portuguese. Without delay, they install factories in Puttalam, Negombo, Colombo and Galle, where they built the fort. The flourishing Portuguese colony raises the envy of the Dutch, already established in the Indian Ocean. In 1658, they took the place of the Portuguese, but will, in turn, be supplanted by the English, who settled in the thriving Ceylon since 1797. As in neighboring India, the British rule will only end with the country's independence in 1948. Exactly 443 years have elapsed.

In Brazil, at first, Lisbon deployed factories as those experienced in Africa and India. But since 1549, a new rhythm in the colonization process emerged. The General Government was created and what would be our first capital, Salvador, was founded (1549-1763), which was born from the project of an architect [2] and with town status. Rio de Janeiro (1763-1960), our second capital, was officially founded in 1565. Both responded satisfactorily to the Portuguese model of administrative / defensive high city and commercial low city.

Historical capitals

During the second half of the eighteenth century - while London, through the English East India Company, widened and intensified the colonization of parts of India - the first proposals or claims for transferring the capital of Brazil from the coast to the interior of colonial territory emerged. Such proposals have gained strength during the independence movement in 1822, and during the discussion of the first Constitution (1923-1924), when the name "Brasilia" was suggested for the Capital

of the Empire (to be transferred to the hinterland). If Brazil had Salvador and Rio de Janeiro as historical capitals, India had Delhi and Calcutta [3]. However, in the first decade of the twentieth century, the British decided to internalize the capital of British Raj, founding New Delhi (1912-1931), a project of British architects Edwin Landseer Lutyens and Herbert Baker. "The importance of New Delhi is due to its character of English Garden City built in imperial scale and with works of monumental classical style of Lutyens ... Le Corbusier would say that the city was built with great care, great talent and overall success" [4].

A Brazilian modernist architecture

While New Delhi was built, throughout the 1940s, the Brazilian modernist rationalist architecture, strongly influenced by Le Corbusier, went on to highlight in the international scene. Especially in Rio de Janeiro, it was possible to achieve an arrangement of common interests between political power and a group of young architects newly graduated in the traditional National School of Fine Arts. As paradigmatic work, the headquarters of the Ministry of Education and Public Health was built (1936-1943), designed by Lucio Costa, Oscar Niemeyer, Affonso Eduardo Reidy, Carlos Leão, Jorge Moreira and Ernani Vasconcellos, with advice of Le Corbusier (1936).

The quantity and quality of works of this period is surprising, especially the theoretical contribution of Lucio Costa, the architectural contribution of Oscar Niemeyer and landscaper planner Burle Marx. It was up to Niemeyer to design for politician Juscelino Kubitschek (JK), then mayor of Belo Horizonte, in the capital of Minas Gerais, the Pampulha Park (1942-1944), composed of a Casino, a Yacht Club, a Ball House and the Chapel of São Francisco de Assis, all complemented by the beautiful gardens of Burle Marx.

... However, the Pampulha Park was not only a demonstration of creative exuberance. Its main political consequence was to strengthen ties between Oscar Niemeyer and Juscelino Kubitschek, then mayor of the city. This would be decisive, years later, in choosing Niemeyer to take care of projects of the New Federal Capital[5].

In 1947, the year India became an independent nation, Oscar Niemeyer was invited to compose the group of ten professionals responsible for designing the UN headquarters (New York). It is interesting to highlight this chronological coincidence, the birth of free India, marked by non-violent resistance, and the construction of the building symbol of international peace.

The process of Brazilian urbanization

Brasilia should be seen as another example (or consequence) of the giant Brazilian urbanization process, characterized - among other things – by the concentration of population in urban centers and the creation and construction of new cities (practically from zero). This process has distant historical roots,

but it was clear at the beginning of the twentieth century, with the construction and inauguration of Belo Horizonte, strengthened with the construction and inauguration of Goiania in the 30s and reached a level of international publicity with the construction and inauguration of Brasilia in 1960. It is thriving today with the construction and inauguration of other cities, among which Palmas in Tocantins, from the early 90s [6].

Belo Horizonte was initially [7] conceived by the engineer Aarão Reis from 1893, and inaugurated four years later, in 1897. "The plan developed for Belo Horizonte summarizes much of the culture and aesthetic concerns of the 19th century for the city"[8]. In Belo Horizonte, it is possible to find references to major urban experiences made so far, such as the plans for Washington (USA, 1791, by Pierre Charles L'Enfant) and La Plata (Argentina, 1882, by Peter Benoit) - which served as model.

Goiânia was originally[9] conceived by architect and urban planner Atílio Correia Lima from 1933, inaugurated four years later, in 1937, when the capital was transferred. The authors of the project "dominated the theoretical and technical knowledge necessary to design a modern city during that period. They considered topographical, geological, hydrographic, climatic, historical, cultural, social and economic factors. They also considered the city zoning, which was sectorized for activities (to live, to move, to work and to recreate) in the integration of urban and rural spaces, in the control of urban lands by the government and in urban regulations" [10]. Goiânia was built in a spirit of reality.

Before Brasilia, and for the same site of the Capital, the following were designed and not built: the city of "Planópolis" by Louly Amaral (1927), the "Future Federal Capital of Brazil", by urban planner Carmen Portinho (1938) and "Vera Cruz" by engineer José Oliveira Reis and by architects Raul Penna Firme and Robert Lacombe (1955). In turn, Brasilia was designed in 1957 and inaugurated three years later, in 1960. As in the previously cited cases, the project also reflected the urban reasoning adopted in that period.

A Brazilian party

In launching his platform of presidential candidate, Juscelino Kubitschek expressed his thought that it would not be possible to transfer the federal administration to the inland but in a period of about 15 years. But he said he was prepared to start work if he had the support of Congress. However, unlike the custom followed by all candidates of only holding political rallies in major cities and capitals, JK decided to start his campaign for smaller towns. At his first meeting with the people, at the opening rally of his campaign, he was asked about whether, in the event of being elected, he would change or not the capital to the inland. This happened in the city of Jataí, state of Goias in April 4, 1955. The answer was yes. And so it was done ...

JK took office as president on January 31, 1956. Three months later, on April 18, he signed a message addressed to Congress creating the Urbanization Company of the New Federal Capital (Novacap). This project was converted into Law 2874, on September 19, 1956. The announcement of the master plan national

contest for the new capital of Brazil was approved on September 19, 1956, and published in the Official Gazette on September 30. In 1957, the world knew the winner of the master plan national contest for the new capital of Brazil. The announcement of the contest was launched on September 19, 1956[11], and the result was officially released on March 23, 1957[12]. The following members were part of the jury: Engineer Israel Pinheiro (President of the Commission and Novacap, therefore, non-voting), two Novacap representatives: architects Oscar Niemeyer and Stamo Papadaki (Greek-American author of the first book on Niemeyer's work[13]), two representatives of professional associations: Engineer Luiz Hidelbrando Horta Barbosa (Engineering Club) and Architect Paulo Antunes Ribeiro (Institute of Architects) and two foreign urban planners: William Holford (English, responsible for the Master Plan of London) and André Sive (French, advisor to the Ministry of France Reconstruction). It is worth noting that Niemeyer, at first, had indicated the names of Maxwell Fly (then President of CIAM) and Charles Asher (professor of political science at New York) as foreign representatives. Oscar Niemeyer was already an established architect when, in 1956, was invited by the president of Brazil to project Brasilia and its buildings. "Oscar, this time we will build the capital of Brazil. A modern capital. The most beautiful capital in the world!" [14], told him JK, and Niemeyer accepted only address the architectural issues of the city, denying the authorship of the urban plan of the future capital. Le Corbusier - who influenced the Brazilian modernist architecture and had just designed Chandigarh (1952) - could have been an option for such issues. He even wrote to Juscelino offering himself for the enterprise. The proposal was not considered, although supported by architect Affonso Eduardo Reidy and by Roberto Burle Marx. "Times were different and neither JK nor Niemeyer wanted a foreign star heading the enterprise that aimed to demonstrate the strength of a modern Brazil" [15]. The first item of the 1956 announcement established that "only individuals and corporations domiciled in the country, regularly qualified for the practice of engineering, architecture and urbanism, could participate in the Master Plan contest"[16]. Even before the Master Plan for the new capital of Brazil was chosen, Oscar Niemeyer designed its first monuments. He designed the *Catetinho* (temporary residence of the president, 1956), the *Alvorada Palace* (the final residence, 1957) and Brasilia Palace Hotel (the hosting site of distinguished visitors, 1957). And many distinguished visitors, even before the inauguration of the city, witnessed the

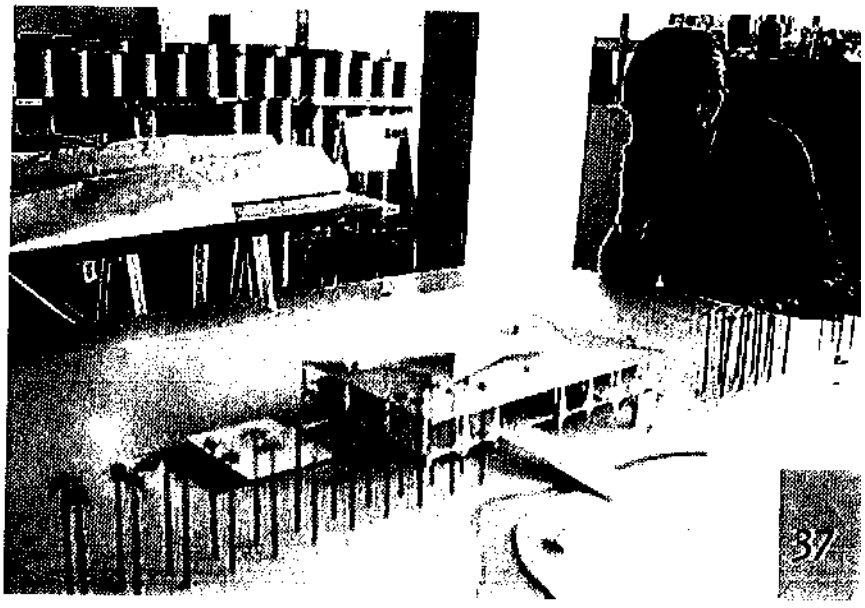


Figure 1: Oscar Niemeyer, 1957. Source: Historical Archive of the Federal District

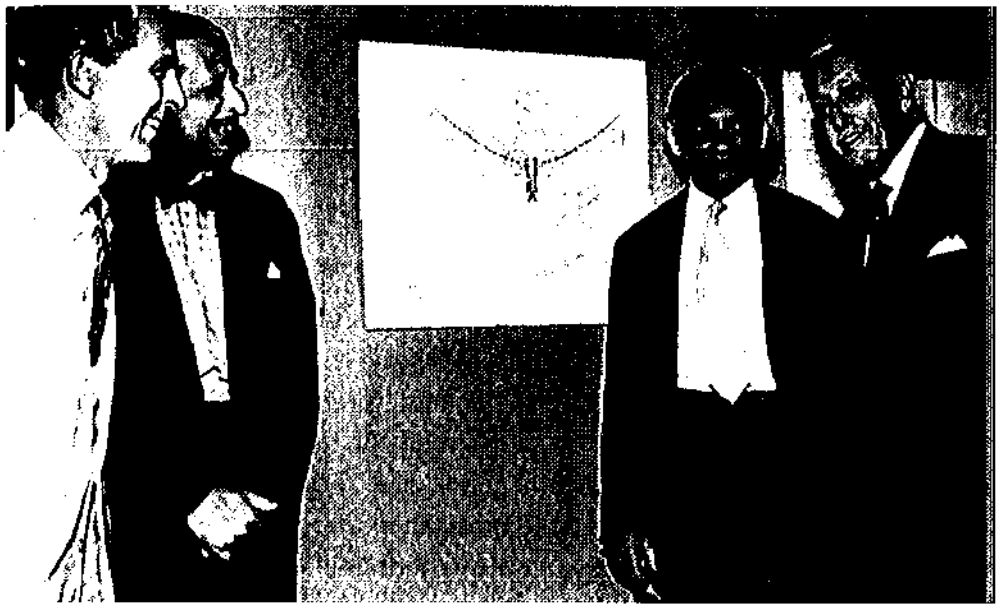


Figure 2: The Examining Committe: William Holford, Stamo Papadaki, André Sive and Israel Pinheiro, 1957. Source: Historical Archive of the Federal District

huge construction site of Brasília and the enormous effort of the country for the construction of its new capital.

Sixty-two teams participated in the national competition to prepare the master plan, consisting of numerous professionals from different backgrounds. The main architects of the country did not shy away of such a significant task: Rino Levi, the Roberto brothers, Henrique Mindlin, Vilanova Artigas, and Carlos Cascaldi were leaders of some of the teams. The edictal required only the basic layout of the city and a justifying report. However, without exception, all projects could be considered applications of the ideals of functionalist urbanism.

Of sixty-two entered in the contest, twenty-six submitted proposals or plans. Of these, few had responded satisfactorily to the criteria established by the jury:

... A Federal Capital intended to express the greatness of a national will, it should be different from any city of 500,000 (five hundred thousand) people. The Capital, functional city, should also have its own architectural expression. Its main feature is the governmental function. All other are grouped functions around it, and to it all converges... [17]

The committee chose project number 22 as the winner, written by Lucio Costa - "the only one for the country's administrative capital. Its elements could be readily understood: the plan is clear, direct and fundamentally simple - as, for example, of Pompeii, Nancy, London done by Wren and Paris by Louis XV" [18]. That is, a Brazilian project, that has come full of universal features, since Lucio Costa learned to draw on the significant urbanistic available repertoire.

The celebration took place in a non-protocol or formal style. "Feast of man is with a woman!"[19]. A worldly and Brazilian feast, in an apartment in Rio de Janeiro, with booze, "half a dozen known," Niemeyer, Holford, Sive and Papadaki. As special guests: the painter Di Cavalcanti and musician Ari Barroso. *Mulatas* and *Aquarela do* Brasil. "A friendly and human party that only the surrealists of Paris could have conceived" [20]

The Master Plan by Lucio Costa

A careful reading of the Brasilia Master Plan report of Lucio Costa allows noting that he – when creating the new - spells out the types adopted (a city on the cross, for example) and refers to some models of urbanity that he would like to see replicated in his city, "the

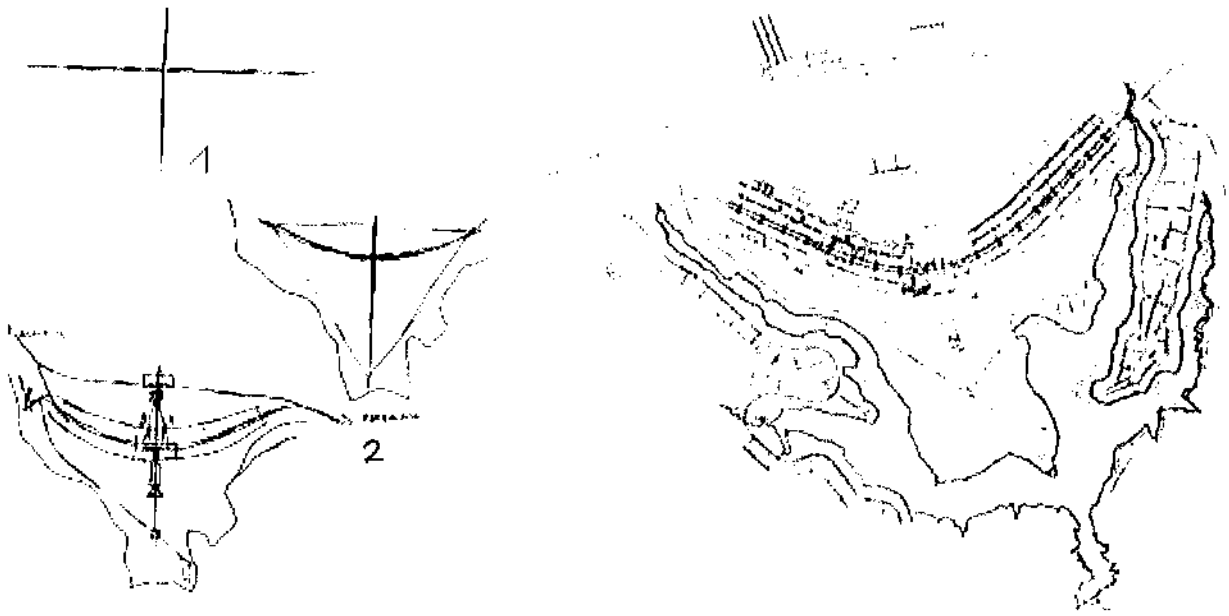


Figure 3: Lucio Costa: Brasilia Master Plan, 1957-1970. Source: Historical Archive of the Federal District

mixture in appropriate terms of Piccadilly Circus, Times Square and the Champs Elysées", the "crosses in the traditional genus of the Ouvidor street", the "Venetian alleys," the Italian "loggias", the embankments of eastern palaces, the principles of the American road technique, the great English gardens, among others. Examples that show the attempted reproduction of spatial solutions socially defined and dated.

At the opening of the memorial, Lucio Costa recalled that Jose Bonifacio in 1823 had proposed the transfer of capital to Goias and suggested the name Brasilia and, when presenting the solution adopted, he explained that the city was "born from the primary gesture of who notes a place or takes possession of it: two axes intersecting at right angles, i.e., the very sign of the cross", defining in this way, its relationship between history and tradition. In another moment, in the short text titled Ingredients of urban conception of Brasilia [21], he said the Capital is an "original, native and Brazilian" creation and indicated the city of Diamantina as one of his sources of inspiration. The purity of the town was not mentioned by chance. Along the axes and the prospects of Paris, the great English gardens of embankments and Chinese supports, and highway and American overpasses, Diamantina is the local counterpart - the mark of tradition. In the text, when listing such features, Lucio did not mention probable influences from European urban planning theories and intentionally omitted Le Corbusier and the urbanism postulates of the International Congresses of Modern Architecture (CIAMs). In doing so, he not only reinforced the idea of native originality, but also the national genius, being able to - from simple perceptual experiences [22] and certain material, social and local temporal conditions give the most creative and surprising answers. Brasília, as defined by its author, is an "original and native" creation. Unique in the sense of what is done for the first time; of what has its own character, what does not seek to imitate or follow anyone, and can serve as a model. It is native in the sense of what is natural; what is not foreign; of what is simple and has no artifices, which belongs to a land and a country. Lucio Costa invented a town organized from two

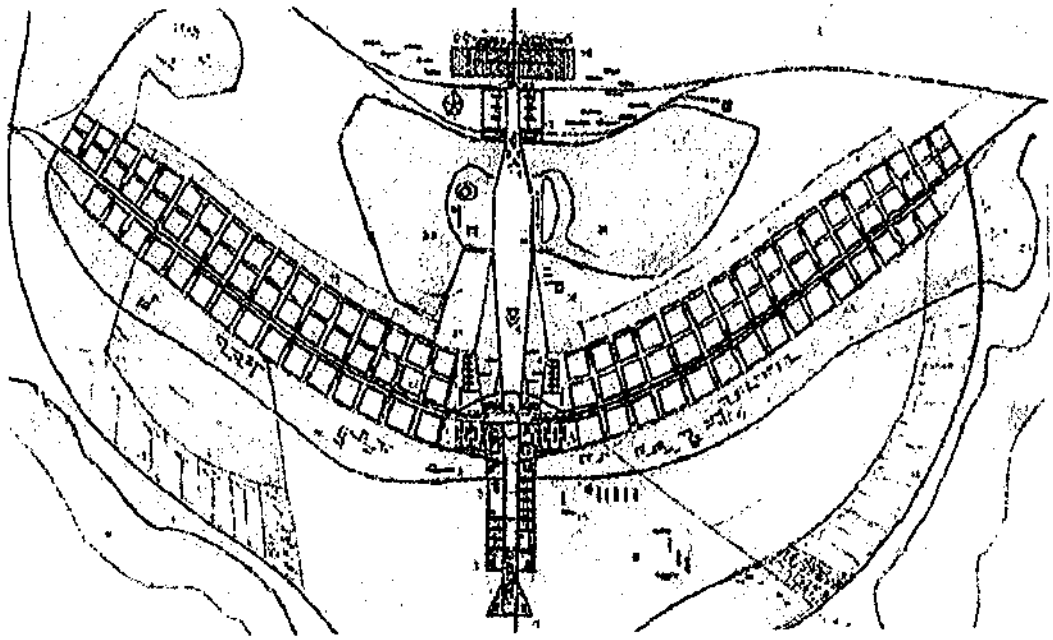


Figure 4: Lucio Costa: Brasilia Master Plan, 1957. Source: Historical Archive of the Federal District

intersecting axes:
the Monumental and the Highway axes (or Residential). The first was intended to concentrate the national and district administration, comprising a sequence of buildings representing the major institutions in Brazil and Brasília ("monumental scale"). In the second, he organized the main residential areas of the city, distributed in 32 orders (major areas) of four sequences of blocks - 400, 200, 100 and 300, with 16 orders north and 16 south ("residential scale"). In theory, each set of four blocks should correspond to a neighborhood unit, each relying on their basic equipment (schools, temple, neighborhood club and local businesses). However, few units were fully deployed. The highway platform was designed to be located at the crossing of the two axes, which is related to the so-called commercial and entertainment sectors, and north and south autarchies ("gregarious scale"). Finally, the different green areas articulate all areas in Brasilia ("bucolic scale") including *Paranoá* Lake (also artificial). The set of four scales characterizes the so-called Master Plan of Brasilia.

Sylvia Ficher and Pedro Palazzo, in the article "Urbanistic paradigms of Brasilia" [23], identified some key references (theoretical or practical) that can be used for a better understanding of the Master Plan and / or understanding of its origin: the restoration of forms of monumental composition, specialization of the road system, the way of expanding cities, zoning and the various urban planning proposals made so far - the *ciudad linear*, the garden city, the *ville radieuse*, the new towns, among others. "Such a collection was taken as reference and

Figure 5: Residential areas of the city, distributed in 32 major areas - each one of them having residential blocks in a numerical sequence of 400, 200, 100 and 300. The major areas are distributed 16 in the north wing and 16 in the south wing. They are numbered from the center of the city towards the end of each wing.
Photo: Andrey Schlee

repertoire, being accepted in theory and lawfully employed in the design of the urban spaces" [24]. In general, one can describe the Master Plan of Brasilia as the basis of several overlapping cities [25]:

- The monumental city, organized from two main axes that intersect at different levels and define a symmetrical road structure, in which structure spaces of power representation, either national or local level, can be clearly distinguished;

- The road city, structured by a regular and hierarchical net of routes of specialized

circulation;

- The functional city, with specific destinations for its different parts, which receive treatments also clearly differentiated;

- The park city, characterized by large green areas and which buildings do not obey the rules of traditional split into individual lots;

- The *radieuse* city, organized in large blocks, *unités de voisinage*, in which the separation of pedestrians and cars prevails;

- The central city, to be expanded by adding new distinct nuclei, the satellite towns.

Extraordinary International Congress of Art Critics

Simultaneously with the construction and installation of the new capital, the Federal Government developed a strong and competent outreach program and propaganda of Brasilia. In addition to official editions as the Brasilia magazine (monthly publication of Novacap, headed by journalist Nonato Silva [26]) or the book Brasil, capital Brasilia, by Osvaldo Orico (amply illustrated and widely distributed), several exposures were assembled and circulated by the capitals of Europe and Latin America, so that little by little, the international community (and even national) was taking notice of what was going on in the Brazilian Central Highlands. However, the action that caused the greatest impact from the international point of view was - seven months before the inauguration of the Capital – the Extraordinary International Congress of Art Critics, from 17 to 25 of September, 1959.

The event was held in Brasilia, Sao Paulo and Rio de Janeiro and allowed many of the participants to know Brasilia. The main topic of

Figure 5: Juscelino Kubitschek and Lucio Costa, 1957. Source: Historical Archive of the Federal District

discussion, "Brasilia, a city-synthesis of the arts", was proposed by the organizer of the Congress, the Brazilian critic Mario Pedrosa, and served as a pretext for a visit of the group to Brasilia. The list of participants is staggering, both in quantity and quality (importance) of exhibitors: Alberto Sartoris, Amancio Williams, André Bloc, André Chastel, Bruno Zevi, Carola Giedion (architect and wife of the historian Sigfried Giedion), Charlotte Perriand, Eero and Aline Saarinen, Françoise Choay, Gillo Dorfles, Giulio Carlo Argan, Jean Prouvé, Meyer Shapiro, Stam Papadaki, Tomás Maldonado and William Holdorf, among others[27]. Brazil was represented by Lucio Costa, Oscar Niemeyer, Mario Barata, Italo and Quirino Campofiorito, Carlos Cavalcanti, Ferreira Gullar, Joaquim Cardoso, José Roberto Teixeira Leite, Fayga Ostrower and Don Clemente Maria da Silva-Nigra, among others.

The meeting of the artistic intelligentsia with Brasilia was striking. Mario Pedrosa points out that "the majority of foreign delegates brought many, many criticisms written down. But they had to re-arrange them or change them in the contradictory presence of reality" [28]. Among the speeches so recorded (mostly patriotic and complimentary), the one from Bruno Zevi stood out. The author of **Knowing How to See Architecture** [29] began his speech by asking the public about who should criticize, "Dr. Lucio Costa or Oscar Niemeyer?" To conclude soon after:

... the defects of Brasília are the defects of our culture. We are responsible. If there are some defects, they come from the fact that Brasilia physically projects problems that we have not solved yet - none of us - anywhere in the world [30].

Bruno Zevi spoke of crisis. Cultural crisis, the crisis of urban planning and architecture. Emphatic, he also quoted Philip Johnson: "the modern architecture is over, and the Seagram Building is the latest example of that" [31]. His concern was justified (with many fundaments!). Brasilia was conceived, designed and built at a crucial moment in the history of architecture. As we built the greatest monument of functionalist modernism, many of the theories that gave it support began to be questioned. In 1954, Philip Johnson gave a talk entitled "The seven crutches of modern architecture" at formalist Yale University, and in 1955 and 1956 James Stirling critically (re)examined the work of Le Corbusier[32], in 1960 Kevin Lynch published "The image of the City", in 1961 Jane Jacobs published "The Death and Life of great American cities", in 1962 Aldo van Eyck published the article about "Team 10"[33]. Still in the 60s, Christopher Alexander, Christian Norberg-Schulz, Aldo Rosi, Robert Venturi and Charles Jencks, among others, published classic texts. The concerns of these authors certainly were not on the agenda of Lucio Costa, and yet today, they are not in the Oscar Niemeyer's.

In developing the Master Plan for Brasilia, Lucio Costa was determined to solve a major problem: how to design a capital for the country. Not simply a modern city, not just an *urbs*, but a *civitas*.

Lucio Costa designed the capital of Brazil and not the capital of Hope! "Brasilia, Brazil's capital, was planned and built between 1956 and 1960 as the materialization of the ideals of the modernist city. If Brasilia had remained a dream, it would be just a local incident without much interest. But Brasilia is not a dream, and certainly is not a nightmare either. It is a living city in constant growth and transformation,

struggling between a fixed scheme of modernity and the needs of every day life" [34]. We have to face it, study it, and know it better. We must have the courage to propose and design changes and transformations that are necessary. We have to make better use of its undeniable qualities and extend them to more people.

In the opening of the Extraordinary International Congress of Art Critics, Lucio Costa left the following message to his colleagues:

You should discuss and disagree. You are critic, dissatisfaction is your deal. But one thing I am sure about - and your presence here is testimony of this – Brasilia is the proof of what is happening in various sectors of our activities; **we no longer export only coffee, sugar, cocoa - we also give a little of eat to the universal culture** [35]. (Our highlight).

The Metropolis-Capital

For Brazilians, it seems "natural" or at least not surprising, though built only 50 years ago, that Brasilia, the third national capital, already present numbers and problems equivalent to those of the largest metropolises on the planet, namely: an area of 5,802km^2 (called Distrito Federal, DF), where, in a quite uneven way, live about 2.5 million people divided into 30 administrative regions, one of which is the plan by Lucio Costa (with 200,541 inhabitants). The Human Development Index (HDI) [36] of Brasilia is 0.844, a value considered high, therefore, higher than the national average (0.813) and only below other four state capitals of Brazil: Florianópolis (0.875), Porto Alegre (0.865), Curitiba (0.856) and Vitória (0.856). In turn, the HDI of the Pilot Plan is 0.936[37], well above the national average and in contrast with the index of some administrative regions of the own Federal District (Distrito Federal-DF), which remains below 0.7.

The metropolitan region of Brasília (Federal District Integrated Development Region) comprises 20 other municipalities from two Brazilian states (Goiás and Minas Gerais), reaching a total of 3.0 million inhabitants.

These comparisons will help us to demonstrate how much the discussion about Brasilia (Federal District) is to transcend the limits of the plan that architect Lucio Costa scratched

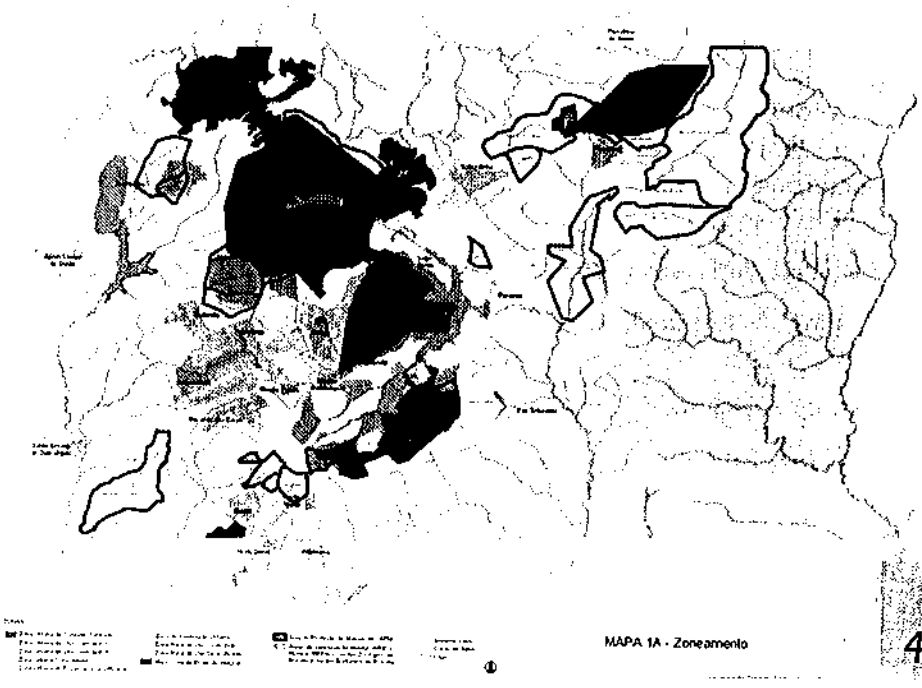


Figure 6: Brasília, Federal District, 2010. Source: GDF

between 1956 and 1957. This is a city with concerning problems of urban configuration, fragmented, which is dispersed, eccentric, and socio-spatially segregated with low average density [38].

[1] Lucio Costa's Plano Piloto, 1957.

[2] Which was designed by architect Luis Dias, well known as a master in stone construction and considered the dean of architects in Brazil.

[3] Located on the banks of Yamuna River, Delhi has been continuously inhabited since the sixth century BC. Between 1206 and 1526, the period of the Sultanate of Delhi, the city became an important business, political and cultural center. In 1526, the Sultanate of Delhi was absorbed by the emerging Mughal Empire (1526-1803). In 1639, the Mughal emperor Shahjahan built the new walled city in Delhi (now known as Old Delhi) that served as capital of the Mughal Empire from 1649 to 1857. Calcutta (now Kolkata), the largest city in the state of West Bengal, was founded in 1690 by the English East India Company, which controlled most of India during the eighteenth and nineteenth centuries (1757-1858). In 1772, the city was designated the capital of British India and, from 1858, the British Raj, when the rights of the British East India Company were transferred to the British crown until 1947, the year that Britain give up sovereignty over that territory to the newly created India and Pakistan. In 1911, for strategic reasons, King George V announced the transfer of the capital of the British Raj to Delhi. Under the instructions of the Viceroy, Lord Hardinge, the British architects Edwin Lutyens and Herbert Baker designed in the 20s, at the southeast of the ancient city, the new capital. In 1926, King George V chose the name from New Delhi to the imperial Delhi; the old Mughal city of Shahjahanabad became Old Delhi. In 1931, the main administrative buildings were constructed. Sixteen years later, when India became independent in 1947, New Delhi remained as the capital and headquarters of the new government.

[4] LAMPUGNANI, V. M. (Ed.). **Enciclopedia GG de La arquitectura del siglo XX.** Barcelona: Gustavo Gili, 1989, p. 186.

[5] NOGUEIRA, Geraldo, FICHER, Sylvia. **Brasília: Guiarquitetura.** São Paulo: Empresa das Artes, 2000, p. 65.

[6] Palmas was planned in the 1988 Constitution. It was designed by Luiz Fernando Teixeira Cruvinel and Walfredo Antunes de Oliveira Filho in 1989 and "inaugurated" in May 1990. About the capital of Tocantins, see: SEGAWA, Hugo. "Palmas, cidade nova ou apenas uma cidade?". **Projeto.** São Paulo, nº 146, oct. 1991.

[7] In 1895, Reis was replaced by Francisco Bicalho.

[8] LEME, Maria Cristina da Silva (coord.). **Urbanismo no Brasil 1895-1965.** São Paulo: FUPAM / Nobel, 1999. p. 222.

[9] In 1936, Atilio Correia Lima was replaced by Armando Augusto Godoy.

[10] LEME, Maria Cristina da Silva (coord.). Op. Cit., p. 226.

[11] The Edictal of the contest was published in the Official Gazette on September 30, 1956. See Edictal for the master plan national contest for the new capital of Brazil. **Módulo**. Rio de Janeiro, nº 8, jul. 1957, p. 9.

[12] The two minutes of the Judging Committee for the Master Plan of Brasilia were published in the Official Gazette on March 25, 1957.

[13] PAPADAKI, Stamo. **The work of Oscar Niemeyer**. New York: Reinhold, 1950 and **Oscar Niemeyer: works in progress**. New York: Reinhold, 1956.

[14] NIEMEYER, Oscar. **As curvas do tempo. Memórias.** Rio de Janeiro: Revan, 1999, p. 109.

[15] CAVALCANTI, Lauro. "Brasilia: a construção de um exemplo". **Arcos**. Rio de Janeiro, Volume I, number one, 1988, p. 51.

[16] **Módulo**. Op. Cit., p. 9.

[17] **Módulo**. Op. Cit, p. 18.

[18] **Módulo**. Op. Cit, p. 13.

[19] NIEMEYER, Oscar. Op. Cit., p. 125.

[20] NIEMEYER, Oscar. Op. Cit., p. 126.

[21] COSTA, Lucio. "Ingredientes da concepção urbanística de Brasília". **Registro de uma Vivência**. São Paulo: Empresa das Artes, 1995, p. 282.

[22] Lucio Costa speaks of loving memories of Paris, the huge English lawns of his childhood, the purity of Diamantina in the twenties that marked him forever, photographs of China from the beginning of the century XX and a trip with his daughters to the United States.

[23] Original title: "Os paradigmas urbanísticos de Brasília".

[24] FICHER, Sylvia; PALAZZO, Pedro Paulo. "Os paradigmas urbanísticos de Brasilia". **PPG-AU / FAUFBA**. Bahia, Special Edition Urbanismo Modernista 1930-19 60, 2005.

[25] Scheme developed in the article **Vera Cruz, futura capital do Brasil, 1955**, authored by SCHLEE, Andrey and FICHER, Sylvia. Unpublished, 2006.

[26] According to Nonato Silva, "The Brasilia magazine was born forced from law. It was the number 2872, from September 19, 1956, which authorized the change in the federal capital, Brasilia's construction and the establishment of Novacap. The law demanded that the Novacap monthly disclosed its administrative acts". Testimony to the Correio Braziliense newspaper of March 5, 2006.

[27] This list was assembled from an original document entitled **Relação de Membros do Congresso Internacional Extraordinário de Críticos de Arte**. AICA, DOC.27-P. Osvaldo Orico adds to list the important names of Alvar Aalto, Richard Neutra and Sigfried Giedion.

[28] PEDROSA, Mario. **Dos murais de Portinari aos espaços de Brasília**. São Paulo: perspectiva, 1981, p. 366.

[29] **Saber ver a arquitetura**, in Portuguese.

[30] ZEVI, Bruno cited by PEDROSA, Mario. Op. Cit., p. 370.

[31] ZEVI, Bruno. **A dimensão das estruturas urbanísticas**. Paper presented at the Extraordinary International Congress of Art Critics. AICA, DOC.22-P, 1959.

[32] STIRLING, James. "From Garches to Jaoul: the domestic architect Le Corbusier in 1927 and 1953". **The Architectural Review**, New York, n° 705, set. 1955 and "Ronchamp: Le Corbusier's Chapel and the crisis of rationalism", **The Architectural Review**. New York, n° 711, mar. 1956.

[33] VAN EYCK, Aldo. "Team 10 Primer". Architectural Design. New York, s/n°, dec. 1962.

[34] ZEIN, Ruth Verde. **O lugar da crítica**. Porto Alegre: Ritter dos Reis, 2001, p. 172.

[35] COSTA, Lucio. Op.Cit., p. 298.

[36] The HDI seeks to assess the quality of life of a population from three dimensions: life expectancy, gross domestic product per capita and educational level. Data from 2009.

37 Portugal's HDI is 0.909 and the index of region Lisbon and Tagus Valley is of 0.925. Data from 2009.

[38] On these features, see the studies of Frederico de Holanda and the research group Morphological Dimensions of the Urbanization Process: <http://e-groups.unb.br/fau/dimpu/index.html>.

THE VERNACULAR AND EVOLVING TRADITION

Deshmanya Vidyajothi Archt. Ashley de Vos

Abstract

Vernacular architecture has always been the popular and traditional response to the vicissitudes of climate, the use of indigenous materials that are easily available in the surrounding environment and mirror, a reflection of a society's basic needs.

The vernacular is not static, it is a dynamic process, however when stifled by a static material palate, the vernacular remains vibrant but unchanged. Thus the expression of the different periods in man's history is concretized in the vernacular or could be the same or different. There is no concept of age, it is ageless and contemporary. The vernacular is influenced by common attitude towards a need to live rather than an expression of wealth and or a pompous exuberance. The expressions were simple however exceptions are seen.

The purpose of this paper is to draw the line of evolution of vernacular architecture in Sri Lanka through two millenniums from earliest Anuradhapura up to today and propose and discuss reasons for the influence that could make or break the chain.

SIWALUH JABU TRADITIONAL HOUSE'S EMERGING LOCAL WISDOM THROUGH INCREASING COMMUNITY PARTICIPATION

Nina Carina

Abstract

Discussion and effort of conservation often generate a dilemmatic debate between how to maintain the condition of historic heritage with the effort to adjust the condition to contemporary era. Conservation activities in housing and residential environment should be abl to harmonize these two things, so they can create a sustainability, ranging from traditional sustainability of existing homes, maintain the sustainability of residential, socio-economic sustainability and the sustainability of the natural environment. In order to achieve harmony, between old tradition, historic value and modernisation, it is important to find the local wisdom by increase the community participation. Lingga village dwellers in Tanah Karo, North Sumatra could be an example of how the community with their local knowledge plays an active role in preservation activities of Siwaluh Jabu,the 250 years old traditional house from Batak Karo, North Sumatra.

Keywords: *community participation,local wisdom,Siwaluh Jabu*

Background

Preservation of traditional houses in Indonesia in general met several problems, such as the number of changes in living patterns and lifestyles of the residents, the transfer of population from rural to urban areas, damaged and unmaintained the house due to limited funding, limited natural resources as the main raw materials of traditional houses. This was also coupled with the lack of effort in in a several parties, from governments, businesses and residents to surrounding communities in the preservation of traditional houses.

Linga village in North Sumatra, has several old traditional houses more than 250 years. Traditional house was a tourism aobject that made this village in the 199 Further up the ladder are levels of citizen power with increasing degrees of decision-making clout. Citizens can enter intoos visited by about 100 local and international tourists daily. But with the declining quality of traditional home, this time, only two traditional houses can still be inhabited while the rest already decay and deteriorated. Lingga Village Community since twelve years ago has trying to retain their traditional house, because based on an old story, hundreds of years ago the village of Lingga is the origin and center of the Karo tribal government. Another thing is that besides the house represents their ancestor heritage, their houses had also been the object of tourism flagship of North Sumatra. To solve preservation problems of traditional houses in lingga Village, community participation should be increased so that people can be a determinant of preservation activity as an effort to make Siwaluh Jabu remain sustainable, healthy and livable.

The concept of preservation, local wisdom and community participation

Preservation; for past, present and future

Siwaluh Jabu that still functioned as a house, should be categorized as a "living monument". Conserve these objects should be combined between conservation activities with the effort to maintain sustainability. In conservation, Michael Heseltine in Home Heritage Annual Report, 1991 states that the sustainability of the heritage is " a growing recognition that conservation is an important part of the quality of life. Poeple respond to a historic environment, not because it offers a nostalgic retreat into the past, but because it cotributes to the quality of life now".

The fact that preservation is not only preserve memories of the past are also listed in several agreements. *Cultural significance means aesthetic, historic, scientific or social value* for past, present or future generations. (1979 Burra Charter). in Indonesia, the importance of maintaining heritage values are even considered as capital for future development. *Heritage, bequeathed from the generations that precede us, is the a vital foundation and initial capital for the development of the Indonesian nation in the future, and for these reasons, must be conserved and passed along to the next generation in good condition, without loss of value, and if possible with an enhanced value, to form heritage for the future (2003, Indonesian Charter for Heritage).*

Preservation, local wisdom and participation

Conservation of traditional houses in each area must be adjusted to the value of locality and their setting. It makes every activity requires a different approach and way. In order to identify and generate activities that has no conflict with the locality, local communities must actively participate in these activities. Active role of society is needed to explore local knowledge they possess. Local wisdom can be understood as local knowledge and local values (genius loci). Local wisdom gained through the process, time and agreed by community. Local wisdom concept is needed to get the continuity conditions are not only related to the sustainability of historical heritage, but more than that is the sustainability of the natural environment (natural environment), artificial (built environment) and human.

Preservation is not an easy activity. This activity generally takes a long time and often require large financial support. Thus, preservation of traditional houses should also be supported by many parties. To maintain the historic heritage, all parties have responsibilities and work together to get the best result. This has been stated in some of the charter agreements, such in 2003 Edinburgh Declaration

- *Governments around the world must commit to give the conservation of both cultural and natural heritage a higher political and financial priority in the determination of national policies, and to do all they can to this end to the utmost of the financial, scientific and technical resources available to them.*
- *Non-governmental organizations around the world must pledge to increase their commitment to reverse the accelerating rate of loss of both cultural and natural heritage at national and local levels using all resources at their disposal to this end.*

and 2003 Indonesia Charter for Heritage :

- *Raise the awareness of all parties (government, professional, private sector, and community, including youth) on the importance of heritage conservation, through education (both formal and non-formal), training, public campaign, and other persuasive approaches;*
- *Understand and recognize the rights and potentials of marginalized people as well as to assist and re-empower the community in the conservation and stewardship of their heritage for sustained prosperity*

Community participation

In determining the role of stakeholders in conservation, there are several things that must be considered, among others are the meaning and status of ownership of historical objects that will be preserved. Discussions about the power of community is often disputed. However, in cases where historic buildings is directly related to society, community participation should be improved to determining their future. To explain the difference between participation and non participation Arnstein, Sherry R. in "A Ladder of Citizen Participation" use typology of eight levels of participation. The bottom rungs of the ladder are (1) Manipulation and (2) Therapy. These two rungs describe levels of

"non-participation" that have been contrived by some to substitute for genuine participation. Their real objective is not to enable people to participate, but to enable powerholders to "educate" or "cure" the participants. Rungs 3 and 4 progress to levels of "tokenism" that allow the have-nots to hear and to have a voice: (3) Informing and (4) Consultation. When they are proffered by powerholders as the total extent of participation, citizens may indeed hear and be heard. But under these conditions they lack the power to insure that their views will be heeded by the powerful. Rung (5) Placation is simply a higher level tokenism because the ground rules allow have-nots to advise, but retain for the powerholders the continued right to decide.
Further up the ladder are levels of citizen power with increasing degrees of decision-making clout. Citizens can enter into a (6) Partnership that enables them to negotiate and engage in trade-offs with traditional power holders. At the topmost rungs, (7) Delegated Power and (8) Citizen Control, have-not citizens obtain the majority of decision-making seats, or full managerial power.

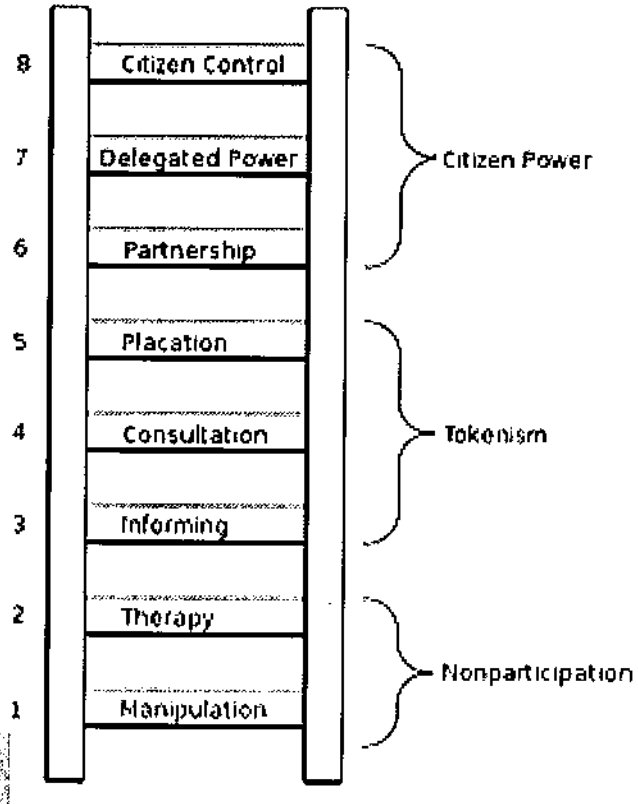


Figure 1: Ladder of Citizen Participation, Arnstein, Sherry R.

Siwaluh Jabu, Traditional house in Lingga Village

Lingga village, Tanah Karo, in North Sumatra

Siwaluh Jabu house is one of the typical traditional houses of village of Lingga. The village is located on the plateau, about 1200 meter above sea level and located in Tanah Karo Regency, northern side of Lake Toba. In the past, the area has dense forest and overgrown with various kinds of wood, which become the raw material for the housing and construction materials.
Nowadays, the forest around the Lingga Village has already become a preserved forest, so the woods cannot be utilized for building materials.
Lingga village as a traditional village in Batak Karo has a pattern of group of houses and was established on the land with a certain area. House placement is always based on river flow.

General Character of Batak Karo Traditional Houses

Batak Karo traditional house has a uniqueness that is not only based on its physical form, but also based on the uniqueness of the residential patterns that reflect socio-cultural values of its occupants. The uniqueness of physical form is the size of a house with a length of 11 to 13 meters, width of 8 to 10 meters and built without nails and had anticipated the risk of earthquake. Social and Cultural Uniqueness Value can be seen in every house that inhabited by 4 to 16 families (always even numbered). Even number is related to the firewood stove inside the house. Every kitchen, used by two families as a symbol of togetherness.

The only room inside the house is a long and wide space for families, which is served as a place to cook, eat, gathering, as well as the family's bed. Because the divider is not available, every cooking hour, the house is filled with smoke from the wood that is used for cooking. The small size of the doors and windows in the house makes the air stuffy and congested.

Karo traditional house is a stage house with roof made from palm fiber, has two doors (pintun) and eight windows (see figure 3). Under the house, it is used as a chicken cage, pig and also as a place to store firewood. Siwaluh Jabu is one type of traditional houses of Batak karo. Siwaluh means eight, while Jabu is a space with no partitions.

Figure 2:(source: nincarin)
"Mecu house" with only two direction roof, while building on the right far side of the picture is the traditional house-"Sianjung anjung Karo", a house with the four direction roof

Type of House Siwaluh Jabu Base on the Roof Shape

Siwaluh Jabu house can be divided into two parts, namely a house Sianjung-anjung: a house with four faces or more, with one or two tersek and has four horn, and Mecu: a house with simple shape, two faces and has a pair of horn at the top and covered with black palm fiber.

Jabu Siwaluh House Construction based on Foot (Base)

Based on its foot, Siwaluh Jabu has two systems. First is Sangka Manuk house or a house made of stacks beam structural systems and the column is using pegs or ropes tied with palm fiber. The next type of house is sendi (joint) house or a house where every sub structure column connected with the beam, thereby becoming a more solid foundation.

Building Hierarchy

Siwaluh Jabu house building hierarchy is divided into three parts; the roof as a symbol of upper world (holy place) called as Dibata Atas. On its top there are two horns, which is

believed as a liaison between the upper and middle world. The second part is the body or middle world or Dibata Tengah (worldliness place). The bottom is the foot as the underworld or Dibata Teruk (place for dirty/crime so that suitable to place pigs, chickens and ducks).

Patterns in Space

Siwaluh Jabu house has a line gangway where the front door with the back door aligned with the direction facing the flow of the river, upstream to downstream or if there is no river, it is using the East-West direction. Inside the house, although inhabited by eight families, there is no divider. The division of space without partition (Jabu) made under the provisions of the Karo tradition. Traditional house in general can be divided into Jabu Jahe (downstream) and Jabu Julu (upstream).

Each Jabu occupied by one family whose placement is determined according to the function and the degree of kinship families in the family tree. Some functions are known are the class of its founders who became leader of the traditional house and occupy the Jabu 1, the spokesman occupies Jabu 5, news seekers who inhabit Jabu 8 and respectable inhabitants of a respected and honored to be invited to every party, occupying the Jabu 4.

Like other ancient traditional houses in Indonesia, Siwaluh Jabu does not recognize the space for a shower and toilet. Bathing activities are conducted in the nearest river, while toilet activities could use the forest nearby the house. At night for security reasons, toilet activities performed directly on the floor thus the dirt will fall down to the ground under the house and became food for pigs under.

Functional Elements of the House

Siwaluh Jabu house has several functional elements, such as stairs leading to the entrance with handle made of bamboo and wooden steps. Porch or patio made from bamboo where the women mingle or weave. Walls made from wood plank. Door size is 80 cm width and 120 cm height. Window size is 35 cm width and 85 cm height. Kitchen measuring 1 m x 1.2 m made from wood and mounted on the roof construction as a place to put the cooking equipment and materials as well as cooking stoves. The ceiling use as a place to store and hang equipments. Fiber Palm roof use as ventilation for air and smoke circulation.

Figure 3: Vertical Hierarchy (Source : nincarin)

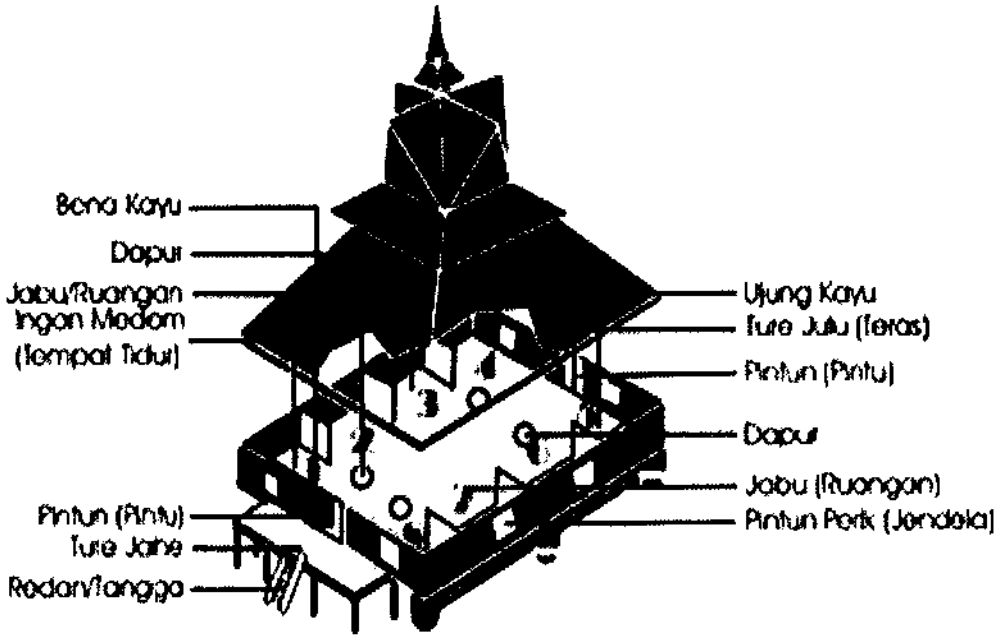


Figure 4: Plan of Siwaluh Jabu (Source : karoweb.or.id)

Ornament

Siwaluh Jabu houses identified with some ornaments like "ayo-ayo" made of woven bamboo, and serves as a triangular-shaped top wall and the placement of buffalo horn and carved buffalo head with the spiritual function to protect against disaster. A variety of ornaments are also used, such as lizard ornaments, to stitch the wooden wall and also a symbol of animals that eat mosquitoes and used as a medicine.

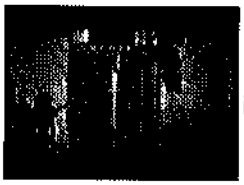
Local Wisdom through Community Participation

To be able to do conservation, rural communities with limited economic Lingga need funding help, either from government or other parties. In order to obtain an agreed conservation guidelines diverse parties, the representatives of indigenous communities Karo village with local governments and ministries of Public Housing has made a table listing the things that need to be maintained and need to be adjusted, while maintaining high local value. Adjustment produced a

figure 5: (source: nincarin)
Local gathering. attended by Lingga village community, local authority, professional, central government.

value of local wisdom based on experience, travel history and local knowledge that has been handed down for generations. The following table represents the results of meetings, discussions and action plans at the community level as a form of cooperation between communities, local government, professional and central government.Table represents the conclusion of a series of processes that have been implemented previously.

Application of local wisdom to the concept of origin Siwaluh Jabu			
Elements	**concept**		**Description - Picture**
	Origin	**Local Wisdom**	
Roof	Two or four face, finished with palm fiber	Still using the same material, because it can protect the occupants from the cold at night and hot during the day, while providing air flow and coolness.	
Foot/ Base	using timber wood with a hinge system in anticipation of an earthquake	Using concrete, because wood from the protected forest is prohibited for building material. But the joint has to be covered with palm fiber to avoid friction that could crush concrete.	original solution: need improvement
Vertical Building Hierarchy	Consisting of three parts which symbolizes the sacred, secular and bad, as a place of sewage or animal cages	The lowest part, can be used as a barn or storage and use plank wood wall.	solution stil need improvement

In spatial	Large and huge room use for families bedroom,kitchens, living rooms, as a symbol of togetherness. Each Jabu occupied by family whose allocated according to their function and position in the family kinship.	Walled. To get more privacy. Color preferably dark to keep the genius loci Become rental unit for low income poeple. (no need degree and kinship family)	  solution stil need improvement
	Kitchen in the middle of the room, as a symbol for togetherness	Kitchen strived still follow the original conditions to maintain togetherness. Smoke cooking process spread throughout the room can be trusted to preserve and maintain the quality of palm wood	 Government,professional and academics should help find solution to make their house more healthy.
	No bathroom and toilet	Preserve as the original house	Bathroom and toilet allocated in a public area as a neighborhood facilities (public toilet)

Application of local wisdom to the concept of origin Siwaluh Jabu				
Element		**Element**		**Description - Picture**
		Origin	**Local Wisdom**	
Other functional elements	**Ladder**	Handle made of bamboo with wood steps	Step can be changed with bamboo	
	Door	Size 85x120 cm	Preserve as the original, as a respect symbol to the occupants.	solution: accepted
	Window	Total number eight with the small size	The number still same, but the width can be enlarged	solution: accepted
	Floor	board	Can be replaced with bamboo or board with a smaller size	
	Wall	board	Continue to use boards of different types of wood but can be added to the beauty and durability of paint timber	
Ornament	**Wall**	Stitched with the palm fiber as an amplifier and unifying wall	It is possible to be given an additional paint as wallcoverings	solution: accepted

Application of local wisdom to the concept of origin Siwaluh Jabu			
Element	**Concept**		**Description-picture**
	Origin	**Local wisdom**	
Utility	No electricity, no water supply	Electricity supported, water supply available in comunal out door space	This is a solution in order to maintain occupancy. The existence of the inhabitants of the kitchen will make smoke billow and preserved wood and roofed.

Application of local wisdom to the concept of origin Siwaluh Jabu			
Element	**Concept**		**Description-picture**
	Origin	**Local wisdom**	
Occupancy	Occupied by eight families who came from relatives	Occupied by low income tenants which pay just only five cans of rice per year	This is a solution in order to maintain occupancy. The existence of the occupants makes the kitchen producing smoke to maintain and preserved wood and roof.

Conclusion

Poeple in Lingga village need to be empowered to the level of active community involvement. This aims to enable them help preserve the traditional houses Siwaluh Jabu by maintaining the sustainability fits their now and future needs. Lingga village community also needs to continue given ongoing guidance and coaching as a community development process.

Local gathering was a tools to improve their participation from non participation level to participation level. But it still has need some improvement to increase their participation, so that conservation activities Siwaluh Jabu House should be a multi-year activity and continuous and Siwaluh jabu house not only preserved, but also healthy, convenient, safe and sustainable

Bibliography

1. Feilden, Bernard M 1994, Conservation of Historic Building, Butterworth Architecture, London.

2. Gates, Richard T 1996, The City Reader, Routledge Press.

3. Larkham, Peter J 1996, Conservation and the City, Routledge, NY.

4. Nas ,Peter JM 2009, Masa Lalu dan Masa Kini Arsitektur di Indonesia, PT.Gramedia Pustaka Utama, Jakarta.

5. Phillips, Christine 2003, Sustainable Place, Willey Academy, England

6. Rapoport, Amos 1969, House form and Culture, Prentice Hall, London.

7. Strike ,James 1994, Architecture in Conservation: managing development in historic sites, Routledge, NY.

8. Schefold ,Reimar, Domenig ,Gaudenz & Nas,Peter JM 2004 Indonesian house:;tradition and transformation in vernacular architecture, Singapore University Press, Singapore.

9. Laporan Akhir Sosialisasi Pedoman Pengembangan Perumahan Cagar Budaya 2009, Kementerian Negara Perumahan Rakyat, Jakarta.

NOTES ON THE ETHICS OF STUDYING VERNACULAR ARCHITECTURE

Prem Chandavarkar

Abstract

Scholarship on vernacular architecture typically constructs the identity of the vernacular subject in terms of a stable and holistic culture, rooted in place and community. On the other hand, the scholar of vernacular architecture is modern, claiming the attendant freedom to individually aspire regarding profession, lifestyle, culture and location. This paradox, although pervasive, is rarely explicitly recognised. This failure results in ethical conflicts that occur even with the best intentions of the scholar.

The paper focuses on this ethical dilemma, and argues that if it is not acknowledged it pushes us towards the unacceptable situation of an "either/or" choice: either suppress the modernist aspirations of the vernacular subject, or accept that culture and built heritage have an unstable relationship that reduces heritage to the superficiality of a visual setting, within a hierarchy of power that pushes vernacular culture to the margins.

The paper argues that the notions of "modernity" and "vernacular" have to be integrated into a framework that binds the scholar and vernacular subject into a common territory, without which it becomes difficult to ethically validate scholarly study of the vernacular. An outline of this framework is proposed.

Keywords: *Ethics, Conflicts, Vernacular, Modern*

Introduction

The study of vernacular architecture is a discipline with a relatively short history, beginning in the second half of the twentieth century with seminal milestones such as the exhibition "Architecture without Architects" put on at the Museum of Modern Art in New York by Bernard Rudofsky in 1964; and the publication of "Shelter and Society" (Oliver, 1969), and "House, Form and Culture" (Rapoport, 1969).

In its initial phase, study of vernacular architecture tended to focus on societies anchored within a relatively stable tradition; largely looking at rural peasant societies: a predisposition reflected in the seminal reference work "Encyclopedia of Vernacular Architecture of the World" (Oliver, 1997). But the challenge has begun to shift in the last few years. We are now at a moment in history where an insidious form of globalisation, which can coordinate distant locations in real time, is severely challenging the sense of the local that sustains the very core of the vernacular. The discipline seems to be responding to this new circumstance, looking more at urban areas and seeking to study the forces and changes that vernacular design is facing. The theme of this ISVS conference, as well as the proceedings of the preceding one, seems to be recognising this new direction. At the last ISVS conference, close to half of the total number of papers presented focused on the (largely urban) developmental mutations that vernacular communities are undergoing; whereas a lesser number of papers were aimed at the traditional area of interest in holistic slow-change rural cultures. Given the relatively short history of the discipline, and the momentous scale of the contemporary challenge, it is appropriate at this moment in time to critically introspect on the study of vernacular architecture.

To do this we must be clear on what we mean when we say "vernacular architecture". Work being produced in this discipline of study echoes the definition articulated by Oliver (1997) as architecture that is owner built or community built; where even if specialised skills are utilised, these skills are locally based; and where the architecture has a fairly direct correspondence with the immediate local contexts of cultural and social tradition, climate, and material resources. This stands in contrast to an architecture produced by formally trained architects in a society occupationally differentiated to a level where the design process is abstracted and distanced from the routines and experiences of everyday life, often relying on a philosophy that is more conceptual and abstract than experiential.

Learning from Orientalism

If we are to critically introspect on our discipline we must look at the field in its entirety: recognising that a discipline is constituted both by the scholarship as well as its scholars. In this respect, there are striking lessons to be learned from the critique, albeit of a different field, articulated by Edward Said (2001) on Orientalism. It could be argued that for a long time the Orient was largely ignored by western scholars; and the fact that in the 19th century the Orient began attracting a significant level of scholarly attention could be

taken as an ethical acknowledgment of the Oriental subjects place in the work, thereby reversing earlier imperialist arrogance. However, Said argues that imperialist attitudes continued, because a careful reading of the texts shows the Orient to be characterised as an exotic other, to be read in contrast to a rational and progressive Occident. While the subject of scholarship was Oriental, the scholars were Occidental (along with a few eastern elites conditioned by western education and attitudes). The scholar may be acting with the best of intentions, and the exoticism of the Orient was often a subject of both admiration and desire. But by failing to acknowledge the comparative reading of east and west, the scholar (perhaps unwittingly) displays a patronising attitude, casting the Oriental subject as a primitive being who is not capable of speaking on his/her own condition. This denial occurs because the prerequisite of the discourse is that the way of knowing should be in rational intellectual terms. Any other way of knowing is set aside as myth and folklore, which do not qualify as the basis for any discourse. Thereby the Occidental scholar is required to speak on behalf of the Oriental subject: an attitude that formed the epistemological foundation of European colonialism.

There have been many critiques of Said's argument, and it is not necessary to go into them here as what is at stake is not the defensibility or correctness of his conclusions. What is of greater relevance to the study of vernacular architecture is Said's method where he recognises the discipline as one where both scholars and the subject of scholarship involve the lives of humans; the two inhabit worlds with strikingly different epistemologies; and the failure to acknowledge this difference has profound ethical implications. In this respect the study of vernacular architecture is similar. Its subject matter is characterised as vernacular, but the scholars are far from vernacular, and would typically be characterised as "modern": a term often placed in opposition to "traditional".

Defining Modernity

The word "modern" means something that is pertaining to present or recent times and is not ancient or remote. But it is also a word that has a historical meaning, implying that humans have not always been modern and became modern only from a certain point in time. Some would date the beginning of this era to the Renaissance, but if one looks at it more specifically from the viewpoint of current attitudes its origins could be traced to that era in European history known as the Enlightenment, beginning (depending on which text you place as its origin) around the mid-seventeenth to early eighteenth century. This was not an era with a uniform philosophy and covered a range of (often contradictory) thoughts. But a common thread was a critical questioning of traditional institutions, customs and morals; replacing them with rational thought as the primary foundation for deriving the legitimacy of authority and judgment. This was a line of thought with profound moral consequences. If reason is the foundation, then it is one that is integrated with the inalienable and individual condition of birth (each one of us is born with the capacity to

think), and cannot be rooted in traditional custom. This has in turn led to the birth of concepts we now consider as basic: human rights and democracy. Our notions of justice have been radically transformed. In earlier traditional societies there was little formalised legislation, and whatever mechanisms of justice existed were aimed more at the restitution of tradition rather than egalitarian ideals. If pre-modern tradition placed a priority on the preservation of tradition and custom, modern ethics in contrast places faith in the ability of individual reason and thus prioritises the autonomy and consequent freedom of individual will.

This is not to argue that there is a clean split and that we have left the traditional era completely behind and are now in the modern; or that we either live traditional lives or modern lives. Many of us go through a modernist education and choose careers based on modernist aspirations, but remain embedded in families with traditional customs and ideals, and often find ourselves in a delicate act trying to balance conflicting pressures. But this remains a private battle. When it comes to the public realm we have largely converted to modernists.

The institutional structures we create for governance, the delivery of justice and education, and settlement planning are founded on the ethical and epistemological premises of modernism.

Ethical Problems in Juxtaposing Vernacular Subjects and Modern Scholars

As scholars of vernacular architecture we are all modernists. A glance at any reputed publication or conference on vernacular architecture shows that all the contributors are highly educated, with advanced professional degrees received from a modernist educational system. Papers are peer reviewed and accepted on the quality of their intellectual rigour: a process premised on a standard of reasoned discourse in which the vernacular subject would find it close to impossible to participate. And most of us are following career paths that we believe should be determined largely by our individual interests and will, rather than being determined by an imperative to sustain communitarian structures. When we and the subjects we research belong to two different worlds, and we do not make concerted attempts to reconcile them into an integrated framework, several ethical problems arise.

The first is that we may be guilty of the same sin that the Orientalists are guilty of, as per Edward Said's critique. We speak about people through a discourse in which the people we speak of cannot participate. And when we study the vernacular world without a simultaneous critical and comparative examination of the modern world, are we tacitly constructing the vernacular subject as that exotic other, interesting but primitive, standing in contrast to our erudite sophistication and therefore in need of our expert guidance to construct a future?

Then we have to examine why we choose to set up a discourse on the vernacular subject in which he/she cannot participate. Are we seeking to speak on behalf of the vernacular subject? If so, on what authority can we claim the right to speak on his/her behalf? Does the vernacular subject even desire someone to speak on his/her behalf?

Perhaps we could lay claim to the defence that we are not seeking to represent the vernacular subject, and only seek to acknowledge his/her (hitherto ignored) presence, architecture and value. But if we leave modernity out of the discussion, what are we tacitly postulating as the relationship that the vernacular subject has with modernity?

Let us first examine the vernacular rooted in long standing traditions. If we value such architecture, are we imposing any obligation on the vernacular subject to preserve such architecture? To do so would be tantamount to denying to him/her the modernist aspirations that all of us routinely claim: a denial that would be ethically indefensible. But if we say that we are granting full freedom to the vernacular subject to construct any aspiration he/she chooses, then we must confront the ethical implications of a set of competing forces in which we are (perhaps unwittingly) complicit. In the form of globalisation that we find ourselves in now, the modernist way of life is becoming increasingly intrusive to the kind of community based tradition that has sustained the vernacular; and it is becoming increasingly difficult to exercise a choice of isolating oneself within a long standing tradition. As modernist actors, we tacitly endorse the modernist ethics and way of life that is intruding on the vernacular, even though we work in a discipline that seeks to value the vernacular. Are we destroying with one hand what we seek to preserve with the other? And given the isolation of our discourse from the vernacular world, are we taking on any responsibility of empowering any voice to the vernacular subject on this clash of conflicting forces?

We must also ask what this reveals about our ethical stand on the notion of built heritage. Clearly, as scholars of vernacular architecture, we seek to go beyond the limited notion of heritage as the preservation of ancient monuments, and our scholarship seeks to frame a living sense of heritage. This involves the connection between individual acts, community based acts, and a culture that is able to connect across more than one generation. Oliver (2006) has argued that a primary value in studying vernacular is the learning of how community values can be embodied in architecture. However, our scholarship of the vernacular can only record culture as it has already happened. We find it impossible to speak of a culture as it is happening in the real experiential sense of this very moment, or of one that we expect or wish to happen. And by participating in a modernist culture that values individual creativity over community creativity, and by failing to implicate that fact in our analysis of vernacular tradition, we wind up with our main conceptualisation of culture as one with our heads turned backwards in time. We lack the clues on how to adequately integrate our own current experiences into a sense of culture, or on how the notion of heritage can sustain any sense of continuity within the context of modern life. Heritage thus winds up being the product of a way of life and culture that cannot be located within modern life;

which reduces any modern notion of built heritage to the superficiality of a pleasing visual setting.

The study of vernacular architecture appears to be ethically problematic if modernity is not successfully integrated into the analysis. But what kind of integration should we aim for? Coming to the emerging urban vernacular, mere recognition of modernity is insufficient – for that is what has been done within recent trends in the discipline. The work of Tajudeen (2008), Shah (2008), Tarjoko (2008), Bose (2008) and many others at the 4th ISVS acknowledge, often with a strong sense of concern, the displacements forced on to vernacular architecture by urban modernity. But the intellectual analysis remains ambivalent regarding any idealistic aspiration that would guide a resolution of the emerging conflict. Even though it has been recognised that a dominant share of building stock in the world is produced by vernacular methods (Oliver, 2006), current scholarly analysis largely fails to pinpoint the conflict in the Cartesian attitudes of the modern settlement planner with the nuanced approach to space found in the vernacular: and given that our public realm is institutionalized in terms of modernist epistemology, this is a hierarchy of power weighted strongly in favour of the Cartesian planner.

In these absences, a narrow set of choices appear to remain, each deeply problematic: (a) a lament on the malaise of modernity that condemns us to an inevitable decline in culture, morals and art; (b) an anachronistic, often fundamentalist, impulse to cling to an established culture; (c) endorsement of a culture of anarchic hedonism within an individualistic society that seeks no higher ideals; or (d) accept a hierarchy of power that by definition pushes the vernacular to the margins (even though the vernacular constitute a majority of the world's population).

Redefining Modernity

Ultimately, if our discipline puts vernacular architecture under a lens, we must insert into the frame a mirror that directs the gaze back at us. For it is only by constructing a higher ethical ideal, which can guide both modernity and the vernacular, that we can ethically validate the study of vernacular architecture. To explicitly articulate such an ideal is beyond the scope of this paper, but some broad direction will be spelt out.

We cannot go back to an earlier ideal of deriving legitimacy and authority from wisdom received through established tradition. The belief in individual rights and freedom is too deeply established as an ethical tenet to permit this. But the early modernist hope of displacing tradition with reason has also reached a dead end; for it has been adequately argued over the last five decades that the philosopher's worldview of an abstract totalising knowledge is not possible – and where attempted has been deeply problematic. There are some, like Habermas (1984), who have argued that modernity is an unfinished project. Accepting the postmodern critique that there is no ultimate location of foundational meaning, and building on a direction first identified by Wittgenstein, he considers the site of rationality to be interpersonal linguistic

communication rather than a conceptualised structure of the world. Building on a structure of everyday discourse and pragmatics, he argues that a rational public sphere will emerge as only those interests that are generalisable will survive rational argumentation. Habermas has been critiqued for: (a) his assumption that a coherent public sphere will emerge, thereby not giving due recognition to pluralism and multi-culturalism; and (b) his optimistic assumption that every speech act has an ultimate goal of mutual understanding, thereby not giving due recognition to the play of power. However, the idea of founding modernity in everyday acts is an intriguing direction to explore, given our interest in the vernacular which is so integrated with everyday life.

Taylor (2003) extends this line of thought, but is not as ambitious as Habermas and does not seek a goal of defining a public sphere, focusing his interest on the more immediate question of personal identity and responsibility. He contextualises this question within the wider quest for authenticity. Like Habermas, Taylor locates the basis of reasoning in everyday speech acts, pointing out that authenticity can only be derived through dialogue. Just like language, the impulse to achieve it may be innate to the human condition, but it can only be realised by engagement with other human beings. But authenticity also has a moral dimension, rising above personal freedom and desire to define a higher beacon – that Taylor terms as a "horizon of significance" – of what we ought to desire. For example, if men and women are to be considered equal it is neither because of their visibly common attributes nor their differences, but because overriding these commonalities or differences are higher properties of value that define them both, such as the productive capacity for love, memory or recognition. Without a horizon of significance every choice becomes equal, whether it is one that is petty and self-gratifying or one that seeks a moral idealisticground.

There was a time when this quest for authenticity was handed down through received traditional wisdom. Now that that has eroded, one can no longer achieve it through convention and one has to dig deeper into a greater awareness of the present. Taylor analyses the implication of this on art, noting that in an earlier era creativity in art followed a principle of mimesis of reality using established languages, safely assuming in society the presence of widely held pre-existent beliefs. Now the work of art has to create its own world of references and make them believable. But this is not solely a degeneration into individualised idiosyncrasy. The work of art suggests a wider predicament in which all of us are embedded, and is emblematic of horizons of significance. Just because there is a subjectivity of manner does not mean there is a subjectivity of matter.

Connecting the Sacred and the Secular

Taylor's definition of horizons of significance lays the ground for a framework that unites the sacred and the secular. Smith (1992) raises the question of whether in a world of religious pluralism we can rise to the challenge of identifying a primordial tradition that underlies all religious traditions. Smith identifies three components of this tradition:

a) a recognition that reality is not at a single level but is at multiple levels, with the four commonly found levels being: (i) the terrestrial level of every day life; (ii) the intermediate level of dreams, emotions, ideas and archetypes; (iii) the celestial level where the divine is perceived but with (often human) form; and (iv) the infinite where the divine is recognised beyond form or attributes.

b) These different levels are not separate but are really different dimensions of the same universe.

c) These levels are not abstract constructs, and each level is experientially knowable.

One need not agree with Smith's categorisation of levels, or even profess to a belief in God. In recognising reality as being multi-leveled, we can connect with the notion of authenticity that Taylor has defined for us by which we find meaning in our life. But we can also recognise that in comparison to a lower level a higher level can impart an aura of sublime reverence, thereby admitting the sacred into our life without a compulsion to feel any contradiction with secular ideals.

Creating Spaces of Engagement

When we locate the foundation of modernity in dialogue rather than reason, we are admitting that culture is not an a priori phenomenon. It is an emergent phenomenon, deriving from everyday actions, where deliberated actions seek a wider horizon of significance.

In living emergent systems, pre-established overarching descriptions of the whole system can actually be an obstruction rather than of assistance. Johnson (2002), in his analysis of emergence, points out that the human brain is an emergent system that would cease to function if each neuron seeks to be individually sentient. Johnson argues that emergence is predicated on a rapid series of direct experiential engagement with the immediate context, along with an ability to recognise larger patterns in these sets of engagements. The recognition of larger patterns is then reified in material behaviour and construction: in the case of humans this reification would occur in art and artifacts (including architecture). This grounding in direct experience rather than intellectual abstraction is a facet of life that modernity has lost sight of.

A unique capability of human beings is the capacity for reflexivity: we can think about ourselves, andin that act of thinking we wind up changing ourselves. Reflexivity is a double-edged sword. On the one hand the capacity to think beyond oneself creates the capacity to recognise and be moved by the transcendent (to construct horizons of significance). But on the other hand the same capacity allows us to disconnect our thinking from our experience and be trapped by abstraction. Without a grounding in

unselfconscious tacit experience, we can be diverted by a false and abstract sense of authenticity in our lives, cut off from the emotional connections that are essential for any sense of culture to emerge.

In this reframed sketch of modernity we find a fair amount of common ground with the vernacular, without any need to sacrifice modernity's ideal of the freedom and autonomy of the individual will. We locate the basis of life in everyday experiential dialogic acts that seek wider horizons of significance. We would also seek an architecture that is sympathetic to everyday experience while making connections with higher, wider and sacred realms. And this model would be predicated on a sense of culture that is always alive, rather than the coherent abstractions that much of contemporary scholarship directs our attention toward.

A significant implication that this ideal would demand is a shift of starting point, away from intellectual abstractions of life toward a conscious and critical construction of the spaces of engagement that would be conducive to the dialogue and quest for authenticity thatof scholarship involvltse the we must strive for. And the two kinds of spaces immediately relevant to our discipline are the spaces of design practice and academia. If the dialogue is to be rooted in grounded experience, and not be diverted by abstraction, we must start from the bottom up with the dialogue of our own local spaces, and work our way upwards to wider hierarchies of space. This ethic demands that each one of us critically examine the spaces of design practice and/or academia that we are personally involved in. We must ask what responsibility we have taken to promote a dialogic quest for significance within these spaces. Who are the stakeholders in this space who must be admitted into the dialogue? What are the propositional connections between this dialogue and the architecture we endorse? How do we seek to reify this quest? Only when we can all honestly say that we operate in such spaces of engagement can we say that we aspire to a modernity that does not contradict the vernacular.

Conclusion

To complete the circle, it is helpful to step away from modern philosophy for a moment, and examine a source of traditional wisdom: the Katha Upanishad [1]. This Upanishad tells the story of Nachiketa, a boy whose father piously seeks religious merit by sacrificing some possessions to the temple priest. Noting that the sacrifice includes a few old and feeble cows, Nachiketa wonders what the point is in sacrificing what is useless to start with, and challenges his father by asking "To whom will you give me?" Consumed by a flash of anger at this impertinence, the father impetuously retorts "I give thee to death!" Nachiketa, as a disciplined mind, accepts the consequences of his action whatever they may be and sets off for the abode of Yama, the God of Death. But when he arrives at his destination, he finds that Yama is not there. He patiently waits there for three days and nights. When Yama returns he is struck by the disciplined manner in which Nachiketa has waited in a place from which most people would fearfully flee. As a reward, he not only reprieves him from death, but also grants him three wishes. As his first wish, Nachiketa asks that his father's anger be appeased: and as his second wish asks to be instructed in the proper way to carry out the ritual of the fire sacrifice that will grant passage to heaven. Yama gladly and immediately fulfils these two wishes. But as his third wish, Nachiketa notes that when a man dies there is doubt as to whether he still exists or does not exist, and asks to be taught the truth that will dispel this doubt. Yama, realising he is being asked to reveal the secret of death, tries to divert Nachiketa from this wish, offering him all sorts of riches instead. Nachiketa steadfastly refuses all these temptations, on which Yama realises he is worthy of this question and decides to grant the wish. Yama uses the metaphor of a chariot, identifying the atman (a term translatable as both "self" and "soul") as the chariot's passenger, the physical body as the chariot itself, consciousness as the driver, the mind as the reins, the five senses as the horses pulling the chariot, and the objects perceived by the senses as the chariot's path. If one merely seeks earthly fulfillment, allowing a free rein to the senses and the mind, then the chariot runs a haphazard and unproductive path, rendering the atman and consciousness irrelevant. The Katha Upanishad introduces the term yoga: a discipline by which consciousness is trained to still the senses and mind, allowing the atman to become aware of itself and exercise its intention and potential. In this awareness, the unity of the atman with the Brahman – the creative life force of the universe that is beyond time and form – is realised: an awareness that reduces death to an insignificant moment within a larger cosmic context.

The Katha Upanishad, like the other Upanishads, reveals a message that rather than treating the world as a question to be examined or answered, it is more productive to turn a critical and rigorous gaze on the awareness of the observer. This message bears a striking resonance with the notion of a dialogic modernity that is premised on an ethical and critical awareness of one's own spaces of engagement. This self-awareness should make us realise that, if we wish to ethically validate our study of the vernacular, we have to reexamine our relationship with the world. It is insufficient to merely be in this

[1] *The Upanishads are a set of scriptural texts that are foundational to the monistic branch of Hinduism known as Vedanta. While they cannot be precisely dated, they are largely believed to range from the middle of the first millennium BC to the early medieval period. The Katha Upanishad is believed to be of the 5th century BC.*

world and to revel in its pleasures. It is also insufficient to limit our aspirations to the level of studying, analysing and intellectually comprehending the world. It is necessary to examine our own lives and the spaces of engagement we construct, thereby recognising and accepting the ethical responsibility to uphold the world.

Works Cited:

1. Bose, K., 2008. Something Old, Something New: Amalgamations of the New Vernacular in the Contemporary – A Historical Perspective in the case of Mansions in North Calcutta, *4th International Conference on Vernacular Settlements*, Ahmedabad, 14-17 March, CEPT University: Ahmedabad.

2. Habermas, J., 1984. McCarthy, T. (trans.), *The Theory of Communicative Action*, Boston: Beacon Press.

3. Harjoko, T.Y., 2008. Hyper Versus Involuted Tradition – Urbanism in Indonesia, *4th International Conference on Vernacular Settlements*, Ahmedabad, 14-17 March, CEPT University: Ahmedabad.

4. Johnson, S., 2002. Emergence: *The Connected Lives of Ants, Brains, Cities and Software*, 3rd ed., London: Penguin Books.

5. Oliver, P. (ed.), 1969. *Shelter and Society*, London: Barrie & Rockliff, The Cresset Press.

6. Oliver, P. (ed.), 1997. *Encyclopedia of Vernacular Architecture of the World*, Cambridge: Cambridge University Press.

7. Oliver, P., 2006. *Built to Meet Needs: Cultural Issues in Vernacular Architecture*, Amsterdam: Elsevier / Architectural Press.

8. Rapoport, A., 1969. *House, Form and Culture*. Englewood Cliffs, N.J.: Prentice-Hall.

9. Rudofsky, B., 1964. *Architecture Without Architects: A Short Introduction to Non-Pedigreed Architecture*, London: Academy Editions.

10. Said, E.W., 2001. *Orientalism: Western Conceptions of the Orient*, 5th ed., New Delhi: Penguin Books India.

11. Shah, B., 2008. Continuity and Change in Dwelling Spaces – Turkish Cypriot Homes in Cyprus and the UK, *4th International Conference on Vernacular Settlements*, Ahmedabad, 14-17 March, CEPT University: Ahmedabad.

12. Smith, H., 1992. *Forgotten Truth: The Common Vision of the World's Religions*, New York: Harper Collins.

13. Tajudeen, I., 2008. Adaptation And Acentuation – Type Transformation in Vernacular Nusantarian Mosque Design and their Contemporary Signification In Melaka, Minangkabau and Singapore, *4th International Conference on Vernacular Settlements*, Ahmedabad, 14-17 March, CEPT University: Ahmedabad.

14. Taylor, C., 2003. *The Ethics of Authenticity*, 11th ed., Cambridge, Massachusetts: Harvard University Press.

EMBODIED ENERGY IN VERNACULAR HOUSES: CASE STUDY OF GORAI SETTLEMENT, MUMBAI, INDIA

Madhura Yadav

Abstract

The paper is based on overview of vernacular architecture of Greater Mumbai. There are numerous vernacular settlements in Greater Mumbai. Their territory can be distinguished in different parts according to the peculiar socio-cultural and economical elements acquired during the centuries and to the natural aspects that make each place unique. Nowadays the old settlements are mostly abandoned and new houses are not responsive to local conditions leading to destruction of ecological balance and affecting the environment of the place.

The aim of the paper is to analyze the main characters of the vernacular architecture in the old settlement named Gorai pointing out both the typological and the technological aspects (local materials and construction processes), focusing on their environmental sustainability. Energy density of vernacular house and contemporary house is compared. Due to the complexity of the size, structure and construction of various houses, comparison of the main components of each building, instead of taking the house as a whole is preferred. Data and conclusions are the result of quantitative analysis. A house is composed of three main components: roof, wall, and floor. This analysis gives the general understanding of the embodied energy and ecological value of our vernacular architectural heritage and need to search for a more sustainable method of development. Through re-assessing our traditional dwellings under an ecological perspective, we appreciate the wisdom embodied in the vernacular architec ture in its relation to nature and its distinct advantage in low energy architecture.

Keywords: *Vernacular architecture, Energy density of houses, Gorai settlement, Mumbai*

Introduction

The city of Mumbai earlier known as Bombay was renamed in 1996 as Mumbai. It is the largest city having population18.0 million with a land area of 437.79 sq km in the western state of Maharashtra, in India, making it one of the top six largest agglomerations in the world. It is a coastal city with a deep natural bay. From the British period Mumbai was developed as port due to its geographical location at the sea coast. Presently this island city of Mumbai is the capital of Maharashtra state, commercial capital and economic growth engine of India. Mumbai has a long history of human settlement. The region with fertile land, huge vegetations and plenty sources of water were the main attractions to human for establishing settlements here. Most of the evidences of ancient settlements do not physically exist because of changes over the years. Sociological development of Mumbai was interrupted, altered, and at times almost destroyed by foreign culture and beliefs strongly impacting the natural advancement of vernacular architecture and traditional dwellings. Vernacular architecture can be found in various places exhibiting special and diverse architectural characteristics. Gorai Settlement is taken for the detailed analysis as it lies within the limits of Municipal Corporation but it has preserved its vernacular character. As the house forms are carrying, developing and maintaining the traditions from generation to generation for thousands of years, so it is valid to describe them to understand the origin and the spread of vernacular architecture in Mumbai. Energy density of vernacular house and contemporary house is compared.

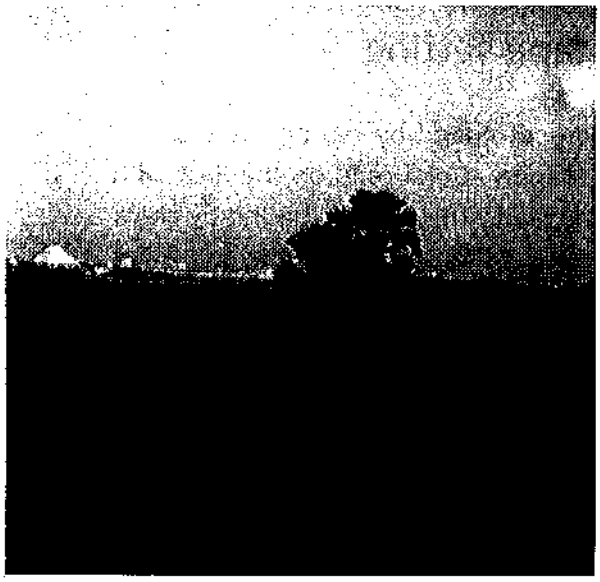
Gorai Settlement

Location

Gorai lies at the northern extremity on the western side of Mumbai Municipal limits. Built in pre 16th century. Settlement is purely residential with population of about 10,000 people.

Landscape setting

The settlement edged by sea on the western side and Manori –Gorai road on the East with agricultural land. The north is bound by creek and agricultural lands while on the south lies the settlement of Culvem. Manori-
Jetty –Gorai is a major path on the eastern side that passing through the settlement. Nearly half of the fabric has already undergone major transformation. The remaining structures, which form about 49% of the Built fabric is retained.



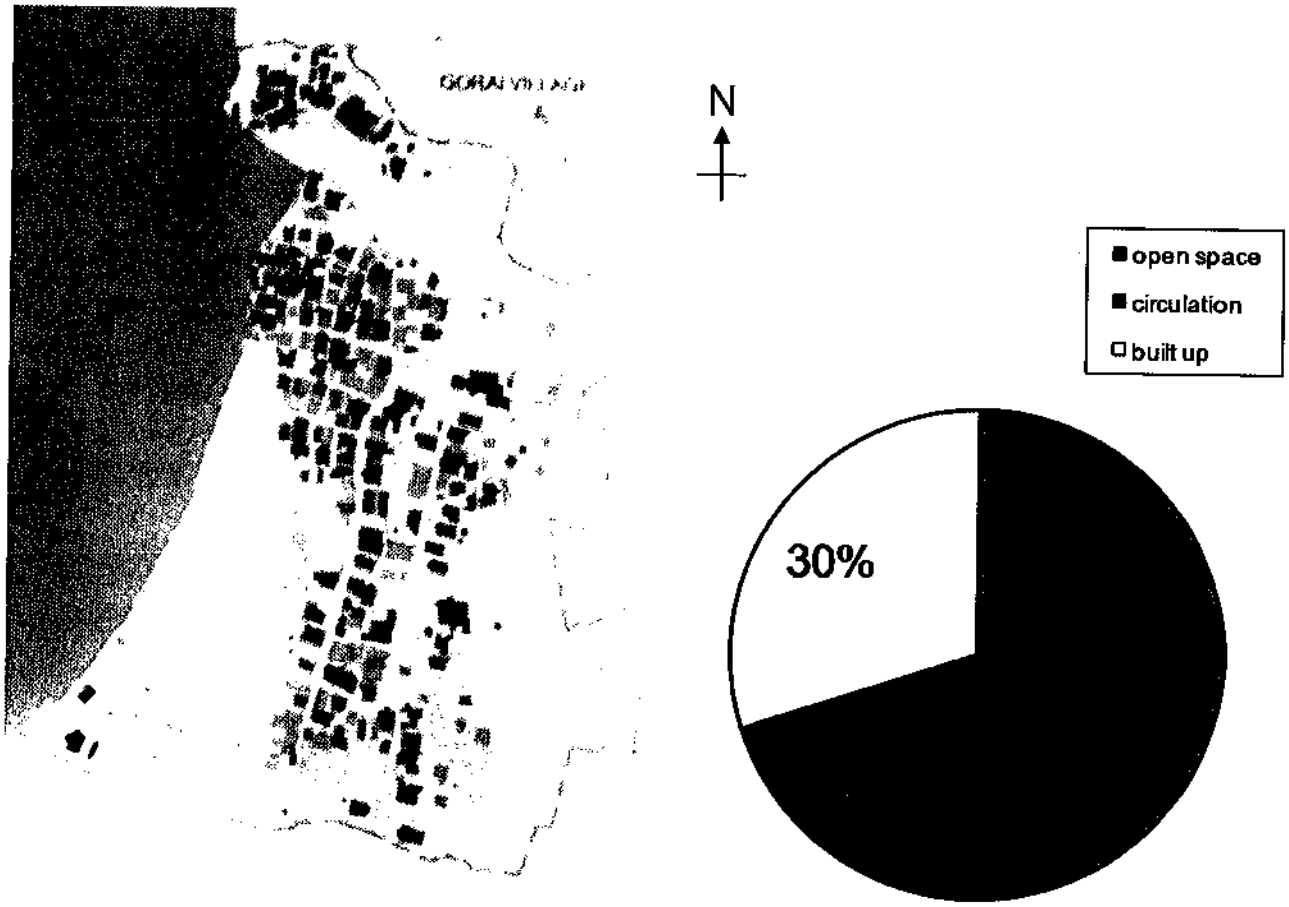
Climatic analysis

Settlement Level:

Orientation

The general layout of the settlement is linear and growth towards south and the site bears gentle slope oriented towards north–northeast. The houses are mostly located on the northern slope. This orientation facilitates cooling wind from the prevalent wind direction and effectively blocking the harsh monsoon winds from the southwest.

Panoramic views of the surrounding areas of Gorai settlement



Existing settlement map and distribution of surface covers

Open spaces and built form

The houses are built on existing topography and are generally one or two storied, and predominantly detached or semi-detached either arranged, where the building line of the houses is set close to the street .The small open spaces well interspersed with the streets. Few houses bear high plinth-better exposure to breezes, for flood protection and as defense against insects. Settlement was constructed primarily for residential use.

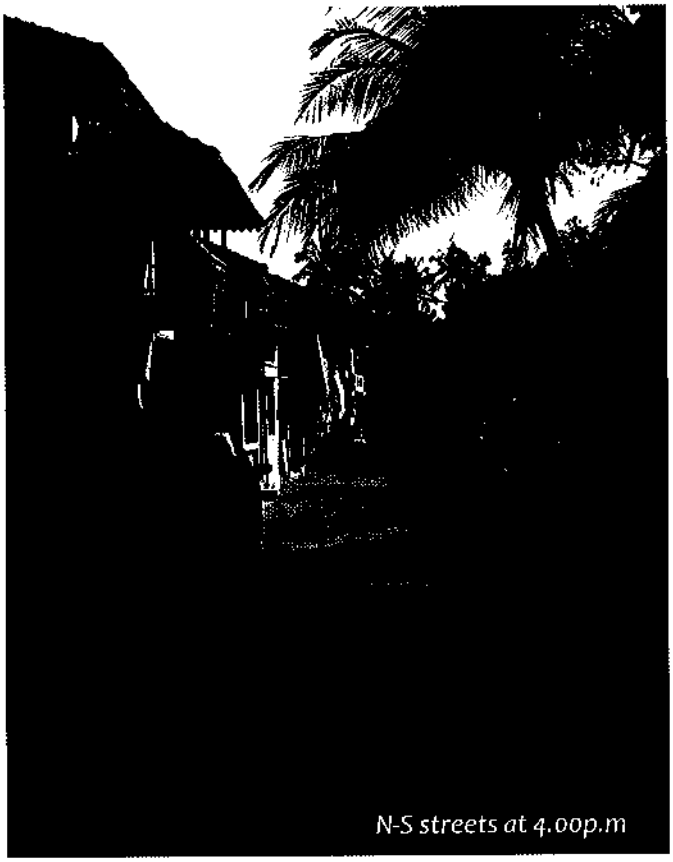
Greenery in the settlement

Community space in the settlement

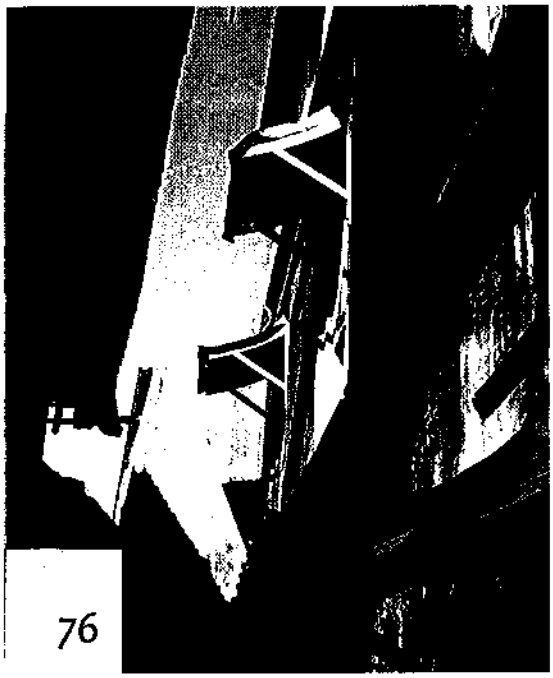
Buildings are of unequal heights creating an uneven skyline and provide shading to each other. The natural environment plays a vital role in maintaining the character of Village. There are open plots at strategic points, which contribute to the rural identity of the settlement and are well used by the local community. Greenary provides a break in the built fabric. Ample vegetation helps in giving the much-needed shade and low reflected radiation.

Street layout

Manori- Jetty –Gorai is a major path on the eastern side that passing through the settlement. This path has two main spines running parallel to the settlement, positioned on the either side. These spines merge at regular intervals forming important activity nodes. The settlement is characterized by narrow internal streets or lanes 1.5-2 m wide along N-S and 2.5-3.0 wide along E-W .The broader main streets running being 9.0m wide. The internal streets are at 30 deg. to the prevailing wind direction thus enhancing air move ment. Street spaces are long and straight to facilitate air movement Street orientation and walls height to the width of a lane ensures the building facades are partially shaded by the overhangs or by the opposite buildings. Thus create shadow to the pedestrians in hot seasons and acts to decrease air temperature.



N-S streets at 4.00p.m



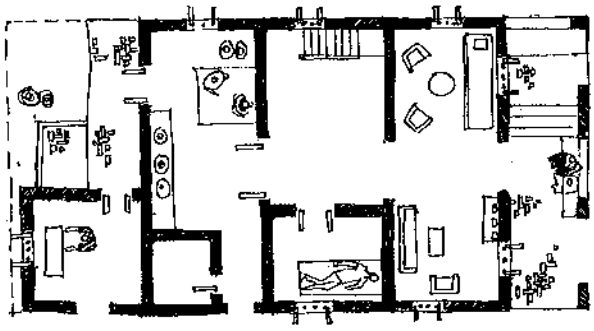
shading on west façade

Dwelling level:

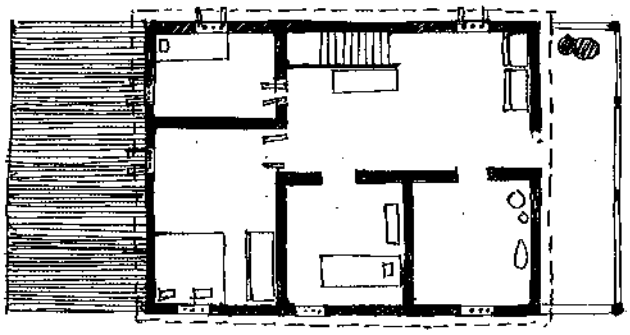
Depending on the socio economic status of inhabitant, there are two typologies of houses. The Koli typology (fisherman's house) belongs to fishing community. These houses are densely packed along the streets running parallel to the beachfront. The koli houses have probably the oldest origins of buildings. These houses form are developed with a hierarchy of spaces (public to private), which are apportioned into four prominent bays or parts. The outermost bay is usually a full-length, narrow verandah, where the users work on their nets, dry fish and interact with the community. The second bay accommodates the multipurpose living space, where guests and relatives are entertained. This bay is used as a bedroom at night, and as an extension of the verandah during the day. The third bay is the inner core of home with a family room. Small bedrooms, alcoves and ladder to the attic are approached from this room. The last bay accommodates the service areas including bathing washing and cooking spaces.

Type-II: -

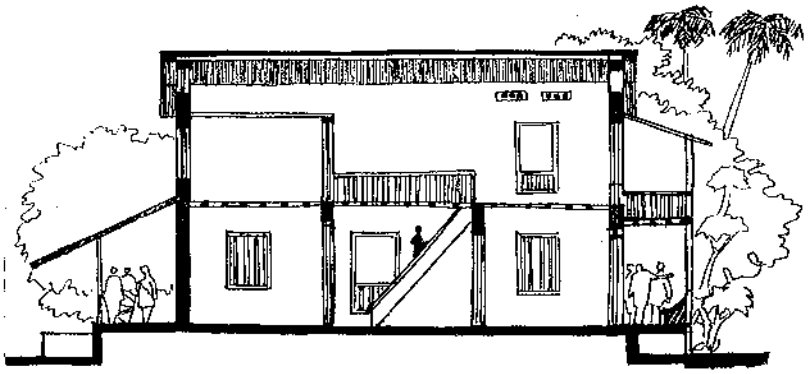
The East Indian housing typology belongs to the Roman Catholic community. Low rise with one or two storied houses. House is divided in to two main parts, the first being semi-private, consisting of front and back verandah, porches, outdoor rooms and an



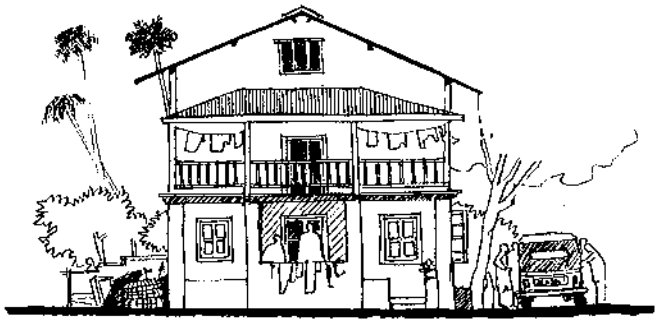
Ground floor plan



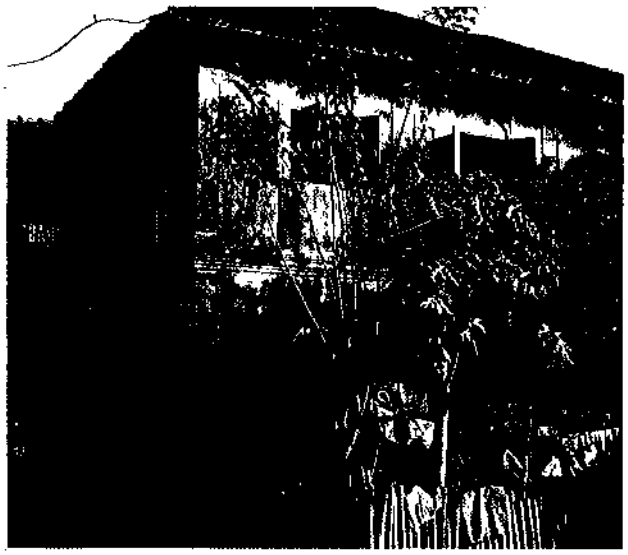
First floor plan



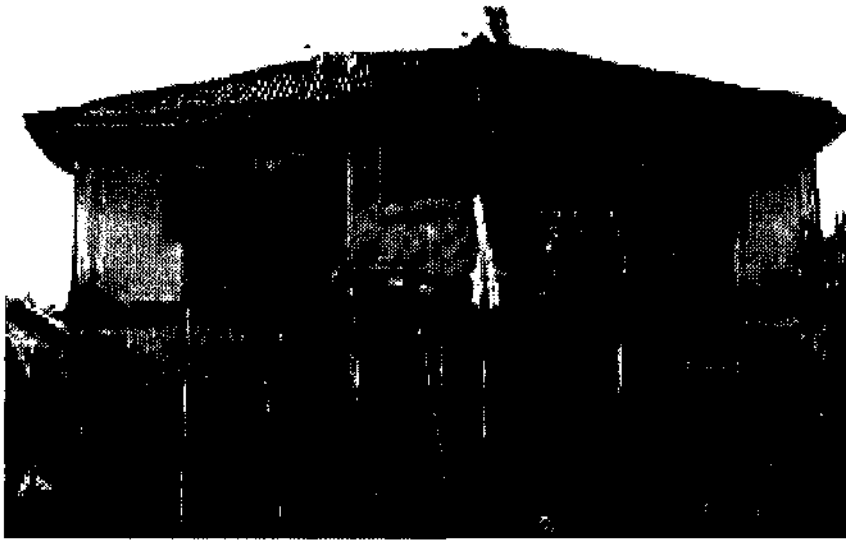
Section



Elevation

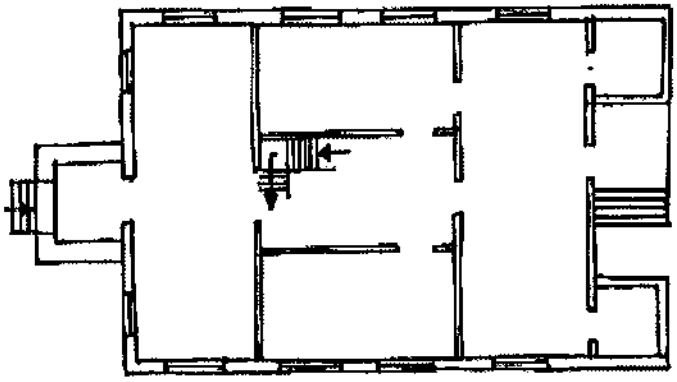


View from North West

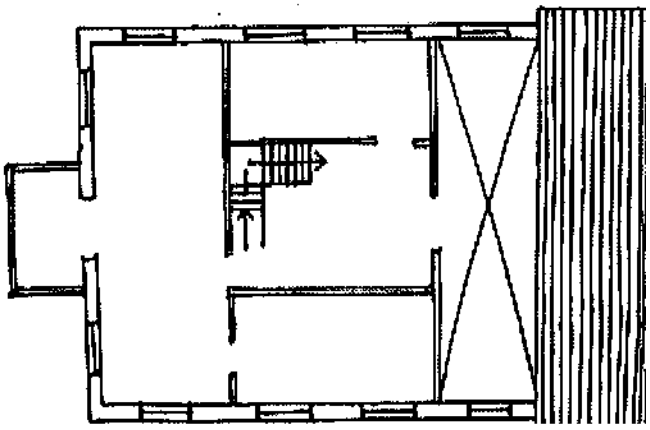


North Elevation

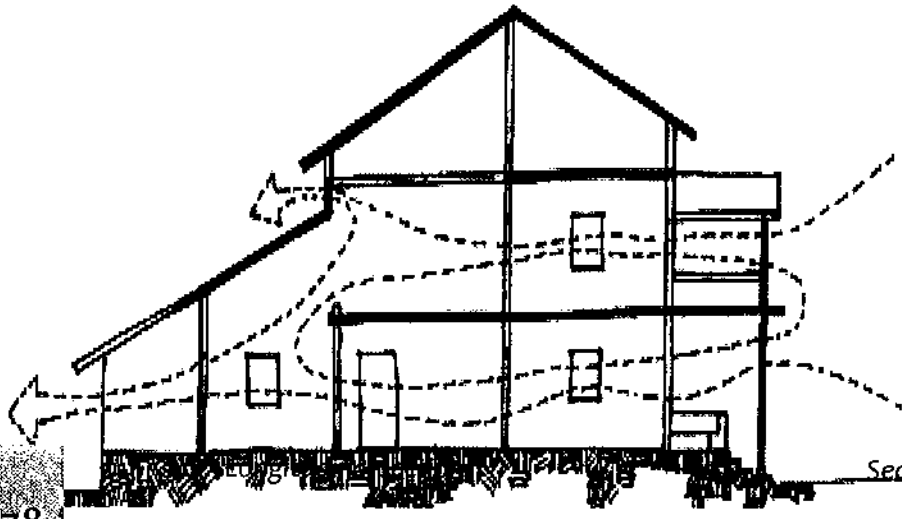
external staircase. The second part beingprivate consists of a multipurpose hall, a dinning and family room, bedrooms, kitchen and toilets. The house is entered through a covered verandah, which forms a transition space from outside to the inside of the house. The Verandah is a multipurpose area. It functions as a socializing space, a buffer for privacy, and as an extension of the hall. It provides natural light and ventilation to the adjoining rooms. The roof of the houses is mostly sloping, covered with country or



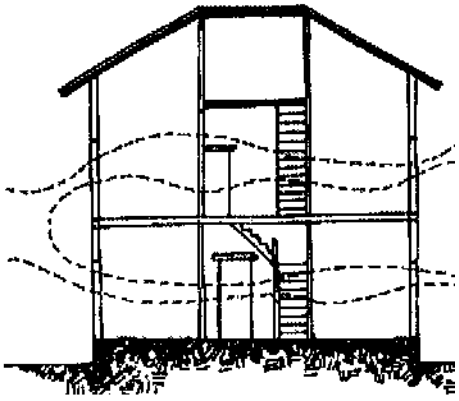
Ground floor plan



First floor plan



Section



Mangalore type tiles. Some of the houses have an attic below the roof that is accessible by a ladder, and used for storage.
A East Indian house is analysed.

Orientation

Oriented along east –west direction to minimize solar radiation on the external surface and thus reduce heat gain. The house has a rectangular plan form with the spaces arranged centrally around a central lobby. It bears a narrow cross section, which facilitatethe natural ventilation with ample air velocities. All habitable rooms have two external openings for cross ventilation. The house is a ground + 1 structure with "potmala" or the attic floor. Heat, and odor- spaces such as kitchens, baths and w.c are placed on the leeward side. Stairways and lobby is placed centrally the central space acts like an atrium .the balcony towards north above the porch. Houses typically have sloping roofs cape with country tiles (Pitch being 20-25 deg.with the horizontal).

Building Envelope

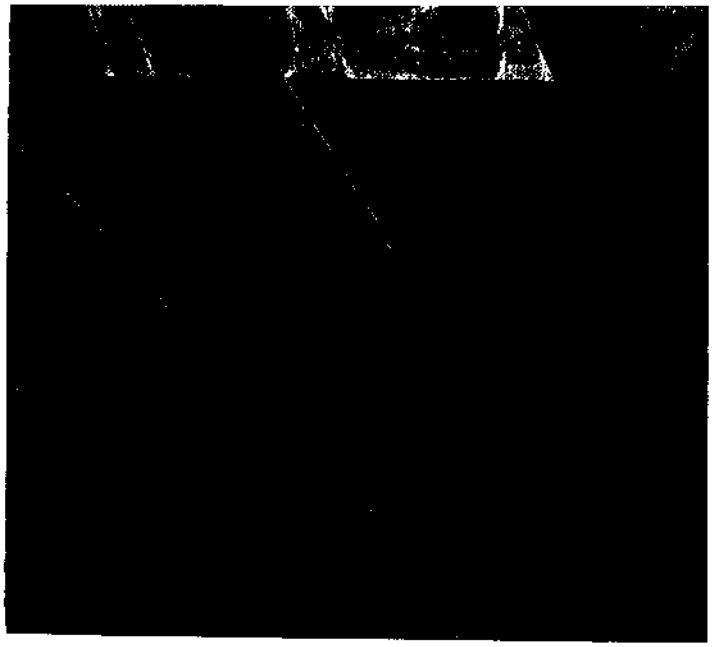
Walls

Walls are 30 cm (time lag-08 hrs.) or more in thickness built of rubble masonry in mud mortar finished with lime plaster. The temperature difference between day and night is minimal with high level of humidity the walls work well by absorbing the excessive humidity and helping the walls to breadth.

Roof

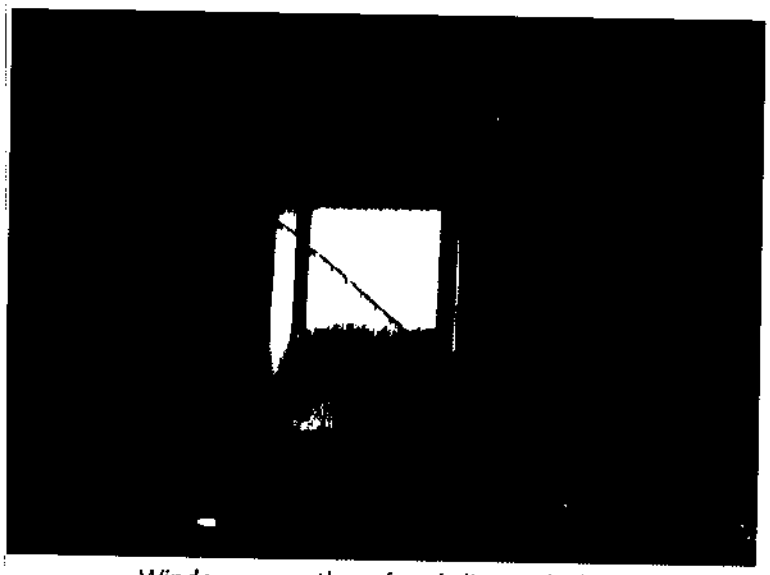
Roof of the buildings is typically pitched wooden structural frame and the countrytiles above. It provides shelter from heavy rains and promote air flow. Roofs are 15 to 20 cm thick (closely spaced timber rafter, Mangalore tiles laid over the timber purlins spaced 45 cm c/c) with the attic floor space below. The roofs enclose a large insulated airspace with gable windows at the two ends to provide ventilation. This ensured air circulation thus, keeping the lower areas cooler.

Details of roof construction



Fenestrations and openings

The windows are located on the opposite sides to each other with similar dimensions. Maximum no. of openings is on the north and south facades. The sill is kept at the finished floor level measuring as 2.5 x 6 feet with the top 2.5 x 2.5ft of every window is kept open. The percentage of openings is more on the north and south facades and less on eastern and western facades where the sizes remain the same. Windows are fitted with heavy timber shutters.



Window on southern facade lits up the lobby area and also acts as outlet for the heated air

View of the hall on the first floor at 4p.m.

Building Materials and Finishes

The materials and finishes strongly contribute to this character. The materials, which were locally available such as mud, stone, timber bamboo, were used for the construction. The structure consisted of timber framed roof and bearing heavy stone mud mortar finished with lime plaster internally and externally. Pitched tiled roofs with traditional techniques of construction that evolved the vernacular architectural character overtime.

There are three environmental advantages:

1. Taking advantage of local wood and stone resources, while reducing the energy involved in transportation;
2. They provide rigid structure and a good resistance against the strong monsoon winds.
3. Mud absorbs the excess humidity, there by allowing the structure to breath.

Embodied energy of the vernacular houses

Traditional natural materials, for instance, wood, bamboo, stone, raw earth are good for energy performance. In terms of ecology, traditional materials possess clear advantages because of their local availability, low environmental impact in their production, renewability and even natural dissolution. Energy and resources are critical issues in today's context.

The General Energy Requirement (GER)

includes all the resources and energy, which were expended into a building, from processing, transportation, up to the completion of its construction. However, GER of a building as embodied energy coefficient, it is hard to achieve accuracy, due to its complexity. Transportation energy consumption has a big range of variety, depending on the situation, and does not constitute a reliable or general figure. And though construction energy consumption represents a valid figure, it is relatively small, roughly 10–15% of GER. So, in energy comparative analysis, Processing Energy Requirement (PER) is a more reliable and feasible factor for the evaluation of the embodied energy of a building. PER is the energy consumption involved in the exploitation and processing of a building material. Energy coefficient is calculated as Mg/kg.1

Energy density of typical houses

Materials and constructions of all traditional houses are quite same. Even within each type, individual houses vary widely in style. So, the most typical case with reference to each kind is selected. Due to the complexity of the size, structure and construction of various houses, comparison of the main components of each building, instead of taking the house as a whole is preferred. Data and conclusions are the result of quantitative analysis.

A house is composed of three main components: roof, wall, and floor. First, the weight of a component per square meter is calculated according to the construction of each member. Then, by multiplying the material's weight and its energy coefficient (MJ/kg), we will get the total energy per square meter, which is the density of energy of the main components. This format and the data of energy coefficient are mostly derived from the method outlined in the book (Architectural Material, Energy and Environment: Towards Ecological Oriented Development, by Dr. Bill Lawson and David Rudder, Australia (2000).) Some houses, although they are unique in building forms, share similar materials and construction, which means that they would have similar embodied energy. The design and construction of each house has to be carefully examined, in order to calculate their energy density.

To the format above, the tables of the relevant data are as follows:

Energy Density Of the traditional houses

Components	Construction	Sq.M (m)2	Volume (v)3	Density	Weight	Energy coefficient	Energy density	Total
Walling	Stone (300mm)	1	0.03	2700	810	1	810	810
Up Floor	wooden boards (30mm)	1	0.03	500	15	3.5	52.2	52.2
	Log beam 75x100 @450mm c/c	1	0.015	500	7.85	3.5	23.47	
Ground Floor	Concrete (80 mm)	1	0.08	2400	192	2.3	441.6	441.6
Roofing	wooden rafter	1	0.0228	500	11.418	3.5	39.93	

Energy Density of Modern house

Components	Construction	Sq.M (m)2	Volume (v)3	Density	Weight	Energy coefficient	Energy density	Total
Walling	brick 230x115x75	1	0.23	1700	391	5	1700	1955
Up Floor & Ground floor	Concrete (80 mm)	1	0.08	2400	192	2.3	441.6	441.6
Roofing	Concrete (100 mm)	1	0.1	2400	240	2.3	552	639.5
	Steel net	1			2.5	3.5		

Comparison of the cases

House Components	Walling	flooring	Roofing	Total
Vernacular dwelling	810	47.25	441.6	1298.85
Modern dwelling	1955	441.6	639.5	3036.10

As we see in the table, energy densities of all the main structural components of a new concrete house are greater than those of the traditional house. The vernacular house has the smallest energy density. This indicates that traditional houses possess a significant advantage in terms of embodied energy consumption.

Their attractiveness is especially apparent when we consider increasing shortages of energy and resources. The data above constitute a rational ground for rejecting the claims that "traditional materials should be completely replaced". Although these data form a rough estimation, this analysis gives the general understanding of the embodied energy and ecological value of our vernacular architectural heritage and need to search for a more sustainable method of development. Through re-assessing our traditional dwellings under an ecological perspective, we appreciate the wisdom embodied in the vernacular architecture in its relation tonature and its distinct advantage in low energy architecture.

References:

1 Krishnan Arvind, Nick Baker,Simos Yannas, SV Szokolay, *Climate responsive Architecture*, Tata McGraw-Hill Publishing Company Limited, New Delhi, 2001.

2 Richard Hyde: *Climate responsive design*; E& FNspon, London

3 Rapport, A. 1969. House Form and Culture. London: Prentice Hall.

4. Lawson Bill, Rudder David [Australian]. *Architectural material,energy and environment:* towards ecologically oriented development.Translated by Zhang, Mingshun, China Environmental Science Press, 2000

5. Wang Renping, Cai Zhenyu *"An ecological assessment of the vernacular architecture and of its embodied energy in Yunnan, China" Building and Environment*, volume 41.

6. Report prepared by consultancy cell, Rizvi college of architecture on Gorai Settlement Mumbai.

VERNACULAR ARCHITECTURE OF OLD SAFFEIN VILLAGE: THE LAST CHANCE FOR SAVING THE ARCHITECTURAL VALUES OF HISTORICAL KISH ISLAND - IRAN

Ali Afshar, Elias Salleh, John Ashraf Lucas

Abstract

Vernacular architecture of Iran is a result of a long term process of social and cultural development which has expanded all over the country. The hot and humid region of Iran situates in a long and thin coastline of the north side of the Persian Gulf. Kish Island, with more than 1,000 years of history, is located in this region with the same social and climatic factors. Vernacular houses of Old Saffein village are the best examples of the harmony among human, construction and the natural environment on Kish Island. This article seeks to emphasize the architectural concepts and ideas, as well as materials and technology which are applied in the vernacular architecture of Old Saffein, the last remaining vernacular architecture of Kish Island. To find its unique features, the study overviews background of the island by archival and observation methods. In addition, a study on appearance of the vernacular houses by physical observation is used. The results are based on an analysis of vernacular houses in Old Saffein village, to establish specific features which can be applied for guiding the process of developing contemporary housing appropriate for Kish Island community.

Keywords: *Iranian Architecture, Kish Island, Vernacular Architecture, Old Saffein*

Introduction

Vernacular architecture of Iran is a result of a long time processing of social and cultural development. Vernacular houses have followed the same process and contributed to a specific environmental system which is compatible with economy of the community. Based on these, the Iranian vernacular architecture is a meaningful one which is expanded all over the country.

The hot and humid region of Iran situates in a long and thin coastline of the north side of the Persian Gulf. The vernacular architecture of the region follows Iranian vernacular architecture with all of its values. Kish Island is located in this region with the same social and climatic factors. Kish Island has more than 1,000 years of history. During 1970s, the island had around 10 small villages[1] . Due to its selection as the first Free Tourist Zone of Iran, the traditional lifestyle in Kish Island gave way to dramatic and modern changes (Monsef 1978). Old Saffein is located on the north-west cost of Kish Island. Vernacular houses of Old Saffein are the best examples of the harmony among human, construction and the natural environment on Kish Island. There are approximately 1,500 natives housed in Old Saffein. These Iranian-Arab Muslim people live in organic type of settlements which are relatively high density. However, the houses have undergone a level of degradation. The total area of the village, including homes, private gardens and network accessibility, is around 30,000 square meters[2] .

Vernacular architecture of Old Saffein, through its adaptation over a long time to local context has the potential to provide a more appropriate response than the meaningless styles that are currently undermining Kish Island's architectural cohesion. This article attempts to investigate vernacular architecture in Old Saffein village to find its specific features. It also seeks to emphasize the architectural concepts and ideas and also construction and technologies which are applied in the vernacular architecture of Old Saffein, as the last opportunity for saving the architectural heritage of Kish Island.

Iranian Architecture

The Iranian vernacular architecture is based on five fundamental characteristics (Pirnia and Memarian 1992): Compatibility with the needs of people (*Mardom-vari*), Inward-looking (*Daroon-geraei*), Avoiding un-necessities (*Parhiz az bihoodegi*), Self-efficiency (*Khod-basandegi*), and Structural rigidity (*Niaresh*). These codes concern building quality from two aspects: firstly, concepts and ideas and secondly, construction and technology (*Vakili-Ardebili* and *Boussabaine* 2006). *Mardom-vari*, *Daroon-geraei* and *Parhiz az bihoodegi* address quality of concept and idea (socio-economical aspects), and *Khod-basandegi* and *Niaresh* (*year*) point out the issues related to construction and technology (physical aspects).

In Iranian vernacular architecture compatibility with the needs of people is called *Mardom-vari*, which in simple words means 'architecture for people'. It clarifies the relationship between functionality of buildings and their user needs. Family and its privacy are fundamental factors in Persian culture. In the traditional custom

[1] *Sahab Institute, Department of Geographical Studies. Kish Island: Yesterday & Today (In Persian). Tehran: Sahab Geographic and Carographic Publication, 1998.*

[2] *Kish Free Zone Organization. Comparative Report of the first 11 Months of the Year 1386 (In Persian) . Kish Free Zone Organization, 2008.*

outsiders should not have direct view in to the house. Inward-looking, or *Daroon-Geraei*, refers to family and its privacy. Avoiding the un-necessities or in Persian, *arhiz-az-bihoodegi* explains about achieving the highest act for buildings' users in relation to issues such as waste control, cost, and avoiding construction loads. In addition, satisfying people's needs forms an essential part of Iranian vernacular architecture, based on a socio-economic system that meets daily needs and functions (Manzoor 1989).

Self-efficiency, or *Khod-basandegi*, is reflected by using local materials (*Boom-avard* in Persian) and natural resources that have provided fundamental characteristics for the Iranian architecture during the history. This architecture directly attempts to create an environment that responds to man's needs, of becoming attuned to the materials and processes available and using them in the most effective way (Manzoor 1989). Furthermore, Iranian vernacular construction techniques comprise the basic elements needed to build statically and dynamically to achieve the design construction in accordance with existing levels of knowledge and technology. Finally, structural rigidity, or *Niaresh* in Persian, explains necessary requirements in building technologies (static and dynamic dimensions of buildings).

Vernacular Architecture on the Northern Edge of the Persian Gulf Region

The hot and humid region of Iran situates in a long and thin coastline of north side of the Persian Gulf (Figure 1 & Figure 2). The long summers are hot and humid and the short winters are mild. Humidity in all season is more than 60% during the year. Annual precipitation is very low and most of which is in the fall and winter. The yearly average of raining is 145 mm. The mean temperature is between 30° - 34° C during spring and summer. Excellent examples of vernacular architecture of this region can be found in some coastal settlements like Bushehr, Bandar-e Lengeh, Bandar-e Kong and Laft. The most important feature of vernacular architecture in this area is adaptation to the environment and consideration to economic factors through energy saving (Babakrad 1985). In this region, the characteristics of vernacular architecture in general are reflected by one-storey dwelling units with courtyards, high surrounding walls, large windows (towards the courtyard), and high spaces used for increasing natural ventilation (Azari-Najafabadi, et al. 2006). Most of the rooms face east and small rooms are located on other sides. In addition, due to the high humidity,

Figure 1: Map of Iran

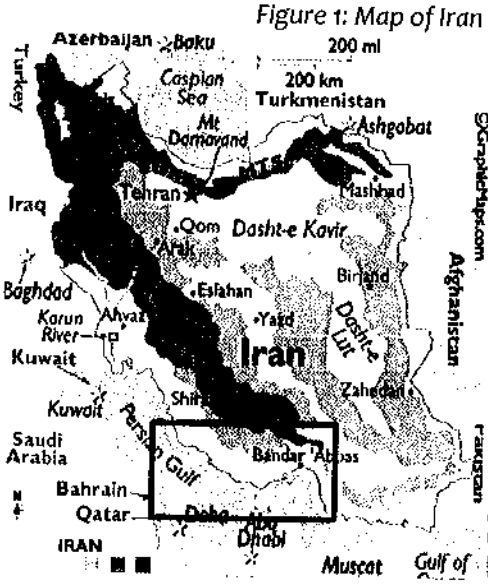
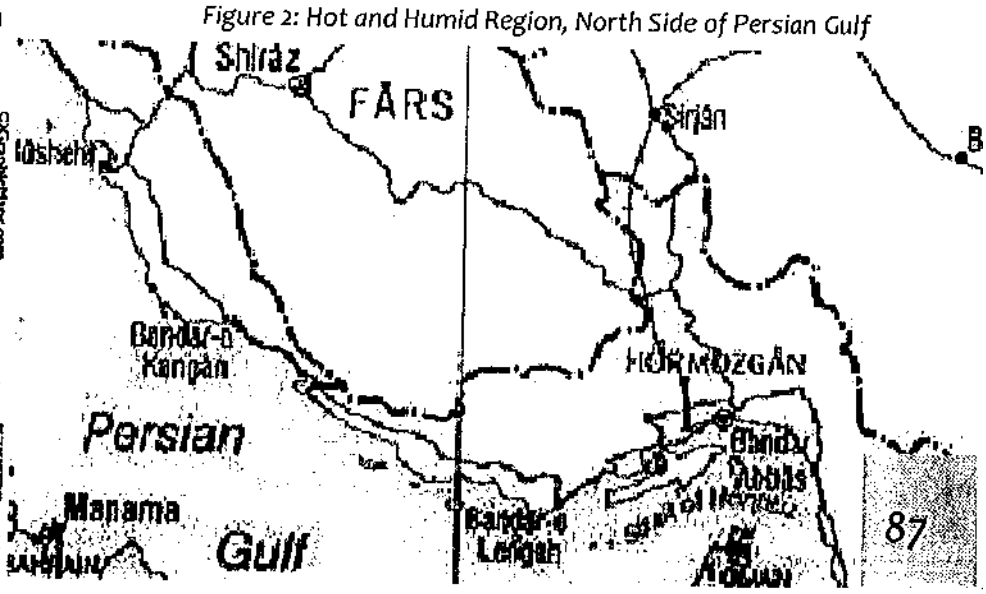


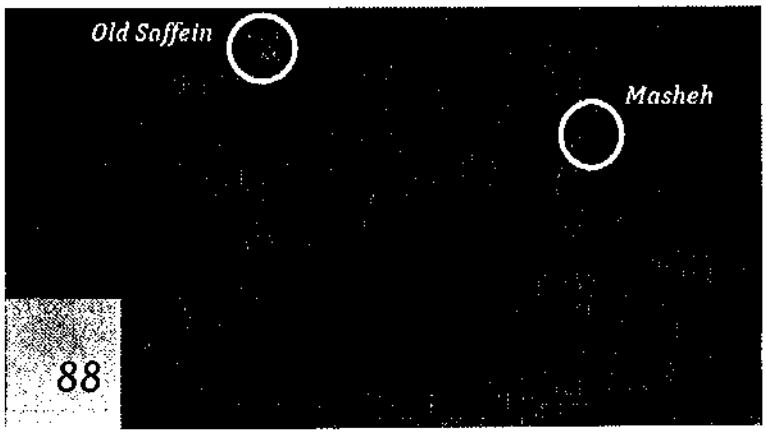
Figure 2: Hot and Humid Region, North Side of Persian Gulf



there are no basements in the buildings. The roofs, which are usually flat, are used as sleeping area during summer nights. The houses usually do not have any windows on the external walls to prevent indoor activities from being viewed from the outside. Additionally, it creates a better thermal exchange. Adaptation to the environment and the use of natural energy are fundamental beliefs in this vernacular architecture (Babakrad 1985, Pourjafar 1996). Furthermore, the wind tower is the dominant feature in coastal cities. The size and height will be directly related to their distance from the gulf. Limestone and adobe are commonly used, with the former providing good solar reflection, due to its light colour (Azari-Najafabadi, et al. 2006). Kish Island has similar climatic factors to the above mentioned cities. All of them have similar Culture as well as traditional house construction methods.

Old Saffein Village on Kish Island

Kish Island gained prominence due to its natural and geographical features, between 1960 and 1970. During that time, the island had around 10 small villages and the most flourished were called *Masheh* and *Saffein* (Figure 3).



Due to its status as a Free Tourist Zone, the traditional lifestyle gave way to dramatic and modern changes on Kish Island. North-east coast of the Island was selected as the main tourist area in which Masheh village was located. It resulted in all residents of Masheh village to be moved to an area adjacent to Saffein, on the north-west cost, in 1975. Nowadays, Old Saffein village is the last settlement in which indigenous people are still living with all of the values of this the fishing tools and the crops (Mokhtarpour 1999). The *mozif* (a special room for guests) is located in this yard (Figure 7). If the land is too small for the guest yard, there is a direct door to the *mozif* from street. The indigenous people keep animals in the backyard. It is separated from the main yard by some short walls.

In addition, Islam encourages the maintenance of strong family ties throughistorical island (Mokhtarpour 1996).

The subject of interest in this article covers a broad spectrum of vernacular qualities. It is sensitive to human dimensions and needs, to materials, to techniques, to climates, to energy efficiency, and finally to nature.

Research Methodology

This study employs two stages for finding the characteristic features of vernacular architecture of Old Saffein in Kish Island. The first stage overviews background of the island in fields of vernacular architecture by archival and observation study. It identifies socio-cultural characteristics of Kish Island for understanding the occupants of these houses.

Figure 3: Location of Masheh village and Old Saffein Village on Kish Island (1975)

It also studies vernacular architecture in Iran and the northern edge of the Persian Gulf, and examines quality of that in Kish. Resources for review are the Iranian and international documents including books and internet, research articles from related media in the study area. It also includes review on government publications, studies which have been done specially by *Mokhtarpour* as an anthropologist, maps, photographs, petitions pertaining to subject from 1960 to the present, and statistics and information of Kish from 1960 until now. In the second stage, there is a study on appearance of the vernacular houses by physical observation using photographs and free-hand drawings. In addition, some spatial dimensions were measured in detail for more clarification.

Concepts and Ideas

As mentioned above, three fundamental characteristics of Iranian vernacular architecture concern concepts and ideas. This section addresses two aspects: site planning and specific building elements. Both are affected by concepts and ideas of people who are building the houses and are living there.

Site Planning

In this aspect of vernacular houses, threefactors are studied. The first is orientation valuable shades. which helps to minimize high temperatures inside the houses. In addition, the direction of Kiblah is an important issue in orientation of Muslim's dwellings. The second one is site organization, which is affected by social, economic and environmental values of the community. The third one is vegetation, which has very important role in creating valuable shades.

The vernacular houses of Old Saffein are created with summer and winter sections. The summer spaces are facing towards the gulf and the winter spaces are on the opposite side (Figure 4). The orientation of the houses is mostly on north-south direction but expansion of the rooms is in east-west direction. Moreover, the Kiblah plays an important role in orientation of these traditional dwellings as a Muslim community. Additionally, mosques are the heart of the villages and all buildings are built around it (Figure 5).

The region's vernacular architecture normally consists of a series of spaces grounded around a courtyard (Azari-Najafabadi, et al. 2006). In Old Saffein vernacular architecture generally

Figure 4: Vernacular house, Kish

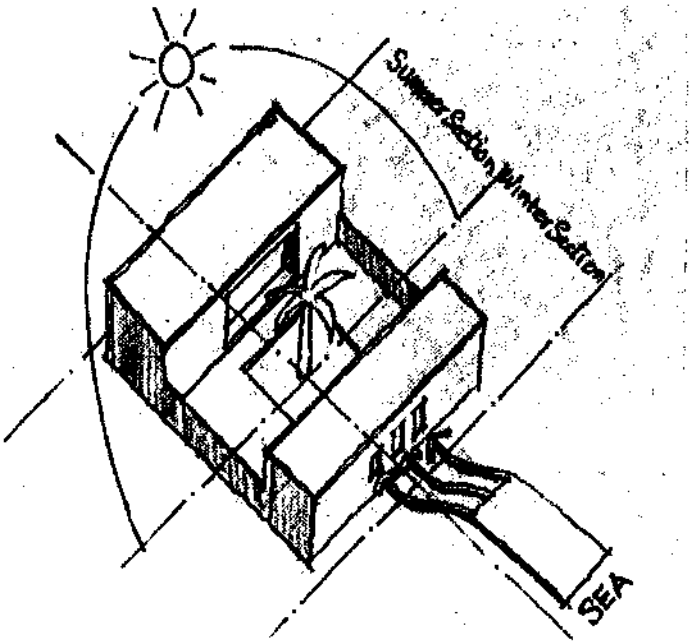


Figure 5: Jam'e Mosque in Centre of Old Saffein

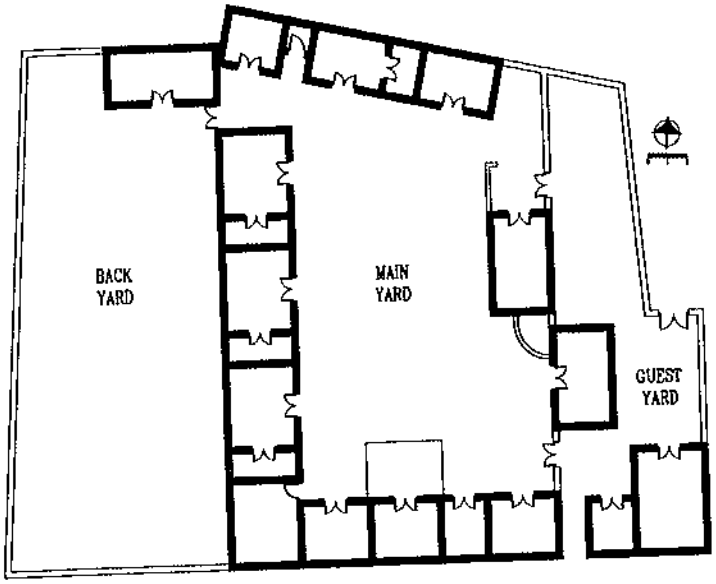


Figure6: A vernacular house plan, Old Saffein

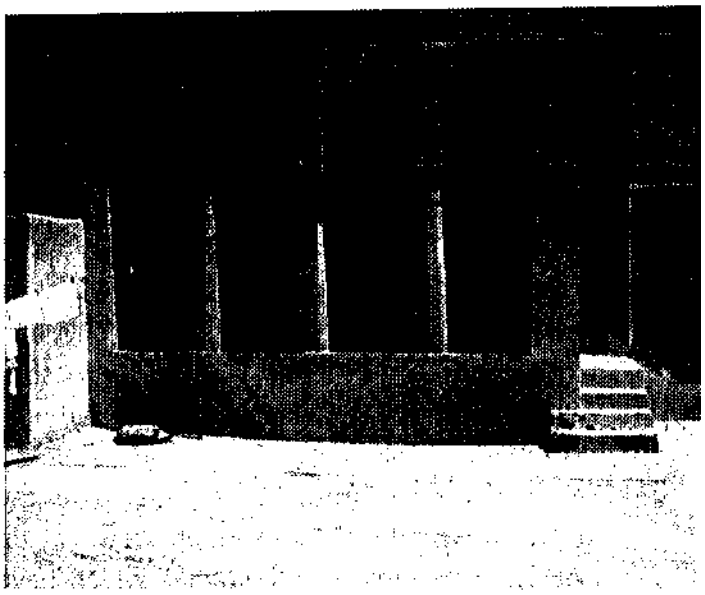
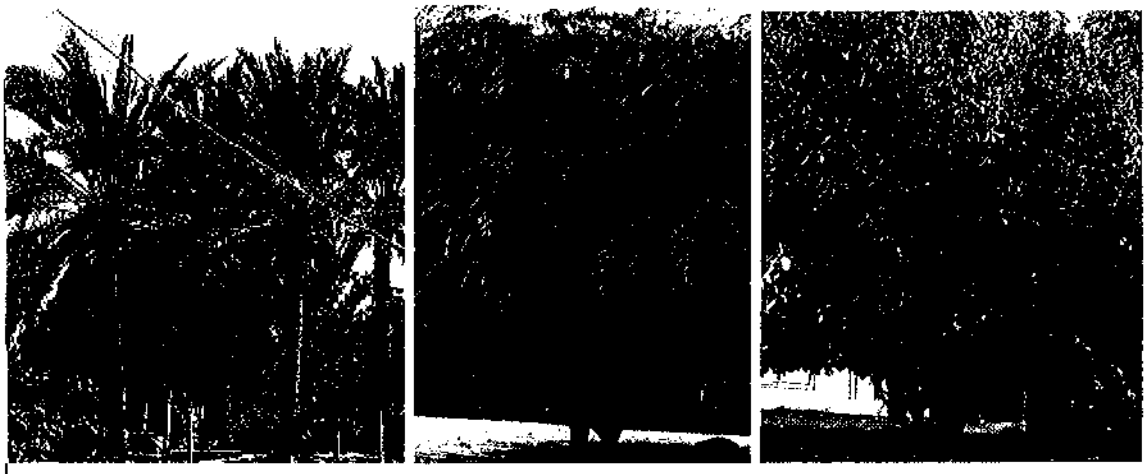


Figure 7: A mozif in a vernacular house

is inward-looking. The old large houses include three different courtyards with different functions : *Hoy_al_beyt* (the main yard), *Hoy_al_majles* (the guest yard) and *zaribe_al_saghirah* (the back yard). There are two different entrances in the houses, the main entrance opens to the main yard and the guest entrance opens to the guest's yard. The living room (*moraba'eh*), bedrooms (*otagh*), kitchen (*matbakh*) and toilet surround the main yard. Nearby all of the bedrooms there is a place for bathing known as *qati'eh* (Figure 6). *Qati'eh* is separated from the *otagh* with a wall that increases in height until 70 cm to the ceiling. *Otaghs* is accessed through a corridor called *Sabat*. At a corner of the yard, there is a place forholding the fishing tools and the crops (Mokhtarpour 1999). The *mozif* (a special room for guests) is located in this yard (Figure 7). If the land is too small for the guest yard, there is a direct door to the *mozif* from street. The indigenous people keep animals in the backyard. It is separated from the main yard by some short walls.

In addition, Islam encourages the maintenance of strong family ties throug the extended family concept. The idea of taking appropriate measures to prevent the family splitting up by having a design preference for extended family living in a single house are important principles for Muslim communities (Mortada 2003). Due to this, the houses are flexible for expansion when family members increase in number. Because of their valuable shading properties



(a) (b) (c)

Figure8:
(a) Nakhl'e Khoram
(b) Kahoor (c) Loor

[3] *All of local (Arabic) words in this article are borrowed from the book: "Two Years with Indigenous People in Kish Island: The Anthropological Study"; written by Rajabali Mokhtarpour.*

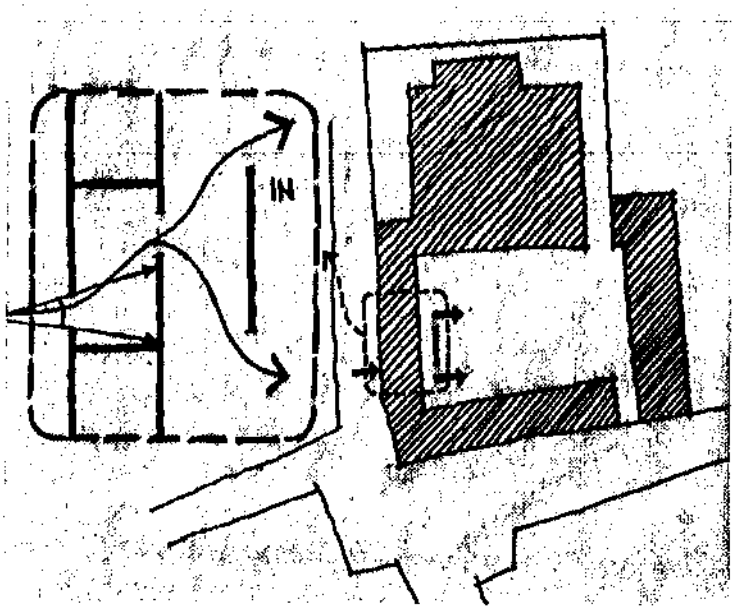


Figure 10: An Estar in Plan, Old Saffein

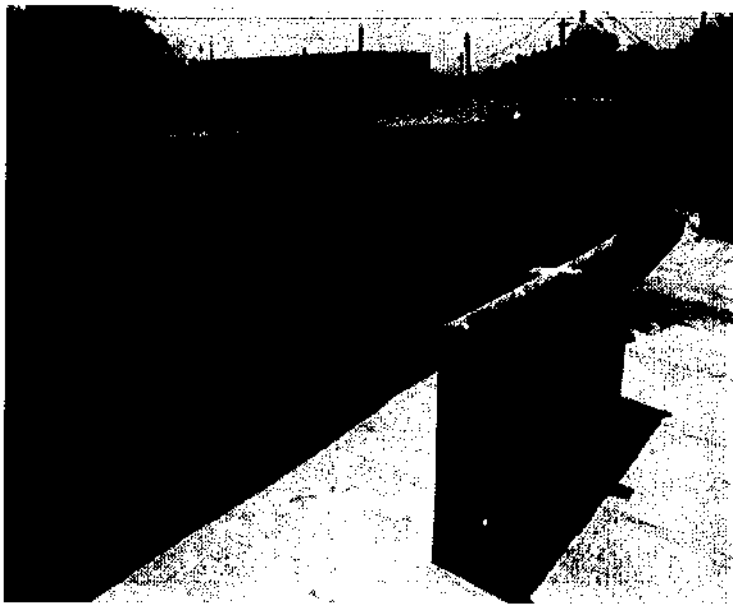


Figure 11: An Estar in Photo, Old Saffein

trees play an important role in vernacular architecture of the village. Considering that the wind is blowing for the duration of year, vegetation can mitigate the high temperature, and make the surrounding spaces more comfortable. In addition, summer crops are cultivated in the backyards. Furthermore, some regional trees such as *loor* (Ficus benghalensis), *kahoor* (Prosopis Cineraria) and *nakhl'e khorma* (Phoenia dactylifera) have been cultivated in main yards (Figures 8: a,b,c).

Specific Building Elements

Openings, transitional spaces, special shading devices and architectural elements are specific in vernacular architecture for each region of Iran. These elements have common function in hot and humid region based on the similar environment. Vernacular architecture of Old Saffein follows the same concepts and ideas but in different shape. The differences are presented in following section. The severe climate of the hot and humid region has determined that all of the windows and porticos are oriented towards the courtyards (Azari-Najafabadi, et al. 2006). In Old Saffein, windows or porticos are not seen from the streets. In other words, the building is solid from these views (Figure 9).

In most of the houses, a short divider is erected in front of the main entrance door, with a height of about 2 meters and is called estar (Figures 10 & 11). This is a principle idea in vernacular architecture of Kish Island that visitors should never view directly into the house (Mokhtarpour 1999). The length of the estar depends on the width of the door, to prevent the inside of the house being viewed

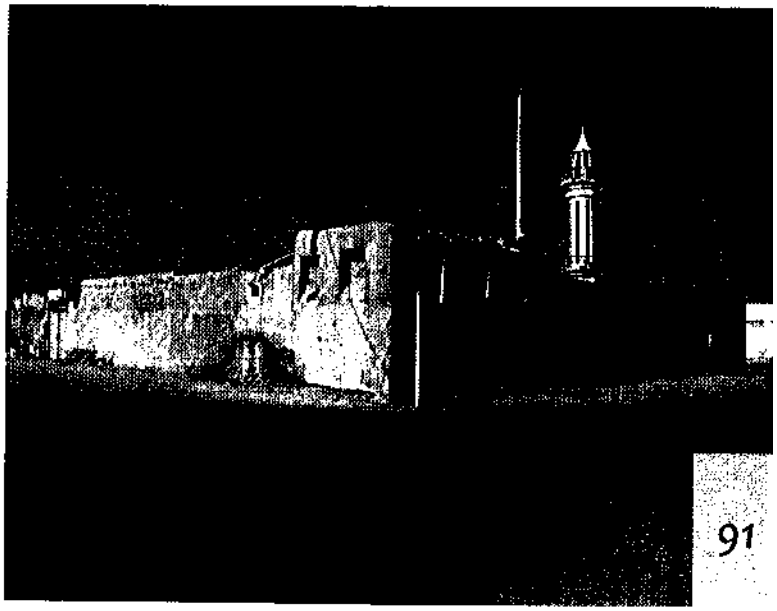


Figure 9: A House without Outside Opening, Old Saffein

Figure 12: Entrance to Houses, Old Saffein

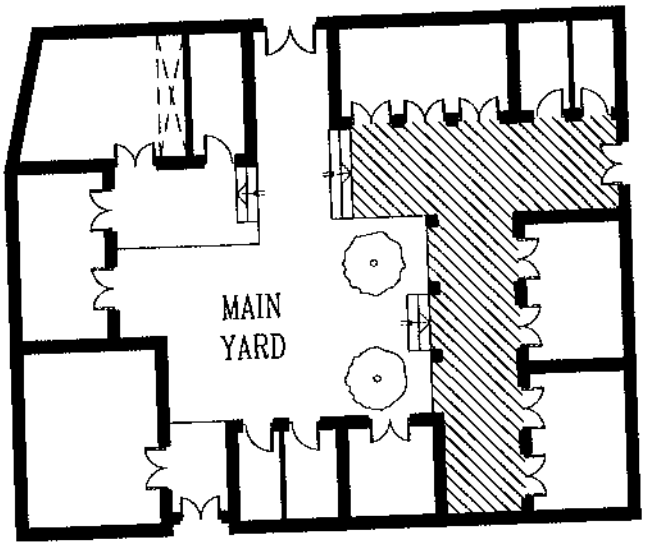
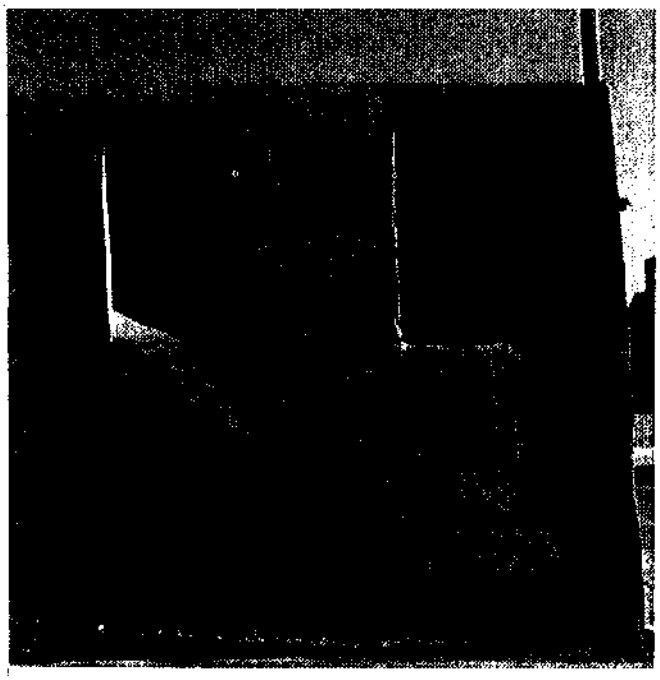
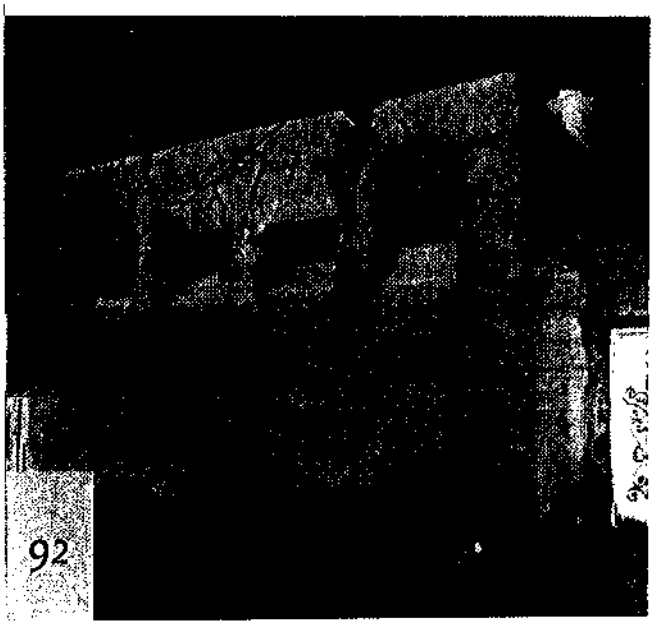


Figure 13: Sabat in Vernacular House, Old Saffein

Figures 14 & 15: Specific Wind-Catcher (Bad-gir), Old Saffein





from outside. In some cases, small halls are used for entering the residence.

Maximizing shading is one of the significant features in local architecture of the Island. In Old Saffein, most of the entrance doors have sunshade (Figure 12). This element prevents the penetration of solar radiation into the house. Furthermore, large numbers of the traditional houses have corridors that prevent solar radiation from entering into the rooms. Additionally, it is a connector between yards and rooms (Figure 13). These porticos, in the region, are another solution to protect the building against solar radiation. Moreover, many of the outdoor activities are carried out inside these porticos (Babakrad 1985). Wind-catcher or bad-gir is the most important monumental element in architecture of this part of Iran. This is the other strategy to bring the cool sea breezes inside the building (Azari-Najafabadi, et al. 2006). The shape and size of the wind-catchers in Old Saffein are different from the wind-catchers found in other places in South of Iran (Figures 14 & 15). In this place, bad-gir is a dent on the facades with a split on the floor. The wind streams through this split into the rooms.

Construction and Technology

There are two fundamental characteristics in Iranian vernacular architecture concerning construction and technology. These are building design and

local construction which are described below.

Building Design

Form, building height and climatic solutions are three subjects which are affected by available materials, resources and technology.

Compactness is the technique of minimizing the amount of building surface exposed to the direct radiation of the sun (Ardalan 1976). In the village, compactness can be specified in many ways, but it is most clearly evidenced by the ratio of exposed building surface to enclosed living volume (Figure 16). The shadow network is formed by a number of different techniques. The most common component of the shadow network is a path, or kucheh, with shade created by its narrow width and high building walls which form its edge.

Since the region is located near the gulf and the level of sub-ground water is near the surface, buildings are usually constructed without basement. Most of the houses in Old Saffein are one-storey high. The floor level of the rooms is mostly built between 70 cm to 150 cm higher than the yard's floor (Figure 17). This is to allow for natural ventilation which is the most important factor for increasing the high temperature. It is also as a precaution against the consequences of sudden rainfalls. There is however a few two-storey buildings in old settlements in Kish Island that are mostly owned by rich people. The name of second storey is Ghorfeh (Mokhtarpour 1999). It is usually used for summer residing. Also, the courtyard's wall are tall for casting shadows on floor of narrow streets and obstructing indoor of the house from outsiders.

To create cross ventilation inside spaces and to reduce the heat, the lane windows and the courtyard windows are often built opposite to each other. Moreover, the rooms usually have openings on sides with positive and negative pressure. The other difference refers to location of windows and porticos.

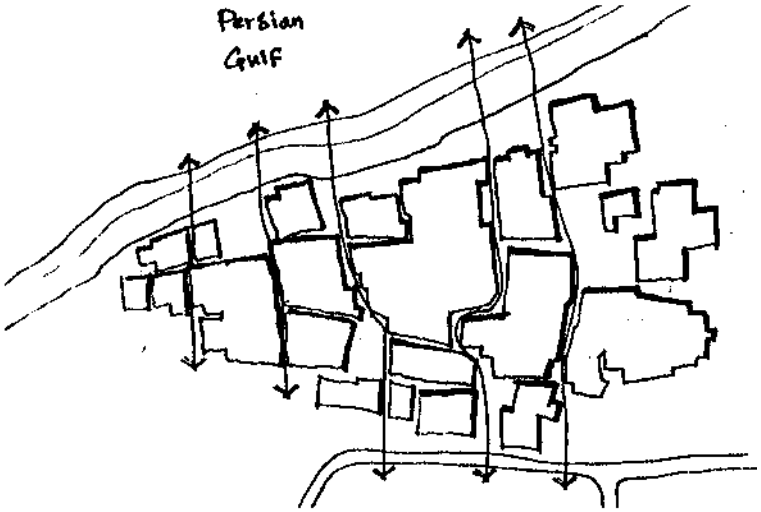


Figure 16: Compactness in Fabric, Old Saffein

Figure17: A Section of A Houses, Old Saffein

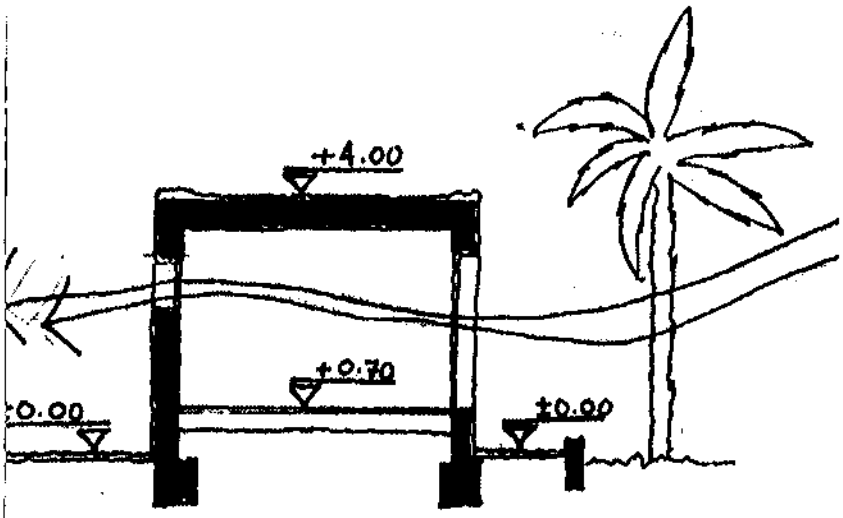
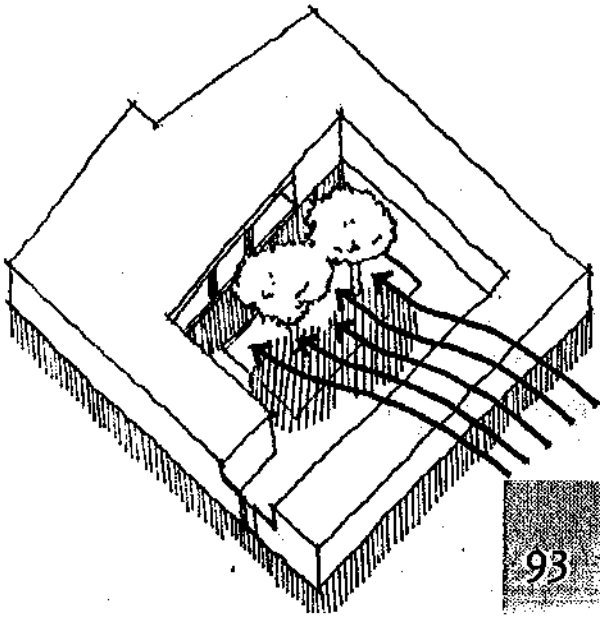


Figure 18: Natural Ventilation, Old Saffein



The height of buildings as well as smaller courtyards allow walls, and also, vegetation to shade the courtyards and cool the buildings and thus, support convective air currents between the courtyard and the spaces around it and reduce the high temperatures (Figure 18).

Local Construction

Use of local materials and natural resources has provided fundamental characteristics for the Iranian architecture all around the country. Local construction with local materials is one of the most important factors for making identity for all vernacular architecture.

Coral stones, coral mortar, wooden beam and mat are fundamental materials in vernacular buildings of Old Saffein. Wooden beam and mat are brought to the island from outside, but coral stone and sand which are basic local material for construction are found all around the island. Coral affects on the character of this architecture by its specific features especially the bright milky colour. The residents also reuse the materials of ruined building when they build new one.In vernacular houses of Old Saffein, the floors are covered by a special 2 cm thick mortar called saban (Mokhtarpour 1999). It is a mixture of coral pieces, broken cochlea and coral mortar. The mortar is spread on hardcore. Due to high moisture, the owners renew the flooring every 3 years. Coral stone is the principal material for building the walls. The wall does not have footing but there is just a row of stones for fixing the direction and place of them.

External walls with 50 cm width are built by coral stone and a local mud which are covered by coral mortar (Figure 19). The internal walls are covered by a special white mortar (a mixture of coastal sand, argil and water). In the village there are a few buildings made of bricks built for their rich owners. The main materials to build the roofs are wooden beam (Chandal), plank (Bas'cil) and spread mat (Mangur). The different layers of roof are built in-situ consisting of wooden beams, planks fixed on beams by nails, spread mat, soft mud with 8 to 10 cm thickness, and straw_mud as the final cover with 5 cm thickness (Figure 20).

Discussion and Conclusion

Iranian vernacular architecture is mostly defined for hot and dry region of the country

Figure 19: Wall Section

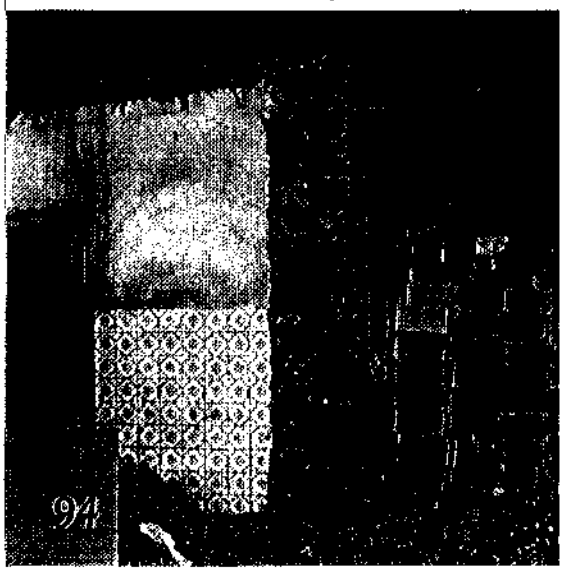
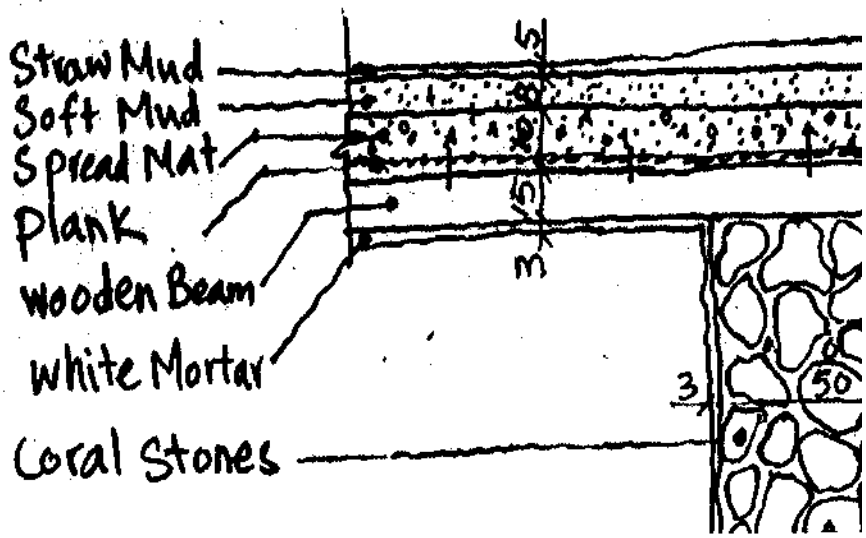


Figure 20: Roof's Layers



which is located on the edge of big central desert. In socio-cultural aspect vernacular architecture of the hot and humid region follows the Iranian architecture but in physical aspect, there are some differences. The reason of this is the higher level of humidity found in the area on the edge of the Persian Gulf. As an example, in the main yards of the vernacular houses in central Iran, shadow and water pool are commonly used for cooling the spaces by natural ventilation; however, in the southern side of Iran, only shadow is used for this purpose because of high humidity. Kish Island is located in a this region of the country. As a conclusion, Table 1 presents the characteristics of vernacular architecture of the region and Kish Island which refers to general and fundamental characteristics in Iranian vernacular architecture.

Vernacular architecture of Kish Island follows the concepts and ideas, as well as building technologies of the surrounding region. There are some specific aspects, mostly physical, in Kish vernacular architecture that cannot be found elsewhere. The following five features are specific for vernacular architecture of Kish Island (Old Saffein):

1. Orientation: Contrary to the regional orientation of houses which face southward, vernacular houses in Old Saffein face northward in order to catch the valuable breeze coming from that direction.

2. Vegetation: Kahoor and Loor are two types of trees which are less found in other places in the region except on Kish Island.

Table 1: Vernacular Architecture Characteristics in Iran, North Edge of Persian Gulf and Kish Island

	Iran		North Edge of Persian Gulf		Kish Island	
	Fundamental Characteristics	General Characteristics				
Resources	*Pirnia, Memarian (1992)*	*Vakili,Ardebili , Boussabaine (2006)*	*Azari-Najafabadi(2006) Pourjafar(1996), Babakrad(1985)*		*Self Observation by the article's authers Archival Study: Mokhtar-pour (1996, 2002), Monsef (1978)*	
Characteristics of Vernacular Architecture	Accordance with People Needs *(Mardomvari)*	Concept and Idea	Site Planning	1. The Kiblah role in orientation 2. the intense solar radiation 3. Inward-looking architecture 4. Traditional Privecy Model 5. Courtyard 6. Extended form of family 7. Vegetation valuable shading	Orientation	Mostly on north-south direction
					Organization	The main yard, the guest's yard and the back yard
					Lay Out	Separated spaces with specific door
	Inward-Looking *(Daroon-Gerael)*				Vegetation	*Loor, Kahoor, Nakhl-e khorma*
	Avoidance of Un-necessary *(Parhiz az bihoodegi)*		Building Elements	1. Windows open into courtyard 2. Some window in street to catch the wind 3. preventing inside of the houses from outsider 4. Maximize the shading 5. Wind-catcher	Openings	No windows to streets
					Transitional Spaces	*Estor*: a short divider is sat in opposite of the main entrance
					Shading Devices	*Sabat* is prevents for solar radiation into the rooms
					Architectural Elements	*Bad-gir taghche-ei: bad-gir* is a dent on the facades
	Self-Efficiency *(Khod-basandegi)*	Construction And Technology	Building Design	1. The compact setting 2. One storey dwellings 3. Large inside windows 4. Rooms behind corridors 5. Room's floor level upper than yard's floor	Form	Compact urban form
					Height	Mostly one-storey high
					Climatic Solution	Making shadow on main yards
	Rigidity *(Nioresh)*		Construction	1. covering by bright color 2.Flat roofs 3.Limestone is basic material	Materials	Coral stone is basic materials
					Floor	Coral stone + Soft local mud
					Wall	Coral stone are covered by straw-mud
					Roof	Wooden beam + Plank + Mat

3. Privacy: Estar is a specific architectural element in Vernacular architecture of Kish Island. It is a short divider of 2 meters high, placed in opposite of the main entrance door to provide privacy for the family from public view.

4. Wind-catcher: The shape and size of the wind-catchers in Old Saffein are different from other wind-catchers in Iran. The speed and direction of local wind on the island cause special *bad-gir* which is called *tagh'che* ei. In Old Saffein, *bad-gir* is a dent on the facades with a split on the floor. The wind streams through this split into the rooms.

5. Material: Kish Island is a coral island. Therefore, 'coral stone' is the main building material which gives a very special identity to the vernacular architecture of Old Saffein.

Bibliography

Ardalan, Nader. *"The Islamic City: Physical Lay-Out."* World of Islam Festival. London: World of Islam Festival Trust, 1976. 46.

Azari-Najafabadi, Rahman, Kimia Daneshvar, Sahar Pakseresht, and sara Pooryousefnejad. *"Role of Wind in Vernacular Architecture of Hot and Humid Region of Iran."* Texas A&M University, 2006.

Babakrad, Javad. "Vernacular Architecture in South of Iran, Coastal State (In Persian)." In *Iranian Architecture by 23 Authors*, 337-342. Tehran: Mojjarad, 1985.

Manzoor, Shokrollah. *Evolving the Tradition (Revitalization of Vernacular Architectural Patterns in Iran)*. Housing Design, School of Architecture, Goteborg: Chalmers University of Technology, 1989, 179.

Mokhtarpour, Rajabali. *Archeology Reports on Historical Kish Island (In persian)*. Research Center for Archeology of Heritage Organization, Tehran: Kish Free Zone Organization, 1996.

Mokhtarpour, Rajabali. *From Family House to Emploee Residence: Moving the Traditional Houses from Mashe to New Saffein in a Glance (In Persian)*. Kish Island: Kish Free Zone Organization, 2002.

—. *Two Years with Indigenous People in Kish Island: The Antropological Study (In Persian)*. Kish Island: Kish Tourism Service Company, 1999.

Monsef, Mahmood, interview by Ebrahim Zalzadeh. *The birth of an Architecture: Architecture of Pahlavi era (In Persian) Tehran*: Rastakhiz Newspaper (718), (September 16, 1978): 18.

Mortada, Hisham. *Traditional Islamic Principles of Built Environment*. London: Routledge, 2003.

Pirnia, Mohammad Karim, and Gholamhosein Memarian. *The Study of Styles in Iranian Architecture (In persian)*. Tehran: University of Science and Technology, Iran, 1992.

Pourjafar, Mohammadreza. "The Role of Environment in Architectre and Urbanism of Persian Gulf Region (In Persian)." *The first congress on history of Iranian architecture and urbanism: Arg-e Bam*. Tehran: Iran Cultural Heritage, Handicrafts and Tourism Organization, 1996. 191-202.

Vakili-Ardebili, Ali, and Abdel Halim Boussabaine. "Quality Concept in Persian Precedent Architecture: A Lesson in Eco-Building Desiagn." *The 23rd Conference on Passive and Low Energy Architecture*. Geneva, Switzerland: PELA 2006, 2006.

THE ROLES OF TRADITION AND VERNACULAR IN POST COLONIAL ELITE DOMESTIC ARCHITECTURE OF CEYLON (SRI LANKA)

Nishan Rasanga Wijetunge

Abstract

Following a brief stint of independent-rule from 1948 under a class of post-colonial third culture, a political breakthrough came in 1956, when a faction of local-elite with a strong nationalist agenda came into power in Ceylon. Within this politically-induced backdrop, several nascent Ceylonese architects felt the urgency for a new architectural identity for the nation. The domestic architectural rubric they derived on behalf of the country's newly-defined elite stratum is referred to as Modern regional architecture in the tropics (MRAT), which in another sense could be postulated as Designed-vernacular. MRAT was based on Architectural Modernism, and epitomized in its making the essence of the country's proverbial indigenous architectural tradition of Kandyan vernacular. Furthermore, the selective-traditions of colonial-Dutch and colonial-British of hybrid parentage were incorporated to the formula. This modus operandi was further-enhanced through traits obtained from the local arts and crafts movement by the rubric's proponents such as Geoffrey Bawa. This rubric gradually culminated as an immense success over the years, to become the flagship elite domestic-style of the island. Moreover, it became the ideal manifestation of the immutable position of country's core-oriented elites while securing its posterity.

Conversely, a lone contemporary counterpart challenged this position by embracing a socialist agenda and attempted to realize it through an expressionist modernism, with the emphasis on the international-style technology. By the exclusion from his designs, the elements of tradition and vernacular- which by that time had become a quintessential part of the representational repertoire of elite domestic architecture- Valentine Gunasekara strived to disseminate the notion of a more equitable society, perhaps somewhat less-successfully.

The paper attempts to adduce the triumph of the cross-fertilized MRAT, as against its relegated modern expressionist counterpart, in order to discern the respective roles played by tradition and vernacular in the scenario.

Keywords: *Tradition, Vernacular, Postcolonial, Elite domestic architecture*

Introduction

The contemporary global architectural milieu is shrouded by ambivalence due to precarious architectural practices instigated by capitalism and globalization. Homogenizing forces of the mass-media and built mediocrities of the international fashions have relegated traditional continuity (Lim and Beng, 1998: 12-18). Hence, in such a context, questioning the respective roles of tradition and vernacular in contemporary global architecture becomes imperative to determine future prospects.

If this reproach is directed at Sri Lanka, addressing its post-colonial period becomes indispensable; where reverting back to vernacular tradition with the essential patronage of its elites was explicitly spawned. The two most celebrated domestic architectural rubrics of Sri Lanka's post-colonial period could be discerned as vernacular-biased *Neo-Regionalism*, and *Expressionist Architectural Modernism* –which dwelled on innovative technology. Hence, postulating reasons for the apparent relegation of the latter by the former antithesis is of crucial importance, in adducing the pivotal roles played by tradition and vernacular respectively.

Tradition in Architecture

The word "*tradition*" originates from the Latin verb "*trado-transdo*", which means is "*to pass on to another*", or "*to transmit possession*". Tradition is thus seen as a duel process of preservation as well as transmission (Beng, 1994: 21). According to T.S Eliot (in Beng, 1994: 21), a true sense of tradition is a sense of the timeless and the temporal together. "*Tradition... cannot be inherited, and if you want it you must obtain it by great labour. It nvolves in the first place, a historical sense, which... involves a perception, not only of the pastness of the past, but of its presence...*". Although the definition of tradition is commonly perceived to be a set of fixed attributes, many repudiate this view and believe it to be a series of layers transformed over time (Lim and Beng, 1998: 54). Hobsbawn postulates the notion of "*invented tradition*", which includes both traditions that are gradually invented, constructed and formally instituted as well as the ones to emerge in a less easily-defined manner within a short time frame. He defines tradition as "*... taken to mean a set of practices, normally governed by overtly or tacitly accepted rules and of a ritual or symbolic nature, which seeks to inculcate certain values and norms of behavior by repetition, which automatically implies continuity with the past. In fact, where possible, they normally attempt to establish continuity with a suitable historic past*" (Hobsbawn and Ranger, 1983: 1). Throughout history, discontinuities in architectural traditions have been prolific[1]. In traditional societies, cultural processes and external forces take a long time to be considered as "established". Once this is completed, they sustain for extended periods of time (Lim and Beng, 1998: 55). Williams (1980: 39) however, disseminates that, what may pass-off as "cultural traditions" or the "significant past" is actually selective traditions[2]. Hence, it could be perceived that traditions are always contested, transformed, resisted and invented over time. It could be affirmed with a great number of examples from around the world that, in traditional societies, age-old architectural forms have reached high sophistication. Albeit their slow denigration, they remain more expressive and sympathetic to the aspirations of the people than any contemporary contender. The expressions of

these surviving traditions attain vigor and conviction through their local craftsmen practices, which truly celebrate their devotion, contemplation and commemoration (Lim and Beng, 1998: 54). On the other hand, in the field of architecture a dichotomy exists in the form of 'grand design tradition' and, its antithesis, the 'folk tradition'. Rapoport postulates that the monument-buildings belong to the grand design tradition, and are erected to impress either the populace in terms of the power of the patron, or peer-group of designers and cognoscenti with the cleverness of designer and good taste of patron. The folk tradition in contrast, is said to be the direct unselfconscious translation into physical form of a culture; its needs and values, as well as desires, dreams and passions. "The folk tradition is much more closely related to the culture of the majority and life as it is really lived than the grand design tradition, which represents the culture of the elites" (Rapoport, 1969: 2)[3].

Vernacular Identity imbued in Tradition

Culture is generally conceived as "*the way of life*". It can be best-defined through its specific characteristics; namely, "*the accepted way of doing things, the socially unacceptable ways and the implicit ideals*" (Rapoport, 1969: 47). It plays a seminal role in the construction of society; which could either be culturally homogeneous or heterogeneous. Both these situations could possibly find an enhanced degree of sophistication owing to the existence of sub-cultures within a given culture[4]. Culture imbues various traditions relating to the assorted functions of human life. In other words, culture ensures that its citizens abide by different sets of rules set by tradition, with relation to the performance of these functions respectively. Such rules ensure that whatever underlying factors[5] behind them are preserved, and then transferred for posterity, while manifesting a unique identity with relation to a given function. The notion of identity has always been intricately-related to traditions; as lingering on to numerous traditions is what gives a society its identity. Douglas and d' Harnoncourt (in Lim and Beng, 1998: 54) postulate that, "*To rob a people of its tradition is to rob it of inborn strength and identity*". Since making buildings is a basic necessity of the human repertoire, different cultures from around the world have primordially developed their very own built traditions. Since every society essentially entails a "high" culture that influences "other levels" of cultures, as suggested by Bottomore (1993: 116)[6], in terms of building traditions, this distinction could be further-elaborated – high culture chooses "grand design tradition" whilst other cultural levels are relegated to "vernacular tradition". Hence, Vernacular becomes a modus operandi, with a unique identity of its own. "*Implicit in the term 'vernacular' is the notion of building as an organic process, involving society as a whole*" (Lim and Beng, 1998: 10). Perceived as "architecture without architects" as suggested by Beng (1994: 19); edifices of vernacular are not merely perceived to be the brainchild of any individual architect, but the product of an entire community as a whole; working through its history (Lim and Beng, 1998: 10). Vernacular structures are invariably built by local craftsmen of anonymity with local techniques and materials, reflecting society's accumulated wisdom and collective images. They are imbued with cosmological and religious values, social and political structures, sensibility and attitude towards time and space. Moreover,

their forms and proportions, craftsmanship and decorations manifest symbolic propensities and hence, are meaningful (Beng, 1994: 19). As Lim and Beng (1998: 11) suggest, *"There is hardly any need or scope for "improvement" in the various vernacular languages of housing generated indigenously around the world..."*.

Manifestation capabilities of the elite domestic form

The elites in society are an *organized-minority*, which tends to dominate the *'unorganized masses'* in terms of an array of practices (Mosca, 1939: 53). These could be attributed to their superior intellectual and physical qualities possessed by nature, to inherited or acquired powers, essentially in economic and political spheres (Bottomore, 1993: 102). Through these superior qualities, elites tend to stay at society's forefront manifesting their prestige, leading way for masses to follow, while striving to further-widen the existing gulf between the two stratums. This generic nature of elites as a whole is true, irrespective of their location in the world, weather in a primitive society or the most advanced. In the olden ages, apex-status of elites was manifested through their *royal, noble, cleric, aristocratic* or *bourgeois* positions in society, and in the contemporary world, they prevail in the forms of *intellectuals, managers of industry* or *bureaucrats*, making these elite-positions real determiners of most life aspects of masses (Bottomore, 1993: 404).

The elites rule, they manage, and are the ideological think tanks that manipulate society, while masses merely go along with what is imposed up on them with minimal resistance. Hence, the elite facilitate new political and economic changes in society, or alternatively, these changes take place because of them and their self-centered actions[7]. On the other hand, Pareto's *economic dimension* (in Bottomore, 1993: 2) postulates that, economics is a vital aspect that constitutes elitism. The elites epitomize their political power to achieve the economic edge over masses or alternatively, the reverse takes effect, as Mandel (1982: 18-25) points out as it happened through human history. Policies of the so-called *"governing or political elites"*[8] as Pareto (1960: 1423-1424) refers to them, always strive to reinforce the best interests of its allied-elites of *"close coalition"*, as Bottomore (1993: 277) suggests. This is achieved through a concretization of an inequitable system that in turn makes and sustains them, with the intension of assuring its posterity. With dawn of the 20th century, it could be perceived that, merely the elites possessing some combined degree of economic as well as political edge, and occasionally the intellectual edge, became particularly capable of social influence. These abilities consigned them at the elite-apex as the "political" or "governing" elite, along with their immediate circle. The bureaucrats, managers and intellectual elites who merely possessed what their given names suggest, were relegated to immediate lower elite stratums. However, coalition between the apex and this stratum is what keeps the system in tact. The sub-elite stratum (the middle class) forming the liaison between the ensemble of elites and masses could be conceived as a different and less-influential group altogether (Bottomore, 1993:5). This Western-derived structure of elitism was subsequently imparted on the Ceylonese context via five epochs of Western colonialism.[9]

Since political and economic arenas are the *raison d'être* behind elitism as affirmed earlier, they also make elites the most sensitive their periodic changes in comparison to the masses.

Domestic building on the other hand, is a basic human necessity, which articulates the lifestyle of its dwellers. Then again, life style is a reflection of various traditions imbued in a given culture. As Rapoport (1969: 46) elaborates, "*The house is an institution, not just a structure, created for a complex set of purposes. Because building a house is a cultural phenomenon, its form and organization are greatly influenced by the cultural milieu to which it belongs...*". Hence, ico-economic changes are best-manifested in the unique built traditions of its elites. This built tradition exposes itself best, though a degree of great intimacy in the physical form of elite dwelling, as it could be derived through the discourse on the notion of "*home*" by Rybczynski (1988)[10].

Roles of tradition and Identity in Architectures of post-colonial Ceylon

After the Dutch-held maritime regions were handed-over to *British East India Company* in 1796, which was followed by the fall of Kandyan kingdom in 1815, the British colonial project in Ceylon instigated (Mills, 1964). Since the early 16th century to this point in time, Ceylon had merely remained one of the conspicuous penetration outposts in the Portuguese-Dutch created Seaborne Empire. The radical capitalist economic policies and gradual democratic reforms imposed by British colonists spawned a new peripheral status for Ceylon within the British Empire; with its hinterland centered upon London (Perera, 1994: 126-127).

Consequently, Ceylon that had managed to sustain a modest level of globalization to this point in time, suddenly started to feel its effects more rigorously. Albeit the feeble launching which mainly dwelled on the traditions of the expelled Dutch predecessors, the British building program perpetuated, and by the time Ceylon was granted its political independence in 1948, the island had experienced three distinctly identifiable *phases of British architecture* (Lewcock, Sansony and Senanayake, 2002: 249-301). Phase-3 of British architecture is perceived to be the one where British finally made their mark by curtailing the hybrid Dutch influence of the prior era to a meager level. In the domestic architectural scene, this was largely realized through the burgeoning influence of the 19th century *colonial bungalow* they had painstakingly developed in the subcontinent, to a point of culmination by their concluding years (King, 1984).

Some scholars believe that, the European Colonial projects affected new paradigm shifts throughout the whole of Asia, and the unequal socio-cultural as well as economic exchanges resulted in the emergence of "*re-invented*" traditions in hitherto unforeseen scales. Certain . types of hybrid architectures which relegated local cultural identities emerged and eventually gained acceptance with time (Lim and Beng, 1998: 55). Hence, the colonial bungalow could be adduced as an example of such. Phase-3 saw its finale by attempting to rationalize an ideally-functional and comfortable colonial domestic building for the tropics in the form of *Public Works Department's* bungalow-influenced *Tropical Colonial style* (Pieris, 2007: 49-50). This almost paralleled with Modernist propagations of the *Tropical School* of AA, which strived to derive a streamlined *Tropical Modernism* for the world's dry and humid zones (Fry and Drew, 1982); a further evolution of *CIAM 8's* Modernist avant-garde. According to Eric Hobsbawn and Terence Ranger's postulation (in Lim and Beng, 1998: 55), a colonial power had to invent "tradition" in order to create a sense of

historical legitimacy.

The Ceylonese equivalents of the discourse emerged in the forms of *Indic styles*, and *pseudo architecture*, which were largely delimited to monumental and civic buildings as Pieris (2007: 2) and Robson (2004: 43-45) affirm. By this juncture, the peripheral position of the newly-independent nations had been concretized through neo-colonial practices of the central Western-core (Perera, 1994: 332). These attempted ideological impartations of architecture could be conceived as a desperate measure to form a patronizing relationship between the core and periphery. These tendencies prevailed in Ceylon after independence, under the auspices of a so-called *"post-colonial third culture"*. They, who had assumed political power from the British, resembled their foreign predecessors in every conceivable manner (Perera, 1994: 257). However, a political breakthrough came in 1956 when a faction of local-elite came into political power in Ceylon having been equipped with a strong nationalist agenda. As a reactionary force against the bitter memories of colonialism, they adopted left-wing socialist slogans. Moreover, the newly-liberated different ethnicities of the island, who had been previously suppressed by the colonial heel had to be unified under one national identity; circumventing the propensity for future tension (Perera, 1994: 258). Within such a backdrop, several nascent Ceylonese architects felt the urgency for a new architectural identity for the nation[11]. Anoma Peiris draws a valid analogy with *Calud Levi-Strauss's* appropriation of the terms *bricoleur* and *engineer*, and the two mainstream approaches of post-independent Sri Lankan architects (Pieris, 2007: 150-152).

Neo-Regionalism: The modus operandi of a Bricoleur

Ceylon's post-colonial architects were essentially educated in the Western-core[12]. It was a context where, the core institutions had monopolized peripheral architectural education. It is also evident that clients of these architects were essentially, the country's elites or sub-elites of some form. From such an ensemble of postcolonial Ceylonese architects, Minnette de Silva, a former *AA* (Architectural Association School of London) trainee, was the pioneer to adopt a synthesis between vernacular and modernism with due emphasis on sociological experiences of Ceylon's rural life. Clearly depicting her stance, she coined the term *"modern regional architecture in the tropics"*, as early as the 1950s (Tzonis and Lefaivre, 2001: 31). Minnette's work overtly manifested the problems of post-coloniality, which was exposed as a *"precarious balance of Eastern and Western cultures than merely an aesthetic resolution"* (Pieris, 2007: 50). Geoffrey Bawa, who qualified few years junior to Minnette, also from the AA, appropriated an approach that resembled Minnette's. Both started-off with Tropical Modernist ideology coupled with the referenced vernacular building practices by their immediate colonial practitioner predecessors (Scriver and Prakash, 2007: 33-37). The incorporation of timeless and unconscious hence, backed this approach with authenticity. Clifford (1987: 121-130) describes this as the *"savage paradigm"*; a colonial discussion of a climatically-appropriate native architecture with the desire to rescue authenticity out of destructive historical changes. This approach according to Lico (in Pieris, 2007: 10) was not merely delimited to Ceylon, and also found its use in other countries of the Asian region.

Bawa drew inspiration from a range of regional architectures from Europe, Ceylon's own colonial past as well as its pre-colonial examples of both grand and folk design traditions. Especially in his domestic projects for influential economic or political elites, vernacular recurred overtly. The type of vernacular he picked up was largely from the hybrid manor houses[13] of the Kandyan elite apex as well as its sub-elites. This spawned an incongruous degree of familiarization in his architecture, which was lacking in the projects of his contemporaries. However, many perceive that Bawa's architecture "*...has a western aesthetic sensibility and provided a utopian comfort zone for a clientele facing the many disruptions of post-colonial change, of urban growth, and industrialization*" (Pieris, 2007: 9).

As Rykwert (1982: 31) tells us, "*Memory is to a person what history is to a group. As memory conditions perception and is in turn modified by it, so the history of design and of architecture contains everything that has been designed or built and is continually modified by new work....*" Hence, "*....There is no humanity without memory and there is no architecture without historic reference*". Analogously, Eliot (in Beng, 1994: 10) disseminates that, "*The past should be altered by the present as much as the present is directed by the past....the difference between the present and the past is that the conscious present is an awareness of the past in a way and to an extent which the past's awareness of itself cannot show*".

Lim and Beng (1998: 10) further-concretize the above notion by affirming that, "*If one does not hear the past clearly and honestly, it cannot become part of one's work. Architecture, like the other visual arts, is in the final analysis the domain of the intuitive mind and eye*" (Lim and Beng, 1998: 10).

Alternatively, it is possible in-deed, to seek synthesis of traditional and contemporary (appearing as binary oppositions) through Art[14]. However, such a synthesis should not be of janus-faced nature with the schizophrenic coexistence of two opposing ideas, but one single gesture which should simultaneously be contemporary and timeless as well as "ethnic" and "modern" (Lim and Beng, 1998: 10). Hence, elucidation of these affluent disseminations affirm that, this is what exactly Bawa's architecture was all about. Working with the scarce resources available to him, and with no striking innovation, he had undoubtedly played the role of a bricoleur; in deed of a very clever one[15]. The lure of picturesque along with nostalgic propensity and romanticism of the period had undermined the full potential of technological innovations in architecture. The ideal stepping stone for Neo-Regionalism was astutely conceived by Bawa as the elite domestic realm of postcolonial Ceylon. The architect himself hailing from an elite background may have caused such an intuition. By recreating environments imbued with elite associations of both indigenous and hybrid-colonial conditions of familiarity, the vernacular had concretized the immutability of its elite stratum of patronage. Hence, as Pieris (2007: 10) suggests, a potential restructuring of the country's postcolonial social sphere was made feeble by this rubric, and consequently the socio-economic mobility of the masses was largely hindered. The hybrid local identity it catered for, again, was favored by the country's Westernized and semi-westernized elites who themselves were products of colonial hybridity as Bhabha (1994) postulates. Other than its limitation to an elite clientele, the style was further-limited by the rigidity of the colonial structure as well the ever-prevailing ethno-religious nationalism. The masses meanwhile were either caught up in this nationalist zeal or lost in capitalist and homogenizing practices of the international

style. Neo-Regionalism's public acceptance eventually came with the auspice of the state-implemented civic projects and with the ideological transformations they instigated. The rubric in fact, suffered a paradigm shift from Bawa's own facile objectives as Pieris (2007: 11) suggests, into a whole different plane; with its "revivalist, traditionalist and chauvinistic forms" eventually making it conceivable to the masses. It was regionalism – rigorously backed by the political sphere – which heightened its focus on identity; not the neo-vernacular in its original form devised by its pioneers. Regionalism was then oriented towards an international audience for eventual laudability, and hence failed miserably in the attempt of much-needed decolonization.

Expressionist Architectural Modernism: The modus operandi of an Engineer-Bricoleur

" To rob a people of opportunity to grow through invention or through acquisition of values from other races is to rob it from its future" (Lim and Beng, 1998: 54).

This Modernity-instigated Western line of thinking could indeed be perceived as the motto behind Valentine Gunasekara's architecture. He took inspiration from America, epitomizing exposure of his study tours[16], and sojourns in California. Henceforth, he deviated from tropical modernist school quite early in his career after assimilating its essence. Freedom of spaces, tectonic qualities, and the rigorous modular articulation of form of his structures were borrowed from mainly American experiments. Gunasekara chose to relegate the industrial aesthetic of the European avant-garde to the appropriation of landscape-centered American counterpart. In the affluent works of Euro Saarinen, Louis Kahn, Charles and Ray Eames, he saw an effort to mould new technologies into an aesthetic that resonated with a specific geography; that he conceived to be a definitive break with the colonial past. As Pieris (2007: 13) suggests, "*The plastic curvature of concrete, experimented with in tropical climates by South American modernists, suggested an approach that could parallel the linearity of the prairie style that had emphasized the expanse of the American geography.....*"

Seminally, "*...The reference to ancient monuments of Incas and Mayas in Californian Modernists suggested ways in which he might approach and reinterpret Sri Lanka's historic architecture. For Gunasekara, the undulating softness of the tropical geography and interweaving of form and space in the ancient cities of Anuradhapura and Polonnaruwa would be parallel sources of inspiration*".

To Gunasekara, the emerging middle class (i.e. new class of local professionals, graduates from newly-formed Sri Lankan universities etc.) – the new sub-elite of Sri Lanka – appealed greatly; as he perceived them to carry the vitality for self-definition, essential to appropriate economic growth and thus, social mobility. Although, it is their cultural expansion that paved the way for general cultural expansion in Sri Lanka, they never got off to a position where they could threaten the immutable position of the country's elites[17]. In a rapidly globalizing world, Gunasekara recognized the changing Sri Lankan lifestyles in the process of assimilating western values. However, he managed to maintain aspects that prompt family gatherings and hospitable spirits, in order to make home life desirable. He

stressed on the importance of culture to the development of the human spirit and exposed its essential factors of faith, family, community and personal identity (Pieris, 2007: 13-14).
However, Gunasekara's ideology was largely dogged by the hybrid Sinhalese-Catholic culture that he wholeheartedly admired. He perceived this culture to be more liberal than the majority's Sinhalese-Buddhist counterpart, and also found it to be on par with a desirable sense of Socialist communality that De Silva (2009) attributes to Catholicism. Despite the fact that his earlier house designs greatly resembled tropical modernism, he endured a metamorphosis that evolved through modernist expressionism to the final form of deconstruction towards the end of his career[18]. One conspicuous factor that could be identified in retrospect was his sectarian devotion to technological experimentation. Sri Lanka's engineering profession of the 1970s – according to Sri Lanka Institution of Engineers' *Innovation and Self-reliance; Kulasinghe Felicitation Volume, History of Engineering in Sri Lanka*, 2001 Volume – was enduring an innovative phase, and Gunasekara became one of its great beneficiaries (Pieris, 2007: 13)[19]. With relation to his projects, Gunasekara not only played the part of bricoleur – picking up various seminal architectural influences from an array of mainstream world-wide practices of the time – he knew exactly what engineering tools to epitomize for each job, to a level of efficacy; making his approach a one belonging to an engineer-bricoleur. Albeit its groundbreaking approaches, the rubric overtly rejected tradition, perceiving it as a backward step to progression as it is connoted by Lim and Beng (1998: 13). However, architectural modernism that he based his broader aims on had a share of flaws of its own, especially with regard to the postcolonial tropics[20].

Conclusion

Sri Lanka is a nation with a primordial Sinhalese-Buddhist culture and its accompanying traditions. Sinhalese built traditions (both grand and folk design traditions) have been time-tested throughout various quantum leaps in world globalization history that pertained to the island. By analyzing the success of Bawa who acknowledged such traditions in his architecture as against Gunasekara who repudiated and in turn, became unsuccessful, the immutability of country's dominant culture and traditions articulates itself. Within the absence of a panacea for ever-prevailing East-West cultural clash, beneath a veneer of appropriated Western cultural attributes of the hybrid-elites, the fervor for indigenous prevails. Furthermore, the different degrees of political auspices received by Bawa and Gunasekara elucidate the factor's seminal role in publicizing a certain architectural rubric among the masses. Hence, masses are manipulated and influenced by the governing elite in society – the ones who rule them in collaboration with its immediate circle. Owing to the intuition gained via his elite upbringing, elite domestic realm was astutely epitomized by Bawa as a stepping stone for Neo-Regionalism to gain future acclaim.
Art for art's sake never seemed to have worked in Sri Lanka. Albeit being aimed at the betterment of society, art is ultimately political. The Sri Lankan elites of influence did not embrace a rubric based on vernacular tradition due to their genuine belief of it as the one that best-represents country's cultural identity, within the process of fulfilling their social responsibility as elites. The surviving feudal elites after independence were rather obsessed with creating a nostalgic niche of their own, through a rubric that best-epitomized the defunct design traditions

of Ceylon's medieval and colonial periods from their past heydays. It also appealed to elites who were the progeny of country's latter social mobility, as it was conceived as the ideal means of artificially-aligning themselves with their old counterparts to gain public legitimacy.

Henceforth, it is discernible that just because a certain architectural rubric threatens the posterity of the elite system, it would logically not succeed in a context with a strong cultural base, without the familiar traditional archaic as the vernacular.

End Notes

[1] Architecture has not remained "pure" anywhere, as there have always been hybrids (cross-fertilizations) of indigenous and imported. The two have been diffused, hybridized, and in the process, synergized. Hence, such types in their respective forms, in a given time frame, are potential models for even more similar transformations.

[2] *"From a whole possible area of past and present, certain meanings and practices are chosen for emphasis, certain other meanings and practices are neglected and excluded.....Some of these meanings and practices are reinterpreted, diluted, or put into forms which support or at least do not contradict other elements within the effective dominant culture"*(Williams, 1980: 39).

[3] The authentic meaning behind folk tradition could be discerned as, "*...the world view writs small, the "ideal" environment of a people expressed in buildings and settlements, with no designer, artist, or architect with an axe to grind* (although to what extent the designer is really a form giver is a moot point)."

Folk design tradition represents itself in the form of vernacular; which again could be classified as primitive and other forms, where the latter could again be divided into pre-industrial and industrial (Rapoport, 1969: 2).

[4] This is facilitated owing to factors such as religion, occupation and cast-system etc.

[5] These underlying factors could be religious, symbolic, biological and environmental etc.

[6] In every society which is complex, there is a number of 'levels of culture' to be found, and it is utmost vital for the health of the society that these levels of culture inter-relate to each other. Yet, the manner and the taste of society as a whole should be influenced by the society's 'highest culture' (Bottomore, 1993: 116).

[7] It has to be noted here that political changes may also occur due to social revolutions. In that case

it referred to as 'circulation of elites', where a faction of elites within the political class itself, replace the apex.

[8] From the ensemble of various types of elites in a given society, the governing elites tend to possess the greatest level of power, which places them at the centre of high cultural influence. Governing elites could either be an absolute monarchy, a certain form of collective government (democracy, socialism etc.) or any combination of varying degree of the two. The extent of high cultural access made available to the other elites, by the governing elites, varies in different contexts. In most Western contexts after Modernity for example, high culture has not been a jealously-guarded condition. Conversely, in the East, it has always been delimited either to the royal family alone, or to the immediate circle of aristocrats surrounding them.

[9] The quasi elite structure that sprung up by deliberate-intermingling of Eastern and Western counterparts during Portuguese and Dutch rules was jettisoned in the late 19th century. This was achieved via a Ceylonese appropriation of a fully-fledged British elite structure analogous to the one above. Roberts (2005: 147-148) affirms this point through his discourse of the late 19th and early 20th century British Ceylon's newly-acquired western-type liberal occupations (such as lawyers and civil servants etc.), which began to be addressed as "genteel professions". This ideology in fact, survived though the postcolonial period to the present day in Sri Lanka.

[10] The fact that the elites are the pioneers to have historically developed a degree of intimacy with their dwellings than any other social stratum, further-contributes to the concretization of this view.

[11]Anoma Peiris postulates that, the task facing Ceylon's postcolonial architects was twofold. On one hand, the need for constructing a sense of geographic belonging against a former history of colonial expression, European Modernism (inculcated to them through their core-based architectural education), and nascent chauvinist nationalism of the region as a whole, was prevalent. On the other, they needed to reconcile their only training – the one in modernism – to the design of tropical environments (Pieris, 2007: 150-152).

[12] This was owing to the fact that Ceylon did not have any architectural schools of its own at the time.

[13] These domestic buildings drew mainly on the indigenous vernacular belonging to folk design tradition, as well as for certain traits of grand design tradition.

[14] The Renaissance's architects and artists such as Michael Angelo, Borromini and the others, successfully-mediated strong beliefs and practices of the Roman church with the mythic imagery of ancient Greece and Rome.

[15] Consequently, this rubric culminated to become the flagship elite domestic-style of the island by the 1970s and 80s. Moreover, it became the ideal manifestation of the immutable position of

country's core-oriented elites in the top ranks. It also assured through architecture, the posterity of the elite-made system.

[16] Gunasekara received the Rockefeller Foundation Travel Grant in 1965 and travelled the US. (Pieris, 2007: 152)

[17] Despite the potential to become such a counterforce, with time, they merely became the stratum that formed the liaison between the elites and masses; exactly the function of "sub-elites" throughout world history.

[18] This could be affirmed via a chronological evaluation of personalized houses completed by him throughout his carrier.

[19] Pre-cast concrete, thin shell structures and industrial methods had attained a point of culmination, and such techniques were appropriated into his repertoire. The close partnership with engineer Jayati Weerakoon made such inovations plausible. (Pieris, 2007: 152).

[20] Although its bold formal expression undermined the colonial metropolitan identities that had previously been hegemonic in Asian cities, it never quite won the hearts and minds of the peoples of the region. This stance could in-deed, be blamed on a fallacy, which inculcated the notion of modernism as an "identity-free" rubric.
The separation of values from identity-which lay at the heart of the humanist project appeared incongruous when introduced to diverse and contested geographies, and proved ineffective at many levels.
The critique of modernism by that time was on the rise. As per the emerging post-modernist school, "Modernism; the aesthetic of the European avant guard, is..... an empty universal shell devoid of history and culture, a tool of top-down economic policies whether socialist or capitalist. Its monolithic forms cast deep shadows subjugating a diminished urban citizenry. It was a utopian project that somehow misfired. At the core of its problematic was a Eurocentric humanism, shaped by enlightenment ideology, reinforced by early twentieth-century colonialism and disseminated as an apolitical and universal value" (Pieris, 2007: 1).

References

Bhabha, K. H. (1994) *The Location of Culture*, London :Routledge,

Beng, T. H. (1994) *Tropical Architecture and Interiors: Tradition-based Design of Indonesia-Malaysia-Singapore-Thailand, Singapore:* Page One Publishing Pte. Ltd.

Bottomore, T. (1993) *Elite and Society*, London: Routledge.

Clifford, J. (1987) *"Of Other Prople's: Beyond the Savage Paradigm"*, in Hal Foster (ed.) Discussions in Contemporary Culture, Seattle :Bay Press.

De Silva, N. (2009) *Dharavadaya, Marxwadaya ha Jathika Mathawada*, [online], Available: http://www.kalaya.org/files/d090215.pdf [29 June 2010].

De Silva, N. (2006) *Sinhalayage Parinamaya*, [online], Available: http://www.kalaya.org/audio5.html [26 May 2010].

Fry, M. and Drew, J. (1982) *Tropical Architecture in the Dry and Humid Zones*, 2nd Edition, Florida: Robert E. Krieger Publishing Company.

Hobsbawn, E. and Ranger, T. (1983) "Introduction: Inventing Traditions", *The Intervention of Tradition, Cambridge* :Cambridge University Press.

King, A. D. (1984) *The Bungalow: The Production of a Global Culture*, London: Routledge & Kegan Paul Plc.

Lewcock, R. Sansoni, B., and Senanayake, L. (2002) *The Architecture of an Island*: The Living Heritage of Sri Lanka, Colombo: Barefoot (PVT) Ltd.

Lim, W. S. W. and Beng, T. H. (1998) *Contemporary Vernacular*; Evoking Traditions in Asian Architecture, Singapore: Select Books Pte. Ltd.

Mandel, E. (1982) *Introduction to Marxism*, London: Pluto Pres Ltd.

Mills, L. A. (1964) *Ceylon under British Rule*, London: Oxford University Press.

Mosca, G. (1939) *The Ruling Class*, New York: McGraw-Hill.

Pareto,V. (1960) *A Treatise on General Sociology*, New York: Dover.

Peiris, A.,2007. *Imagining Modernity: The Architecture of Valentine Gunasekara*, Sri Lanka : Stamford Lake (Pvt) Ltd.

Perera, M. C. N. (1994) "Decolonizing Ceylon: Society and Space in Sri Lanka", State University of New York at Binghamton: Department of History and Theory of Art and Architecture,

Rapoport, A. (1969) *House Form and Culture*, New Jersey: Prentice-Hall, Inc., Englewood Cliffs.

Roberts. M. (1995) *Cast Conflict and Elite Formation: The Rise of a Karava Elite in Sri Lanka* 1500-1931, New Delhi: Navarang (in collaboration with Lake House Bookshop).

Robson, D. (2004) *Geoffrey Bawa; the Complete Works*, London: Thames and Hudson.

Rybczynski, W. (1988) *Home: Short History of an Idea*, London: Heinemann.

Rykwert, J. (1982) *The Necessity of Artifice*, London: William Clowes (Beccles) Ltd.

Scriver, P. and Prakash, V. (2007) *Colonial Modernities: Building, dwelling and architecture in British India and Ceylon*, London and New York: Routledge.

Tzonis A. and Lefaivre L., (2001) "Regionalism and Tropicalism after 1945", *Tropical Architecture: Critical Regionalism in the Age of Globalization*, West Sussex :Wiley Academy.

Williams, R. (1980) *Problems in Materialism and Culture*, London: New Left Books.

EXPLORING LOCAL WISDOM IN APPROACHING THE NATURE AND ENVIRONMENT OF SPACE ACCORDING TO THE LOCAL ORDER AND IMAGE

Lintu Tulistyantoro

Abstract

The local nature and the environment of a place are important factors in creating a work of architecture that matches the functions and image of its users. These factors are related to their context and become a separate issue, faced by all societies. Different natures and environments will express different works in accordance with their uses and image, relevant to their respective context. There is no work that can create itself, every architectural work is created according to the order and the image of society.

The Indonesian society in general, specifically the traditional society of madura is a society living with a unique local nature and environment. The dry and barren soil and Limestone Mountains, with very little rainfall is a reality that must be faced and resolved by the people. They have been able to create a work of architecture that is in accordance with their society's local order and image in the tanean lanjang, the traditional house of the Madura people. Tanean lanjang is an architectural work that has been tested for a very long period of time and has become a part of the society's life. The wisdom to adapt and adopt the local nature and environment is reflected in the composition and zoning of space, in the dimensions and shape of the building, and the construction and use of materials on the tanean lanjang. The Madura society has been able to prove that the work of their ancestors is a great heritage that is full of local wisdom in accordance with the order and the image of the local nature and environment that is reflected not only on the physical aspects but also on the non-physical aspects. The society's cosmology is the non-physical aspect, a local wisdom that believes in achieving harmony with the local nature and the environment. This is reflected through the sample studied in this paper on the resarch of the physical and non physical aspects of the tanean lanjang.

Introduction

Indonesia is an archipelagic country consisting of many islands with high average of rainfall. Cultural richness is very diverse, this because Indonesia consists of hundreds of hundred ethnic groups. Broadly, according Kuntjaraningrat[1] , Indonesia is the same as the world community in general. Indonesian society consists of groups of people such as primordial gatherers, marine society, and paddy fields society. Gatherer society is a society that lives from hunting; the community is not familiar with intensive agriculture and water treatment. Maritime community is the people who live in coastal waters, living between sea and land. They have a different way of life, and different perspective of understanding the nature as well. Fields society is the people who live mobile, following the fields that they plant. Their lives depend on nature instead of water. Meanwhile, rice field society is a group of people who live depending to the management of water. This means that water is an important factor in their life.

Some of them that will be taken in this paper are Madurese and Toraja tribe. Both have a specification that is not owned by the other tribes in Indonesia. Both tribes have the same primordial cosmology, it is the fields. Having different natural conditions, they are different in the image and expression as well.

Madurese people with a distinctive language and culture are located in the eastern part of Java Island. That place has a dry natural condition with very little rainfall when compared to Indonesia as a whole. While, the geographical conditions of the islands are stretching from the west to the east, consisting of ground limestone and coral. So, it makes unfertile. Also, this area does nothave volcanoes. However, on the other side, this area has the potential of great nature, natural gas, manganese, etc. Even, natural gas appears in several areas among residential population[2]. They have a traditional house called *Tanean Lajang* which means pages in length, or a cluster of houses which have a yard in the middle[3] . Cosmologically, Madurese people are the people who go in groups of fields, but Kuntowijiyo classified them more specifically in groups of dost. Their lives depends on the dost owned.

Toraja tribe is located on the island of Celebes, located in the middle of mountains having cold temperature. In contrast to the Madura, Madurese region is lush and mountainous areas that have many sources of water. Visually Toraja traditional house is the family. Houses are built and owned by one big family, and called *Tongkonan*[4] . In the perspective of Cosmology, Toraja society is grouped into the field society, seen from the way of life and visual expression. However, if traced further from its origins, it shows that they are the maritime group. Maritime communities are open, but the three principles of good people still expressed through the arrangement of space and pattern diversity owned.

[1] *Kuntjaraningrat, PENGANTAR ATROPOLOGI, pokok pokok etnografi II, Rineka Cipta, Jakata, 1998 : 32-84*

[2] *Kuntowijoyo, Perubahan Sosial dalam Masyarakat Agraris: MADURA 1984-1940, Mata Bangsa, Jogjakarta, 200: 224-40*

[3] *Department Pedidikan dan Kebudayaan RI, ADAT ISTIADAT DAERAH JAWA TIMUR, Proyek Pengkajian dan Pembinaan Nilai Nilai Budaya Pusat Diektorat Sejarah dan Nilai Traditional Direktorat Jenderal Kebudayaan, Jakarta : 178-185*

[4] *Daniel Tulak, KADA DISEDAN SARONG BISARA DITOKE' TAMBANE BAKA, Sialoka, Rantepao-Toraja Utara, 2009:7-20. Myrtha Soeroto, TORAJA, Pustaka Budya & Arsitektur, Balai Pustaka, Jakarta, 2003: 36-46.*

Use and image

Nature and the environment of certain location is an important factor in creating a work of architecture to be consistent with the order and the image of their users. According to Mangunwijaya[5], the house is always the image of the human builders, meaning that the house is always breathed by human life, nature and trends of the trend, and the ideal goals. So each work, it should always reflect the order and its image. According to Mangunwijaya use is utilization or has the power to improve life for the residents. The image itself is an expression of the work which becomes an expression for the user and/or manufacturer's own building, a mirror image of not only physical factors but more emphasizes the image of the spiritual factor. These factors must be in accordance with the text and context, respectively. That it has become its certain problems faced by many people of the world. Nature and different environments, will express the work of a different order and in accordance with each image. This means that it is appropriate to the context, respectively. Nothing works created by itself; each piece in the architectural image is created following the order and its society.

Traditional communities in Indonesia are very diverse community. They own and maintain cosmology which is reflected as a value spiritual done in real life day. House as a place of activity throughout life, is not built only by instinct but to express the wisdom and the image of the society. The local thinking is the wisdom that underlies all work in accordance with the image and pointless. For example, buildings for worship are always placed on top of the mountain, or always concentrated in one point; it is the expression of the human picture, about how to look nature. Pictures of gods are on a hill or mountain; it is the expression that best fits his situation. Floor elevation, distance and spatial division are a reflection of spiritual values[6].

Cosmologi of field and maritime

Understanding the views of primordial cosmology Indonesian society in general, it is not separated from the direction of wind. This means that the eyes of the wind direction have decisive positions facing building lived. In addition the composition of space is also determined by the cardinal directions. Cardinal directions have different characters from each other. All are reflected in the visualization of his work. Besides the elements, both vertical and horizontal hierarchy is also reflected in there.

Primordial cosmological concept of field community is a dualism or duumvirate. Dualism is a contradiction of elements of the element that has the opposite properties, such as Men-Women, Strong-Weak, Dry-Wet, Closed-Open, Outside-In, Top-Down, Front-Rear, Right, Left, Heaven-Earth, East-West, North-South, the Sun-Moon. This dualism must be neutralized through a central element to achieve a balance or harmony. It can be neutralized through the medium of connecting between the two things that contradict it. In understanding and interpreting the space primordial society, it is true that they also adopt dualism, which is to follow the pattern of conflict in order to achieve harmony. It means that the position of the space in a

[5] *Y.B. Mangunwijaya, WACTU CITRA, Pengantar ke Ilmu Budaya Bentuk Arsitektur Sendi-sendi Filsafat beserta Contoh-contoh Praktis, Gramedia Pustaka Utama, Jakarta, 1995:23-88*

[6] *Ibid p. 96*

certain direction and hierarchy has particular value as well [7].

Field communities have views of the cosmos into three parts, namely the underworld or the real world of the profane, the transcendent world of intermediaries, and the world over of the sacred. The underworld or the real world is a world of human life, outside, open. Intermediary world is a world where humans achieve a sacred order must be through mediums for reaching into the holy or the top. World over is a world that can not be touched by the living. The concept of this kind of thinking is clearly visible through the structure of life as well as its spatial arrangement pattern. In macro view, it appears at the system environment or the city of Point-Tomb-Mount (Prohibition).

Climate as determinant of image and use

According to Tropo[8] , a lot of research on tropical building reveals that tropical building design should consider the following factors: wind, sun, rain, and earthquake. Wind speed from breeze to strong breeze, the Beaufort scale is mentioned between 1 and12. Changes in the wind that is so drastic provide a very significant change for the convenience of users. The sun, which shines throughout the nearly 12 hours, also gives a different effect. It means it has the effect of light or radiation of the sun from morning till evening. Radiation that stings at a certain angle gives advantage on one side and disadvantage on the other side. Similarly, the rain, one side benefits it and the other side it gives the loss due to the activities to be disrupted. The rain accompanied by winds of change also gives comfort to the user. Earthquake is an activity that continued for several times a year. It is important to note that Indonesia is located on the meeting area between the Pacific and Asian plates. The possibility of earthquake is very big, sometimes even deadly earthquake occurs.

The wind in theory should be able to be utilized either by conducting or continuing into the room. Wind direction from north to south and vice versa can give a positive impact on who can use them. This situation must be conditioned so that the benefits of this nature can be cultivated optimally.

Direction toward the sun throughout the year with a fixed direction from east westward, giving an impact on the direction of the building. It is because the heat source is coming from the east and heading west. This heat source is causing glare and radiation, which is high enough so as not to give comfort to its users. It is similar to the sun from the west. This excessive sun radiation needs to be overcome to provide comfort for its users.

Research on tropical building by Tropo observed a positive effect for users, factors of wind, sun and humidity are important factors to determine the effectiveness and image. Most of the traditional houses in Indonesia are adaptable to the environment. This means that these homes fulfill the aspects and image. High rainfall and wind conditions of high humidity also define the system environment to the existing traditional buildings in Indonesia[9] . Although this idea originated in Indonesia, but in northern Australia Tropo gave special attention to the adaptation of the buildings in

[7] *Jakob Sumardjo, ARKEOLOGI BUDAYA INDONESIA, Pelacakan Hermeneutis-Historis terhadap Artefak Artefak Kebudayaan Indonesia, Qalam, Jogjakarta, 2002: 16-17*

[8] *Goad, Philip, TROPO ARCHITECTS, Periplus Edition, Singapore, 2005:12-15*

[9] *Ibid. p. 25*

this region. Utilizing the existing system by providing shade to prevent the influence of the sun and excessive rain are applied properly. Meanwhile, the use of modern materials becomes a consideration to be applied into his work. The use of shade with without closing the air flow is one way to keep the temperature getting low but the air humidity is maintained. While shade that is long and low is able to not only ward off the influence of the sun but also able to provide protection when there is rain. Apparently the local wisdom of a traditional thought in Indonesia has been adopted by Tropo, an Australia architect. He dev eloped an adaptation of buildings in the Australian environment by using new materials / modern[10]

Understanding image and use a local wisdom

Understanding the description Mangunwijaya, buildings and space are based not only prepared to fulfill all aspects of function but rather fulfills the image. For example buildings with different shapes and heights will have a different image. Meanwhile the position of cardinal directions also defines a different image. This can be seen from each tribe in Indonesia. For example, buildings of worship in Madura, in addition to fulfilling aspect as a place of worship, the aspect of the image is shown by the elevated floor in a form of a stage. In Toraja, in the back room Tongkonan is used for people who are respected, or parent. It has a higher position placement of the floor, even to respect people who are already dead, they are placed there[11].

Understanding the image on *tongkonan* and *tanean*

Such phenomenon is a phenomenon that occurs commonly in people of Indonesia in the past. In *Tanean*, this value expresses one of visualizations of cosmology from the society. Understanding aspects of the space is determined by understanding the orientation of the sun. North direction is opposite to the south. North means holy, sacred, used for woman or child who is not in puberty. It fulfills aspects of the image as a place of convergence of the power of the sacred ritual of male and female, medium between the world's top and bottom. East- west position is interpreted as the beginning and end of life reflect the composition of the status of the family, the shrine is terminated by a break, the members of the family sequence starting from the oldest west then eastward to the youngest. This hierarchy is based not on age but the sequence of marriage. Thus, marriage is an important status in the family of Madura. West direction is understood as expressed through a hierarchy of death in the family home layout. Positions of *Langgar*[12] in the western part of the platform structure provide its own image as a special and sacred space. However, there are different expressions when *Langgar* in Madura is using horizontal ridge, this can be understood because *Langgar* is not purely religious buildings but it is also used as a bedroom and living room for men. While the general image

[10] Ibid p. 24

[11] Myrtha soeroto, TORAJA, Pusaka Budaya & Arsitektur, Balai Pustaka, Jakarta, 2003: 45-46

[12] Langgar is small moosque, with the size is 3 x3 M Sq

building of worship always images, image that leads to the center of one / a pyramidal.

Tanean with a long row of houses is a closed area; it means that area is the area of women. Outer men are not allowed to go in when there are no men in Tanean. Women would welcome guests when there are no men in *Tanean*. So Tanean is an autonomous region for a family that can only be entered if there are men in it. This autonomy is mirrored in the attitude of everyday life, one family at *Tanean*. This means that there is no other element that can regulate their lives if it is not themselves. This can be understood because their death and lives depend on themselves and the natural environment. Female houses are reflected in the ownership and the nature of the house itself is a woman. Men are outsiders; men have tasks of external affairs.

Unlike *Tongkonan*, although the same background cosmology, due to geography and natural conditions, they result in a different mirror. Three principles in the fields of society are reflected in the pattern of its spatial arrangement. The room is divided into three and leads north-south[13] . It meets the main aspects, which the north is the central place as the home of the gods, a sacred place, the elderly and women. North is imaged with the highest elevation compared with the middle and south. Meanwhile, the southern region is an area for boys. The middle is neutral unifier area, kitchen. This area has the lowest position. Expression image shows a very clear hierarchy of the north-south high and low middle. Image of the west-east orientation is also imaged in the direction of the sleeping spirits heading west. It is interpreted as the meaning that the east is the beginning of life and west is death. The corpse in the family that has not taken into ceremony is also placed facing west. That is to travel towards the ancestors. Structure and materials which are used dominantly are large timber with a large size; it also provides an image that these regions are areas very rich and fertile with construction material. Similarly, the roof of bamboo, and also the pole barn is an expression of local wealth area. Number of buffer/ column is not just a wood structure but they are also functioned to put more emphasis on the number of descendants of building owners. It is because *Tongkonan* is not just a space to live but a family space that was built along the same by the whole family. While carve-shaped variety is also imaged the number of horizontal lines that build the family fortune. Because constructing a *Tongkonan* is very expensive, it is not possible to build it alone. Ornament such as buffalo horn that hung in front of Tongkonan, with a very large quantity also image who owned it. The more buffalo horns mounted, then the economic and social statuses of its owner are clearer to see. It is because buffalo is a symbol of wealth and a spiritual symbol society. In particular ritual ceremonies buffalo's death is placed in very important position. And some buffalos have a special status, particularly *Balian*[14] buffalo that is castrated. These Buffalos serve as a medium between the real worlds with the spirit world, they are used to deliver the spirit to underworld.

Understanding the use of *tanean* and *tongkonan*

Implementation of aspects in order to *Tanean*

[13] *Imre, Jowa, Nooy, Hetty, BANUA TORAJA, changing patterns in architecture and symbolism among the Sa'dan Toraja Sulawesi Indonesia, royal tropical Institute the Netherlands, Netherland, 1988*

[14] *Balambang, Luther, ADA' TORAYA, Ranterpao, 2007: 73*

can be seen from how nature adapted to their needs. The use of woven bamboo wall allows air circulation can run well. Although the building has no windows, but the wind and the light still come in well and also in the day room is still bright. It is because the sun can still penetrate the wall well. Another side effect of using a transparent wall, named gedek[15] , is adaptation of the humidity inside the room to be controlled. High humidity can be overcome by flowing air into the room. In terms of construction and materials, Madura, dry conditions and infertility do not provide a material with large dimensions. It can be seen from the building structure that is used. Dimensional timber with a small size and dimensions ranging from 10x10 CM that only one room with only 2.3 m column spacing, allowing the materials and construction used to be mild. In addition to the dimensions of a very small space since it consists of one room and porches allow this building to not require a complex construction and the materials used are also very minimal. This fulfills the image of Madura are located in areas barren, dry and infertile. The materials used are also very limited, locally available materials such as bamboo and wood are very dominant. Bamboo and wood are a lot of potential environment in Madura. *Reng* and *usuk* are arranged through small parts which are small bamboo without any ceiling. This has the advantage of air circulation and light can enter the room.

The position of the sun, wind direction, the placement and nature around it are a part of life observed in this paper. Placement of the living space and can not be separated from the cosmology of the society. The position of the north, south, east and west give the aspects of use and image that not only fulfill the importance of use and image in visual. More than that, that aspect of order and the image are more emphasized to their spiritual needs. Why directions of buildings are always facing a certain direction? It is because it is in accordance with this aspect of the image of its users. It is because the philosophy of the direction the wind is the determinant in accordance with the desired state. In this climate and geography, it can also be applied in accordance with the cosmology of their society. Cardinal directions, the geographical position of the mountain and the sea become the determinant factor for forming the image in accordance with the image of the society.

Aspect of use of the Tongkonan is expressed by the cardinal orientation. The building faces north toward the south, it meets the wind direction, this state is strengthened by the sun. The size of the building that extends to the possibility of sun and air circulation can run well. Structures and walls of wood gives possibilities air circulation and sunlight work well. The existences of openings are structured to provide the possibility of rotation of air and wind better. A vertical opening in the building is capable of controlling the air circulation without disturbing occupants for all the time. While opening the front side of the building is a form of air control as determined by the human actively. The stage house structure also gives one the pleasure and convenience of users in terms of humidity and temperature controls are pretty cool.

The use of bamboo roof that is composed of bamboo paired with a half-way provide security for owners as well as good temperature control, because as thermal insulation in the daytime and too cold at night. While building a solid structure with umpak at

[15] *Gedeks is wall made from bamboo woven.*

the bottom obviously had in order to prevent weathering due to the wet climate. Knockdown structure without nails is to meet the demands of high seismic regions. This means that the peg system is to be flexible when buildings are facing shocks.

Interior space that puts the kitchen at the center of the space in order to also provide aspects of preservation, because the effects of the smoke kitchen gives poorer preservation of wood and bamboo materials are used. Insects can not stand to live and nest in wood and bamboo in it.

Conclusion

Aspects of the Use and Image are owned by a single ethnic group in Indonesia is one example of local wisdom in treating the nature and the environment in accordance with the context and the text when the buildings are located. Ability to adapt to the environment once seen as the local knowledge is very high, that not all developed by the next generation. Such wisdom has not been able to answer the challenge that's happening right now.

References

Balambang, Luther, ADA' TORAYA, Ranterpao, 2007: 73

Kuntjaraningrat, PENGANTAR ATROPOLOGI, pokok pokok etnografi II, Rineka Cipta, Jakata, 1998 : 32-84

Kuntowijoyo, Perubahan Sosial dalam Masyarakat Agraris: MADURA 1984-1940, Mata Bangsa, Jogjakarta, 200: 224-40

Department Pedidikan dan Kebudayaan RI, ADAT ISTIADAT DAERAH JAWA TIMUR, Proyek Pengkajian dan Pembinaan Nilai Nilai Budaya Pusat Diektorat Sejarah dan Nilai Traditional Direktorat Jenderal Kebudayaan, Jakarta : 178-185

Daniel Tulak, KADA DISEDAN SARONG BISARA DITOKE' TAMBANE BAKA, Sialoka, Rantepao-Toraja Utara, 2009:7-20

Y.B. Mangunwijaya, WACTU CITRA, Pengantar ke Ilmu Budaya Bentuk Arsitektur Sendi-sendi Filsafat beserta Contoh-contoh Praktis, Gramedia Pustaka Utama, Jakarta, 1995:23-88

Jakob Sumardjo, ARKEOLOGI BUDAYA INDONESIA, Pelacakan Hermeneutis-Historis terhadap Artefak Artefak Kebudayaan Indonesia, Qalam, Jogjakarta, 2002: 16-17

Goad, Philip, TROPO ARCHITECTS, Periplus Edition, Singapore, 2005:12-25

Imre, Jowa, Nooy, Hetty, BANUA TORAJA, changing patterns in architecture and symbolism among the Sa'dan Toraja Sulawesi Indonesia, royal tropical Institute the Netherlands, Netherland, 1988.

Myrtha Soeroto, TORAJA, Pusaka Budaya & Arsitektur, Balai Pustaka, Jakarta, 2003: 45-46

RECONSTRUCTING THE VERNACULAR: PALESTINIAN URBAN LIFE VS. THE "ARAB VILLAGE"

Rachel Kallus

Abstract

The tension between modernity and tradition has played a major role in the subjugation of the Palestinian populations of Israel. It has confirmed the State of Israel's insistence that their backwardness renders them unfit for serious dialogue with a modern western state. The "Arab village" is the spatial representation of this attitude, the embodiment of a traditional and underdeveloped modus vivendi (Eyal, 2003). Its vernacular pattern presents a negative rural tradition of backwardness deriving from Palestinian submissiveness (Rosenfeld, 1964; Lustick, 1985). The Palestinians themselves, however, tend to romanticize their past by imagining it mainly within a framework of village life (Hasan, 2005; Tamari, 2007).

Within this context of city/modernity vs. village/tradition, the paper examines current Israeli Palestinians' claims to the city as translated into new urban forms and politics. It focuses on the differences betweean emerging urban vernacular and its potential challenge to the discourse and political practices of the Arab village. The paper examines the re-establishment of Arab urban life in an area of Haifa built by the German Templers at the end of the 19th century and recently renovated. The German Colony lies along a main north-south artery which is still an important axis linking the sea on one side with Mount Carmel on the other via the newly rehabilitated Bahai Gardens. After many years of inertia, Haifa Municipality began restoring the area in the late 1990s during the euphoric days following the Oslo Accord, the aim being to attract tourists. The project, funded by the Ministry of Tourism and fueled by the newly developed Bahai Gardens, consisted mainly of restoring the public infrastructure in the expectation of attracting private investors. Following the Palestinian Intifadas and the escalation of terrorist attacks, the project, almost completed, was about to collapse, but little by little new bars and restaurants were opened by local Arab investors. This new urban area has attracted Arab and Jewish Israelis from all over the country, and has become a major place of leisure for the Palestinian of Haifa and the northern region of Israel.

The paper discusses the German Colony vis-à-vis the adjacent Wadi Nisnas investigates the adaptation of vernacular form to new cultural meaning through the emergence of new forms and practices that re-establish Palestinian urban life. It examines the continuity/discontinuity of traditions, their role in creating a vernacular in the midst of a modern city, and how they give new meaning and authenticity to

ethno-national aspirations.

Keywords: *Constructed vernacular, Urban life, Arab village, Israeli Palestinians, Haifa*

Figure 1: Wadi Nisnas neighborhood

Figure 2: The market in Wadi Nisnas

Introduction

Wadi Nisnas, the focus of Arab[1] life in Haifa, offers an unmediated encounter with the putative "Arab village". The area was developed at the end of the 19th century, during Ottoman rule, as a Christian neighborhood outside the walled city of Haifa. In the aftermath of the 1948 war, Wadi Nisnas and its immediate surroundings became the core of Haifa's Palestinian community, Christian and Muslims alike, providing them with education, religious, and other civic and cultural services. The neighborhood is characterized by mixed land use, with a rich diversity of businesses and commerce. As the only Palestinian neighborhood in Haifa where buildings and infrastructure were not destroyed during or after the 1948 war, it represents a quasi-authentic Palestinian physical fabric. Its "Arabism" is a source of pride for the inhabitants who did not leave Haifa in 1948. But for the municipality it is also a means of emphasizing Haifa's uniqueness as a 'mixed city'. Especially during the Holiday of Holidays Festival, the narrow winding alleys and stone buildings are used to present the neighborhood as "other" (Figures 1 and 2).

The adjacent German Colony is currently developing as the centre of Arab leisure and nightlife. The area was built in the 19th century by the German Templers as a model agricultural community. Its main north-south artery is an important axis linking the sea to Mount Carmel via the newly rehabilitated Bahai Gardens. After many years of inertia, Haifa Municipality began restoring the area in the late 1990s with funds from the Ministry of Tourism fuelled by the newly developed Bahai Gardens. The aim was to attract the forthcoming millennium tourists. With the outbreak of the Palestinian Intifadas and the escalation of terrorist attacks, the project, almost completed, was about to collapse. However, against all planning previsions it has become a major leisure place for the Palestinians of Haifa and the northern region of Israel, representing a revival of Palestinian urbanity (Figures 3 and 4).

This inversion, in which a Palestinian urban neighborhood represents an "Arab village", while a previously European agriculture settlement becomes the centre of a flourishing Palestinian urban culture, suggests the potential of the built form to uphold transformation of content and meaning. This paper asks about the continuity of the vernacular in the face of disruption and of tradition. Within the contested environment of

[1] *The term 'Arabs', as used in the Israeli discourse, refers to the Palestinians who stayed within the borders of the State after its creation in 1948 (including Muslims, Christians, Druze and Bedouins). They are citizens of the state of Israel who belong to the Arab culture. This paper focuses on Arabs Muslims and Christians of the North and uses 'Arab' and 'Palestinian' interchangeably.*

Figure 3: German Colony north-south axis linking the sea to Mount Carmel via the Bahai Gardens

Figure 4: Café in the German Colony

Israel/Palestine, it wonders about the ability of the built form to uphold the cultural meaning and authenticity that sustain ethno-national aspirations.

Background

The tension between modernity and tradition has played a major role in the subjugation of the Palestinian populations of Israel. It has confirmed the State of Israel's insistence that the Palestinians' backwardness renders them unfitted for serious dialogue with a modern western state (Kimmerling, 2008). The "Arab village" is the spatial representation of this attitude, the embodiment of a traditional and underdeveloped modus vivendi (Eyal, 1993). Its vernacular pattern presents a negative rural tradition of backwardness of the "other", deriving from governmental control and Palestinian submissiveness alike. As Rosenfeld (1969) and Lustick (1984) show, the Israeli Government has maintained the traditional Palestinian societal structure for its own political purposes. However, preserved and reinforced traditional values have supported community elders against social transformations that undermine their own authority (Hasan, 2002).

Official policies of land separation, including the establishment of purely Jewish settlements, restrictions on land administered by Arab municipalities, discrimination in housing subsidies and financial assistance, and lack of planned public housing have all limited freedom of choice of residency for Israeli Palestinians and emphasized their rural living patterns (Khamaisi, 1990; Kimmerling and Migdal, 2003). For the most part, they have been left to solve their own problems, under the assumption that their private land was not used efficiently due to their preference for low density and rural building patterns. The limitations on housing choice and of varied living options are also thought to be due to lack of private transactions, deriving from social mores and political attitudes regarding land (Yiftachel, 2000).

These limitations were a prime factor in creating what Meyer-Brodnitz (1969) has described as 'latent urbanization', in which the Arab population undergone urbanization within the context of existing villages, and not

as a result of migration from villages to towns. Falah (1989) explained the lack of Arab rural-to-urban migration as a governmental strategy attempting to achieve a positive Jewish demographic balance and to disrupt the territorial continuity of Arab lands and settlements. This, he contends, has served to strengthen the rootedness of the population in their villages and as an obstacle to migration. Such urban phenomena have, to date, been associated with the internal processes of Arab villages, their physical, architectural, social, demographic and functional structures, and changes within the settlements (Rosenfeld and Carmi, 1977; Schnell, 1980). Less has been written about Palestinians city-dwellers in Israel and the continuity/discontinuity of their urbanity.

Rabinowitz and Monterescu (2008) describe the processes by which Jaffa, Haifa, and Acre, the three towns that in the 19th century evolved into proto-national, mercantile mixed towns, have permitted partial rehabilitation of Palestinian urbanity. Focusing on mixed Arab and Jewish cities in Palestine (and later Israel) in the 19th and 20th centuries, they indicate the significant links between modernity, the concept of the nation, and urbanity. They explore a border zone where politically constructed ethno-territorial rival groups compete, but also where individuals and institutions on both sides often co-operate, seeking personal gain, communal perpetuation, and resistance to colonial and state power. They ask questions about how Palestinian urbanity is formed and developed in Israel, especially in relation to urban form and culture.

Manar Hasan (2005) notes the absence of the city from the spaces and social structures of the Palestinian community in Israel post-1948, and the process that has erased it from Palestinian and Israeli memories alike.

She claims that uprooting the Palestinian city brought about the extirpation of national memory from the Palestinian population remaining in Israel, i.e. not only the Palestinians went to exile, but also their memory. However, the village and its collective memory rooted in the locale have survived. Hence the village rather than the city has remained in the memory, an object of yearning and contact with the past (Hasan, 2005, p. 202). The centrality of the village in the Palestinian imagination also explains the Palestinians' focus on land in their national struggle for liberation (Ibid, p. 203). Tamari (2007) suggests that Palestinians tend to romanticize their past by imagining it mainly within a framework of village life. Azmi Bishara (1999), Ahmad Sa'di (1997) and others have also criticized the Palestinian reliance on traditional values, although they tend to discuss this in post-colonial terms - as an acceptance of the oppressor's views by the oppressed. Hasan (2002), more blatantly, accuses Palestinian society of returning to traditional values and thereby strengthening patriarchal norms in a manner that has severely affected women.

Today, Israeli Palestinians' claims to the city are manifested as new urban and political forms. An emerging Palestinian urban culture challenges both Israeli discourse and political manipulations of the "Arab village" and the Palestinians' own yearning for the village. This offers new possibilities for imagining, or re-imagining, a thriving Palestinian community that redefines its destiny by re-thinking the urban space and employing dynamic tactics to reconstruct a vernacular for the future.

Haifa is considered as the only city in Israel where Arabs and Jews maintain some sort of coexistence. Within the context of city/modernity vs. village/tradition, I examine the adaptation of vernacular form to a new cultural meaning that defines the re-emergence of Arab urban life. Palestinian claims to the city are explored within a framework of tradition and its role in constructing a vernacular in the midst of a modern city. This is an attempt to understand how those claims are translated into urban politics and practices, and how they give new meaning and authenticity to ethno-national aspirations.

As an activist, I am interested in how urban communities maintain their identity and integrity in the face of local, national and supra-national powers. As an architect and planner, my concern is the potential of the city to contain and accommodate urban life. The trajectories of Wadi Nisnas and the German Colony, as they change and transform their meanings in the city, are indications of the power of place to produce and reproduce traditions.

Palestinian urbanity and the challenge of the "Arab Village"

Palestinian and Jewish Israelis tend to live in separate settlements and towns. The only Israeli cities considered 'mixed' - Haifa, Tel-Aviv-Jaffa, Lydda, Ramla, Acre, Upper Nazareth and Jerusalem (which should probably be treated as a category in its own right) – although accounting for a mere 9% of the total Arab population in Israel, are the only shared Arab-Jewish spaces in the country (Falah et al., 2000). As Goren (2008) indicates, the term 'mixed city', was coined during the British Mandate in Palestine. But since1948 the term has been used to denote situations in which Jewish and Arab communities are under the same urban jurisdiction.

As to whether Haifa, with 30,000 Arab residents, just under 10% of the city's total population (the rest being mostly Jewish)[2], is in fact a mixed city, is open to question (Kallus and Kolodney, forthcoming). Jews and Arabs have lived in Haifa under the same municipality since the early 20th century. With the establishment of the State of Israel in 1948 the Palestinian community remaining in the city has become a marginalized minority (Segev, 1984). These events have given rise to doubts as to whether Haifa is a "mixed", "ethnically fractured" or "ethno-nationally contested" city (Leibovitz, 2007). Nonetheless, for many Palestinians, especially for Haifa's residents, the history of Haifa is a lived daily experience, and an important aspect of their identity (Habibi, 1993; Kanafani, 2001). Moreover, the continuity of Palestinian residence in the city represents ethno-national aspirations. It embodies the city as a collective symbol of united national memory against the local memory of the village (Hasan, 2005).

Can a lost urban tradition be restructured? Can it be reinvented in an existing urban form and thus become a new vernacular? Let us consider Wadi Nisnas and the German Colony, two neighborhoods located in the midst of the city of Haifa, and examine their different and

[2]*About 55% of the Arabs living in Haifa are Christians. The other 45% are mainly Moslems (City of Haifa, 2006)*

complementary struggles to maintain Palestinian urbanity in an Israeli city.

Top-down imposition of a Palestinian vernacular

Wadi Nisnas is the only Palestinian neighborhood in Haifa where the buildings and infrastructure were not destroyed during or after the 1948 war. Despite population changes, the physical fabric of the neighborhood has remained fairly intact, and currently represents a quasi-authentic Palestinian urbanism. The area was developed at the end of the 19th century as a modern Christian neighborhood outside the walls of Haifa to accommodate Arab labourers from the surrounding area. Neighborhoods in Haifa were developed according to religious affiliation, encouraged by the Ottoman Government that ruled Palestine until 1918, and by the British Mandate that followed (Goren, 2006). In the socio-geographic pattern thus created, Christian neighborhoods were established to the west of the Old City, Muslims to the east, and the Jewish community settled on the lower slopes of Mount Carmel to the south (Goren, 2006)[3]. Before and during the 1948 war some 65,000 Arabs left Haifa. The remaining 5,000 Arabs, Christians and Muslims alike, were concentrated by the Israeli authorities in Wadi Nisnas and its immediate surroundings (Morris, 1991, p.107). The order, issued by the commander of the occupied city on July 1st 1948, allowed five days for completing the transfer of all Arabs from the Carmel and other mixed neighborhoods to houses evacuated by refugees from Wadi Nisnas (Segev, 1984, pp. 69-70). After the war, the Wadi was designated as the permanent location for the transferred population by the Committee for Housing Arabs, which was responsible for arranging long-term housing for Arabs who had been relocated during the war (Goren, 2006). Wadi Nisnas thus became the centre of Haifa's Palestinian community, providing that community (including those living in other parts of the town) with education, religious, and other civic and cultural services.

Wadi Nisnas has a very mixed character, with a rich diversity of businesses and commerce, a lively market, and many public buildings including schools, kindergartens, clubs and churches. Many public societies and NGOs operate in the area, as well as iconic cultural landmarks such as the Al-Midan Theatre, the Arab newspaper Al Ittihad published since 1944, and the Arab-Jewish centre, Beit HaGefen, established in 1963 by the municipality. The neighborhood is densely built with a homogeneous urban morphology characterized by the narrow winding streets and steps of the sloping terrain (see Figures 5 and 6). The layout and physical attributes distinguish it from its surroundings, and the topography offers views from and into the neighborhood, allowing for definition of its perimeters. This concentration of a Palestinian population in a clearly defined area within the urban fabric has consolidated a community that is intimate and well established, not only because of its traditional modus vivendi, but also because the Palestinian population of Haifa has had few opportunities of expanding beyond its boundaries (ASP, 2006).

Over-population and the resultant congestion,

[3] *Two municipal institutions, "Committee for Arabs" and "Committee for normalization", were responsible for Arab residents in Haifa following the 1948 war (Segev, 1984:71).*

Figure 5: Huri Street in Wadi Nisnas

Figure 6: Visitors in Wadi during the Holiday of Holiday festival

neglect and deterioration of the infrastructure and lack of new development have caused the neighborhood to decline. A survey made in 1995 indicated that the buildings are in poor condition, and there is a chronic shortage of public spaces, those that do exist being well below the standard criteria (Amidar, 1995). The results of the 1995 national census ranked Wadi Nisnas in cluster 6, an indication of its poor socio-economic condition and standard of living[4]. Over the years there has been little private investment in the neighborhood due to lack of land and a low owner rate. More than half of the buildings in the Wadi are "abandoned properties", i.e. belonging to Palestinian refugees who did not reclaim them after the 1948 war. Hence they officially belong to the Israel Land Authority, and are managed by the government's housing company Amidar[5].

In 1976 Wadi Nisnas was designated for rehabilitation by the Ministry of Housing and Construction and included in the National Renewal Project. The intention was to initiate social and economic change in selected neighborhoods through improvement of housing and the urban infrastructure, and through investment in programmes for education, health and employment (Elazar and Marom, 1992). Most of the neighborhoods selected for the project were government housing estates originally built for Jewish immigrants – low-standard dwellings for socially disadvantaged populations. Wadi Nisnas was an exception. Beyond recognition of its condition, the choice was intended to demonstrate equality in distribution of government funds. It allowed extensive repairs of the infrastructure - sewers, drainage, and road systems. But no funds were made available for improving personal standards of living. Hence the neighborhood has retained its "Arab-ness".

The uniqueness of the Wadi derives from its actual and symbolic ongoing existence in the midst of an ethno-national conflict. Its physical preservation as an Arab site, together with its inhabitants, is a demonstration of Palestinian identity in an ethno-nationally contested city. Its "Arabism" emphasizes the uniqueness of

[4] *This ranking ranged from 1 (lowest) to 20 (highest). For comparison, Neve David, an immigrants' neighborhood built in the 1950s, is ranked at the same level as Wadi Nisnas, while Carmelia, on Mount Carmel, is ranked at 19 (Haifa Municipality, 2006a)*

[5] *According to Israeli law, any property left unoccupied after November 29, 1947 became "abandoned property". The Government Custodian is authorized to develop this property through the Development Authority, a legal body established in 1951 and used by the Israel Land Authority to oversee these properties. Abandoned properties were sold to the Development Authority by the Government Custodian to cover ongoing expanses. Accrued funds are to be used after peace is established to cover both the refugees' needs and compensation to the Jews who left Arab countries for the properties they left behind.*

Haifa as a 'mixed city', endowing the city with a relative advantage in the conflicted Israeli space, where its "normality" is emphasized against the homogeneously "white" city of Tel Aviv and the ostensibly "united", but actually painfully divided, city of Jerusalem.

This strategy, employed by the municipality especially during the Holiday of Holidays festival, is intended to attract tourists to the Wadi and into the rest of the city. Preserving the Wadi as an "Arab-village" neighborhood is a marketing strategy – Haifa as a mixed city in which a Palestinian population maintains its traditional way of life - reinforcing the image of the city as a site of Arab-Jewish coexistence. Preserving the Wadi's Arab-ness presents Haifa as more progressive than other Israeli cities, as a city of coexistence (Kallus and Kolodney, forthcoming).

The German Colony – spontaneous bottom-up revival of Palestinian urbanity

The German Colony was built by the Templers at the end of the 19th century outside the city wall of Haifa. This fundamentalist religious group drifted away from the Lutheran church and believed that living in the Holy Land would hasten the second coming of Christ. The Haifa colony was the first of several established in the Holy Land - near Jaffa, in Galilee, and in Jerusalem. The Templers employed up-to-date farming methods, and introduced local industries that brought modernity to Palestine, which had long been neglected by the Ottomans. They imported agricultural machinery and engaged in "mixed farming," combining dairy farming and field crops, used soil fertilizers, better methods of crop rotation, and raised new crops such as potatoes. Registering the land was problematic however, due to back taxes and local boundary disputes, so they gradually abandoned farming in favour of industry and tourism, building hotels, opening workshops, and establishing an olive-oil soap factory. By the end of the Ottoman era the colony had 750 inhabitants, 150 dwellings, and dozens of businesses.

The Templers adhered to strict planning principles. Their homes lined the long main boulevard, about 35 metres wide, which ran from north to south, dividing the settlement into eastern and western parts. Each part was again divided by a 12-metre-wide street, and

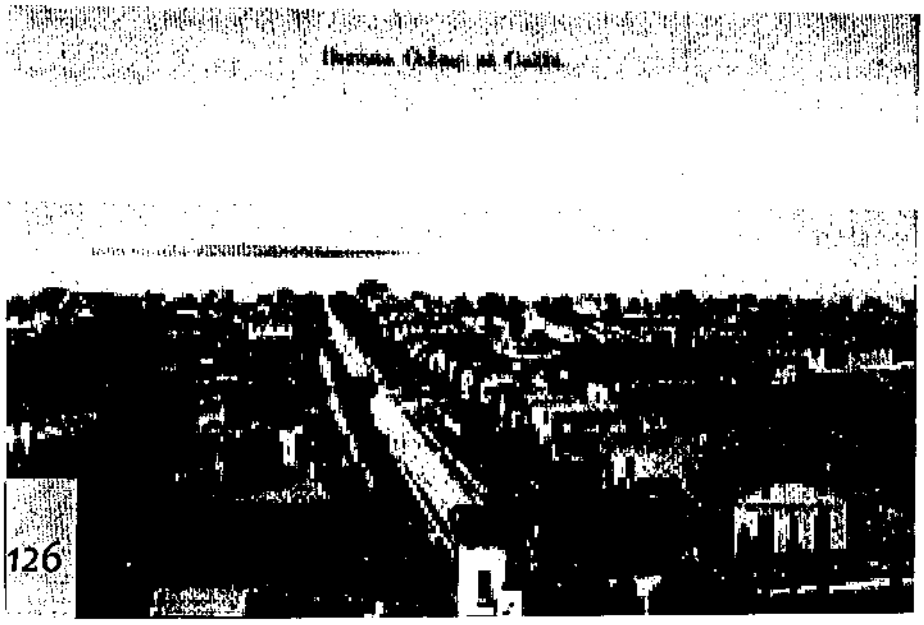


Figure 7: the German Colony neighborhood in i1906

(source: a postcard from the Rimon collection)

6-metre-wide alleys connected all streets. Single-family homes for farmers and artisans, each on a separate plot and with gardens in the rear, lined the main boulevard. Vineyards were planted at the top of the mountain slope, stretching from the dwellings to the present-day Bahai complex.

Hotels, a factory, shops and enterprises were all built at the intersection of the main avenue (now Ben-Gurion Avenue) and Jaffa Road, which runs parallel to the coastline (Fig. 7).

A typical Templar structure consisted of three levels. The basement, half of which was sunk in the ground, served as an area for storing water and provisions. From ground level a few steps led up to the kitchen, dining-room and central living room. The upper level was occasionally protected by a tiled roof, and contained the sleeping quarters and guest rooms. The sloping roofs are timber and tile constructions, though the Templers initially followed the local practice of constructing the flat roofs that prevailed throughout the Middle East. The eaves were embellished with stonework that concealed the drainpipes. The houses had gardens with sunken wells, workshops, and sheds for livestock.

The British author and traveler Laurence Oliphant's first impression of the German Colony is most telling:

"Leaving the town by the western gateway, we ride for about a mile parallel to the seashore between cactus hedges, and suddenly find ourselves apparently transported into the heart of Europe. Running straight back from the beach for about half a mile and sloping upward for about a hundred feet in that distance, to the base of the rocky sides of Carmel, runs the village street. On each side of it is a pathway, with a double row of shade-trees, and behind them a series of white stone houses, of one or two stories, generally with tiled roofs, each surrounded with its garden, and each with a text in German engraved over the doorway" (Oliphant, 2001 [1887], pp. 23-24).

When the Ottomans in Palestine were routed in the First World War, the German colonists were regarded as enemy aliens. In fact many of them had been recruited by the Imperial German Army, fighting together with the Ottoman army against the British. Haifa was conquered only after the war ended, so the German colonists of Haifa were not deported to Egypt, as were those of other Templer colonies. At the outbreak of World War II colonists with German citizenship were rounded up by the British and interned, together with Italian and Hungarian enemy aliens, in camps at Waldheim and Bethlehem of

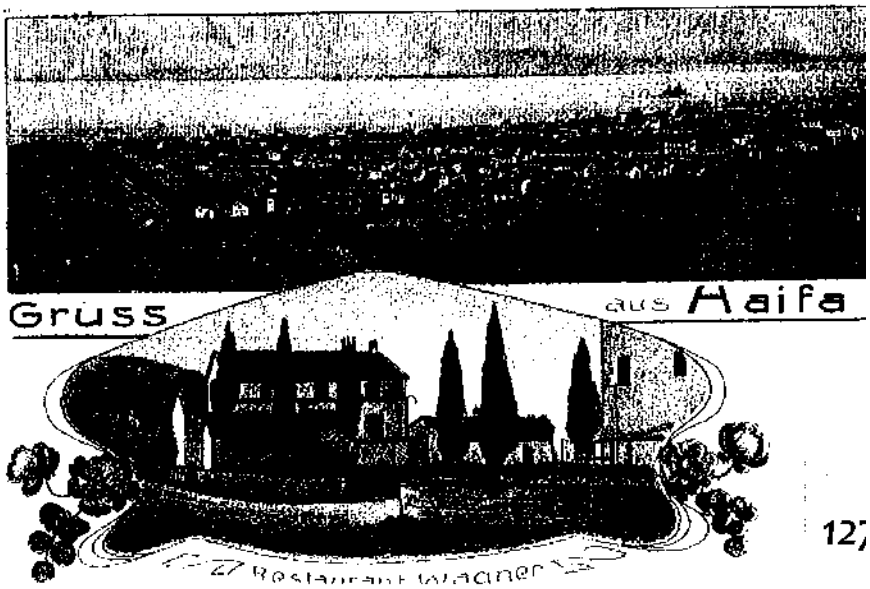


Figure 8: depiction of the German Colony neighborhood in the early i1900 (source: a postcard from the Rimon collection)

Galilee, and later deported to Australia via Egypt.

The German Colony is still an important axis in Haifa, linking the sea on one side with Mount Carmel on the other via the recently restored Bahai Gardens. After many years of inertia, Haifa Municipality began restoration in the late 1990s during the euphoric days following the Oslo Accord, the aim being to attract tourists. The project, funded by the Ministry of Tourism and fuelled by the newly developed Bahai Gardens, consisted mainly of restoring the public infrastructure in the expectation of attracting private investors to continue restoration of the buildings. Following the Palestinian Intifadas and the escalation of terrorist attacks, the almost completed project was about to collapse, but little by little new bars and restaurants have been opened by local Arab investors. It is interesting to note how the former farm buildings and gardens have been transformed into leisure spaces - restaurants and cafes with open terraces suited to the mild Mediterranean climate (Fig. 8).

Today this newly renovated area attracts Arab and Jewish Israelis from all over the country, and has become a major place of leisure for the Palestinians of Haifa and the northern region of Israel. It is a popular destination mainly for middle-class and educated adults (Jabareen, 2008). A municipal plan to attract a young Jewish clientele to other leisure areas in the city, such as Moriah Avenue along the Carmel ridge, has turned the German Colony into an even more distinctively Arab leisure space. Adjacent to but outside the residential area, it offers anonymity and privacy in a space that is non-existent in other Arab towns (which are mostly small in size and population). In contrast to Arab settlements where the sale of alcohol is usually forbidden, the German Colony has been dubbed "Arab alcohol valley". Although initially the municipality was not too happy about this, economic success is difficult to combat, and the place is now accepted and enjoyed by the city.

Reconstructing the vernacular

Seeking to challenge the municipal declarations about "co-existence", radical Arab-Palestinian citizens of Israel have combined their strategies in the struggle over space with more imaginative or visionary counter-discourses about opportunities of

Figure 9: The newly renovated Colony Hotel in the German Colony

Figure 10: Fattous Café in the German Colony

reviving Palestinian urbanity. Reconstruction of the Palestinian city, the centre of their cultural, national and social life which was lost in 1948 is considered as central to reconstruction of Palestinian identity. Contrary to the obliteration of the Palestinian city from the Israeli and Palestinian collective memories, and the representation of Palestinians as rurals, this is a call for the revival of Palestinian urban life. It acknowledges these nationalist sentiments as being closely linked to the pre-Nakba Palestine in which real cities did exist, and Haifa was the largest of them. But that thriving Palestinian city life disappeared in 1948, when the vast majority of Palestinians were either driven out or fled (Morris 1991). Those who stayed struggle to maintain their social, cultural, and economic wellbeing in an atmosphere of discrimination and second-class citizenship.

The first Palestinian Intifada (uprising) in 1988 and the Oslo Accord in 1993 revived the Israeli-Palestinians national identity and gave an edge to their political claims (Kimmerling and Migdal, 2003). Haifa has regained its position as the centre of Palestinian society. Social and cultural Palestinian institutions and NGOs are opening in the city. The newly renovated German Colony has become a focus of Palestinian leisure life. In a recent analysis of the success of the German Colony for Palestinian users, most approved were its qualities as a place of leisure, as safe, and as providing the privacy that does not exist in other Arab cities. In the context of the ongoing Palestinian-Israeli conflict, Haifa has a good reputation for coexistence between its two ethnic groups, Arabs and Jews. As an example of urban regeneration, the German Colony demonstrates the power of the built form to lend itself to the re-invention of lost traditions. New cultural meanings and new practices contribute to the re-establishment of Palestinian urban life, offering hope and authenticity for ethno-national aspirations, and thus creating a meaningful vernacular for the future.

References

Amidar (1995), Survey of Wadi Nisnas (Amidar archive)

ASP Report (2006), Engineering Report to Wadi Nisnas – The Tzionut street widening project, The social development committee team, Haifa: ASP (Hebrew).

Bishara, A. (1999) 'The Arabs in Israel: reading a fragmented political discourse', in Azmi Bishara (ed.), Between the 'Me' and the 'Us', Jerusalem: Van Leer Institute, Hakibbutz Hameuchad (Hebrew), pp. 569–96

Elazar, D.J. and Marom, Z.R. eds. (1992), Urban Revitalization: Israel's Project Renewal and Other Experiences, Lanham, MD: JCPA and University Press of America

Eyal, G. (1993), "Between East and West: Discourse about the Arab Village in Israel", Teoria Ve-Bikoret (Theory and Criticism), 3: 39-55 (Hebrew)

Falah, G. (1989), "Israeli 'Judaization' policy in Galilee and its impact on local Arab urbanization", Political Geography Quarterly 8(3): 229-253

Falah, G., Hoy, M. and Sarker, R. (2000), Co-existence in Selected Mixed Arab-Jewish Cities in Israel: By Choice or by Default?" Urban Studies 37(4):775–796

Goren, T. (2008), Cooperation in the Shadow of Confrontation, Ramat-Gan: University of Bar Ilan Press (Hebrew).

Goren, T. (2006) The fall of Arab Haifa in 1948. Beer-Sheva: Ben-Gurion University of the Negev Press (Hebrew)

Habibi, E. (1993), Sarayah, the Ghoul's Daughter, Tel Aviv: Hakibbutz Hameuhad (Hebrew)

Hasan, M. (2002), "The politics of honor: patriarchy, the state and the murder of women in the Name of family honor". The Journal of Israeli History 21, 1: 1-37.

Hasan (2005), Desolation of the city and the war against the memory: the winners and the defeated", Teoria Ve-Bikoret (Theory and Criticism), 27: 197-207 (Hebrew)

Jabareen, Y. (2008), "Urban leisure as a place of trust for an ethnic minority - the case of the German Colony in Haifa", Journal of Architectural and Planning Research 25(3): 240-253

Kallus, R. and Kolodney, Z. (forthcoming), "Politics of urban space in an ethno-nationally contested city: negotiating (co)existence in Wadi Nisnas", Journal of Urban Design

Kanafani, G. (2001), "Returning to Haifa", in: Elad-Buskila, A. (ed.), The other rooms: Three Palestinian Novellas, Or Yehudah: Hed Artsi (Hebrew)

Khamaisi R. (1990), Planning and Housing Policy in the Arab Sector of Israel, the Condition and the Status of the Arabs in Israel, Tel Aviv: International Centre for Peace in the Middle East (Hebrew).

Kimmerling, B. (2008), Clash of Identities: Explorations in Israeli and Palestinian Societies. New York: Columbia University Press

Kimmerling, B., Migdal, J. S. (2003), The Palestinian People: A History, Cambridge, MA: Harvard University Press

Leibovitz, J. (2007), "Faultline Citizenship: Ethnonational Politics, Minority Mobilisation, and Governance in the Israeli "Mixed Cities" of Haifa and Tel Aviv-Jaffa", Ethnopolitics, 6(2): 235–263

Lustick, I. (1980), Arabs in the Jewish State: Israel's Control of a National Minority, Austin: University of Texas Press.

Meyer Brodnitz, M. (1969), "Latent urbanization in Arab villages", Environment al Planning Association Quarterly 8-9: 4-1 2

Morris, B. (1991), The Birth of the Palestinian Refugee Problem, 1947-1949, Tel-Aviv: Am Oved (Hebrew)

Oliphant, L. (2001[1887]), Haifa, or Life in Modern Palestine, Adamant Media Corporation

Rabinowitz, D. and Monterescu, D. (2008), "Reconfiguring the "Mixed Town": Urban transformations of ethnonational relations in Palestine and Israel", Middle East Studies 40: 195–226

Rosenfeld, H. (1969). "Change, barriers to change and Contradictions in the Arab village family", American Anthropologist 70, 4: 732-752

Rosenfeld, H. and Carmi, S. (1977), Origin af proletarianisation and urbanisation of Arab villages in Israel, Quarterly for Social Research 12-19, 117-133 (Hebrew)

Sa'di, A. (1997), Culture as a Dimension of Political Activity: The Case of Palestinians in Israel", Theory and Criticism 10: 193-202 (Hebrew)

Schnell, I. (1980), Social areas in an urbanizing settlement: a case study of Taybe, Israel, Unpublished MSc thesis, Technion, Haifa (Hebrew)

Segev, T. (1984), 1949 – the first Israelis, Jerusalem: Domono Press (Hebrew)

Tamari, S. (2007), "Bourgeois nostalgia and the abandoned city", in Monterescu, D., Rabinowitz, D. (eds.), Mixed Towns, Trapped Communities: historical Narratives, Spatial Dynamics, Gender Relations and Cultural Encounters in Palestinian-Israeli Towns, Aldershot: Ashgate, pp. 35-50

Yiftachel, O. (2000), "Land, Planning and Inequality: Spatial distribution between Jews and Arabs in Israel", Position paper. Tel Aviv: Adva center (Hebrew)

MANAGING THE THREAT TO THE LOS' VERNACULAR QUALITY IN JAVA, INDONESIA[1]

Titien Saraswati

Abstract

The tobacco plantation in the area of Klaten Regency (Central Java) and Jember Regency (East Java) has many huge barns which dominate the surrounding landscape since the year of 1850s, named Los. This Los is for drying tobacco. The Los(es) can be found in remote area in the villages; such as in Bendo Gantungan village within Gayamprit tobacco plantation in Klaten Regency; and in Ajong village within Ajong Gayasan tobacco plantation in Jember Regency. Both areas of tobacco plantations are under the management of PTPN X enterprise (government's enterprise).

It was confirmed from previous research of Los in Klaten Regency that the Los has high vernacular values, not only from its organization of space, but also from its form, its local materials, and its local techniques. But the vernacular quality of Los is threatened by the nowadays situation we never expect before. For instance, the global change of the climate makes the wind blows more severe. This has been damaging many Loses in Jember Regency due to the light materials the Loses have which could not be saved from the harm of harsh wind. The light materials apply to the main structure of the Loses are from bamboo materials. Moreover, there were also some Loses which accidentally burnt out because of their vulnerable materials to the fire. In addition, there is a Los in Klaten Regency in which its main structure now was changed from bamboo piles to reinforced concrete columns, and so forth. It is unavoidably expected that in the future the vernacular quality of Los will be ruined.

This paper will explore the possible ways to reconstruct the Los in the future with very little destruction to its vernacular quality. This means that the vernacular traditions of the Los should be continued as much as possible.

Keywords: *Managing, Los, Threat, Vernacular quality, Java (Indonesia)*

Introduction

According to Padmo (1994), there have been three areas of tobacco plantations and companies in Indonesia since the Dutch occupation in the year of 1850s, that still exist nowadays. They are a large Vereenigde Deli Maatschappij (VDM) in North Sumatra; NV Klatensche Cultuurmaatschappij in Klaten Regency, Central Java; and Landbouw Maatschappij Oud-Djember[2] (LMOD) in Jember Regency, East Java. The development of private tobacco companies operating in those areas were from the 1850s to their take over by the Indonesian government in 1957. Tobacco in Klaten and Jember areas are high quality tobacco, are used only for cigars. Till now, there are three places in Indonesia which cultivate high quality tobacco, in Deli (North Sumatra), Klaten area, and Jember area. All are under the management of PTPN X[3] (Government Tobacco Plantation Enterprise X, Ltd.). Kartodirdjo and Suryo (1991) also strengthened the above statements that high quality tobacco has been planted in the above areas.

The Loses which were the objects of this study are from Klaten and Jember tobacco plantation areas under the management of PTPN X[4] ; they were Kebonarum/Gayamprit/Wedibirit plantation in Klaten (Central Java), and Ajong Gayasan/Kertosari plantation in Jember (East Java)[5] .

Brunskill (1993: 78-81) stated that the works of vernacular architecture comprises cottages and farm houses, farm buildings and associated structures, watermills and smithies, wayside chapels and some of the smallest and least pretentious of the parish churches. These vernacular buildings, humble though they may be, are monuments to the persistence of traditional designs and traditional building practices in this proud and self-sufficient part of the country. Accordingly, the Los can be categorized as farm house; in this study is a building for drying tobacco leaves.

Survey result

The appearance of the Los is saddle roof building, but very huge and large, dominating the landscape. Tobacco which is planted in Klaten[6] and Jember[7] are high quality tobacco for cigarette. So that it needs Los for drying it. Whereas tobacco in other areas such in Wonosobo (Central Java) and Selomartani (Yogyakarta Special Province) can be dried on the ground placed on woven bamboo because it is not high quality tobacco for cigarette.

Actually Los is used twice a year, that is during the months of July to September, and December to March. The remaining of the days for the Los are, sometimes, can be used for the process of making compost, whereas any other Los is remains empty. Los is still sturdy because when it is time for the Los to be used, the people repair it a little bit.

The Los in Klaten now is the Los that was constructed in 1994. Actually Los has been repaired lightly before the people use it. Every three years the building materials of the Los are changed, but the changed materials still use the same kind of building materials, for instance: bamboo, rapak or blabat (dried sugar-cane leaves[8]), etcetera. This also applied for the Los in Jember.

In the period of July to September, the Los is used for drying tobacco which was covered

with "see through" fabrics (strimin fabrics) during its growing-up in the ground. Whereas the period of December-March for the uncovered tobacco. Actually the Los has no differences for both kinds of tobacco, and also no differences whether it is in Klaten nor in Jember.

It was confirmed from previous research of Los in Klaten (Saraswati, 2008) that the Los has high vernacular values, not only from its organization of space, but also from its form, its local materials, and its local techniques. Although the Los in Jember was never studied for its vernacular quality; but its organization of space, its form, its local materials, and its local techniques are very similar to those in Klaten. So that the Los in Jember can be written here side by side along with the Los in Klaten, as in the following.

The form of the Los

The Los in Klaten is rectangular, actually the length about 100 meters, the width 18 meters, and the height 12 meters. The roof is saddle roof[9] (pelana), with its slope about 45 degrees. A bundle of tobacco leaves comprises of 50 leaves, named dolok. One Los can accommodate approximate 20.520 dolok hung-up inside. The way to dry tobacco leaves is by fumigation with smoke in the night for 11 days consecutively, after that for every 2 days. The smoke can be produced from peeled skins of paddy seeds (sekam), packed of coals (briket batu bara), or timber (kayu bakar). The orientation of the Los always North - South in length, to prevent the harsh North - South wind entering the Los.

The Los in Jember has a bit different in size. The standard length is 60 meters, comprises of 30 "rooms" in which 1 "room" is 2 meters in length. The width of Los can be 18 to 20 meters, the side height is 5 meters and the central height is 12,5 meters. The orientation of the Los also North – South in length, but there are also Loses which are East - West orientation in length. This is because of the limited land available for the site of the Los.

The plan of the Los is rectangle, as the plan of local people's houses. The roof is saddle roof, as the roof of local people's houses. Dakung (1983) stated that the type of Javanese house is rectangular or square in plan, and the roof is saddle roof, whereas there are any other forms of Javanese type of roofs. Saddle roof usually can be found among Javanese houses in the villages. It can be said that the Los had adopted the form and the roof of local people's houses in the village, means that the Los is loyal to the local form. Furthermore, the form of Los is timeless, never changed, as Jackson (1984) said.

Organization of space

The space inside the Los in Klaten is divided to the spaces for office, equipment's storage, storage for peeled skins of paddy seeds (sekam) and timber, and – mostly – space for drying tobacco leaves. This space occupied the most inside the Los. There are no dividers among those spaces, except for office and storage. In the middle of the Los there is a space 6 x 6 meters square for "cooling" dried tobacco leaves before these leaves are ready to be stored to tobacco company. Main entrance of the Los is in its length side. Circulation path is in the centre of the Los.

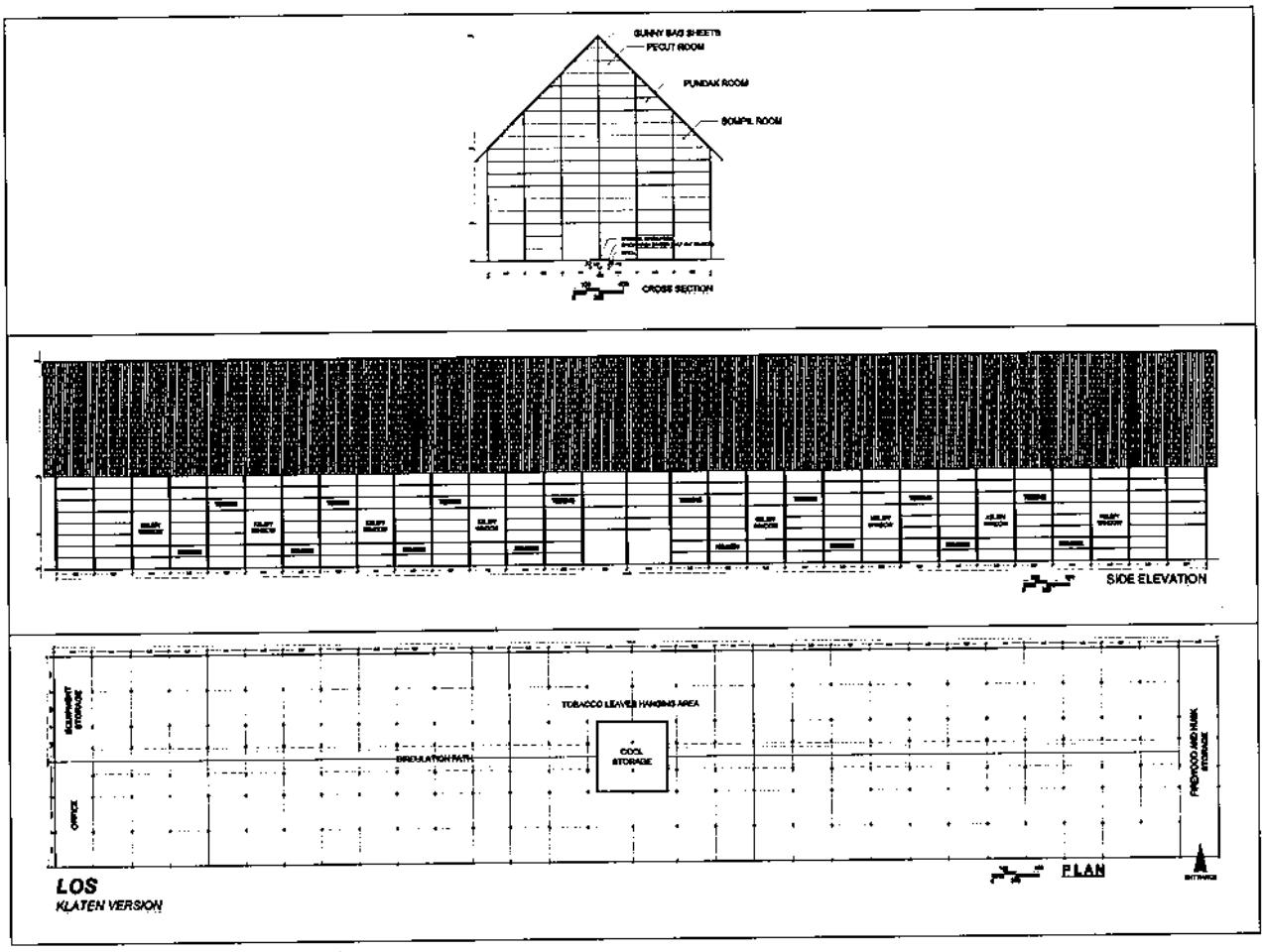
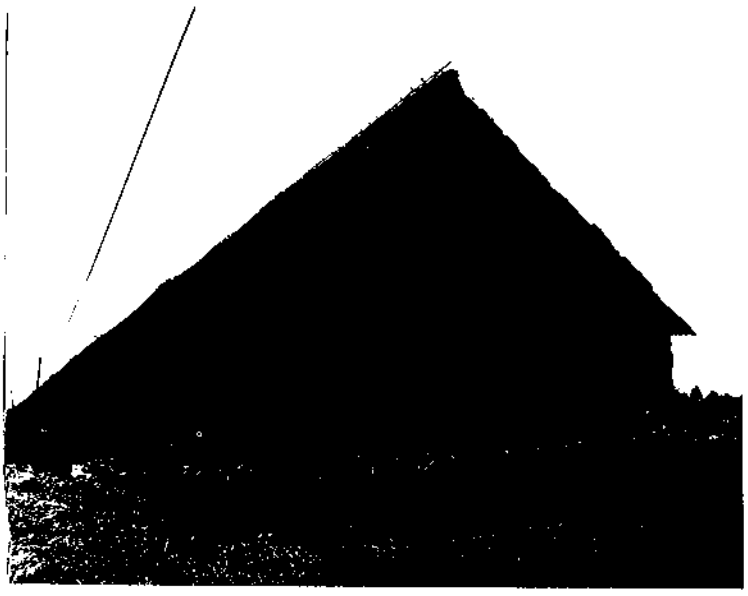
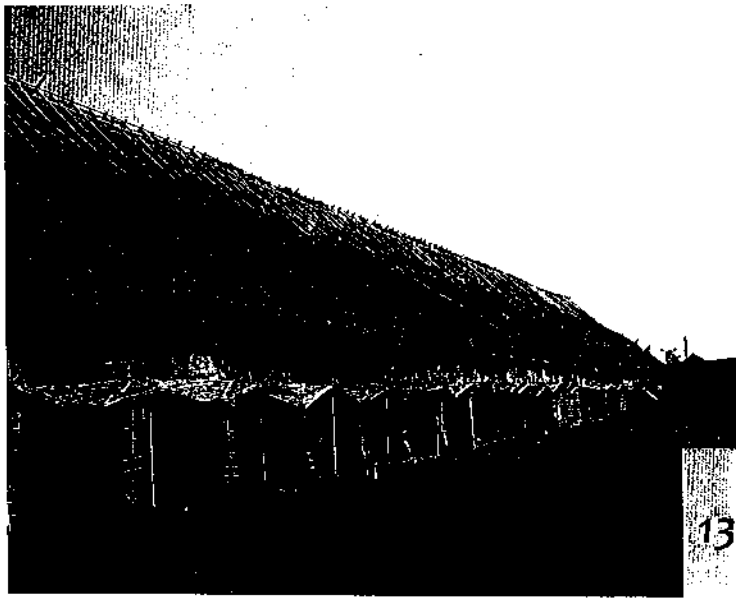


Figure 1: Front elevation of Los in Klaten.
Source: Saraswati, 2008.

Figure 2: Side elevation of Los in Klaten
Source: Saraswati, 2008.





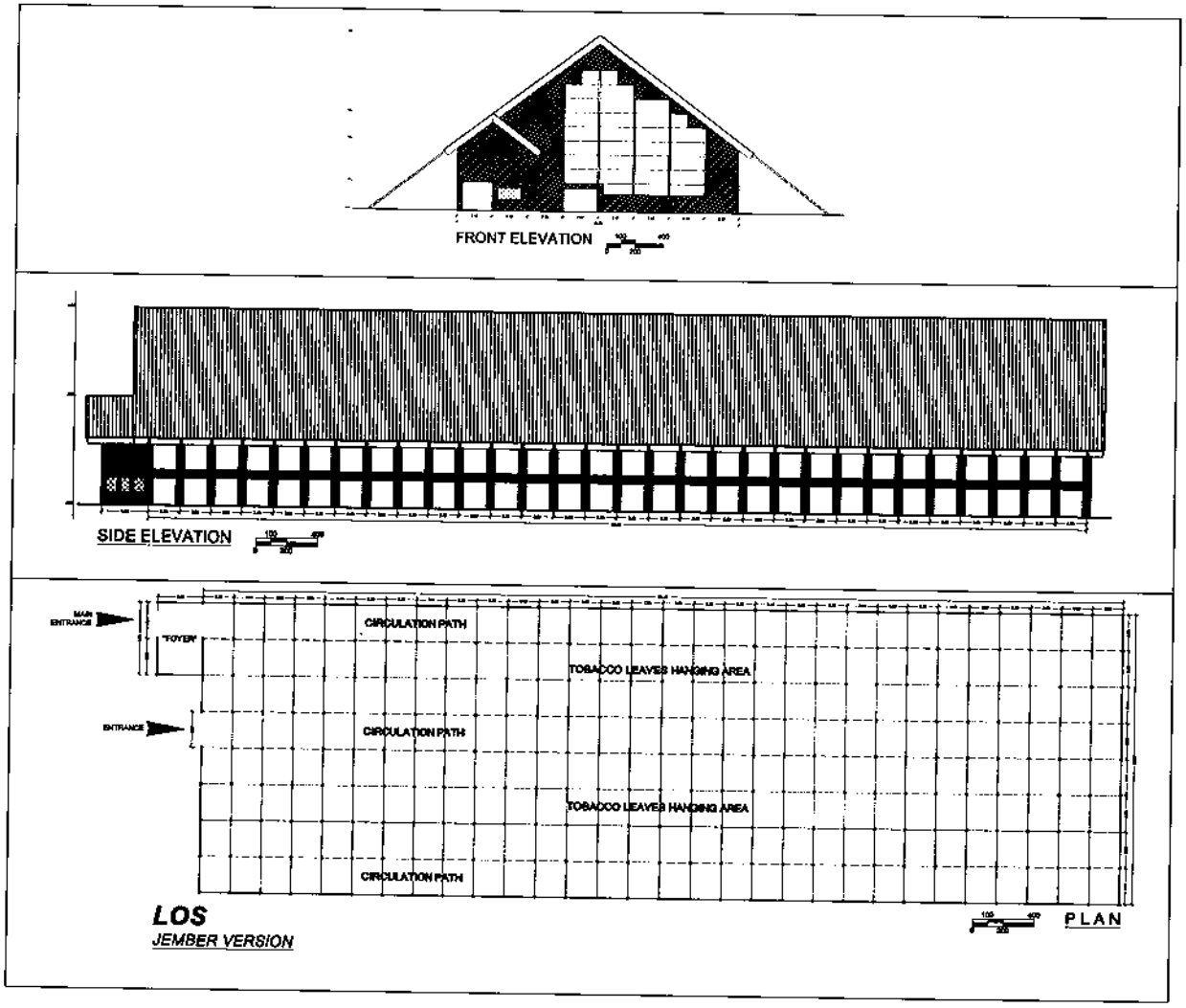
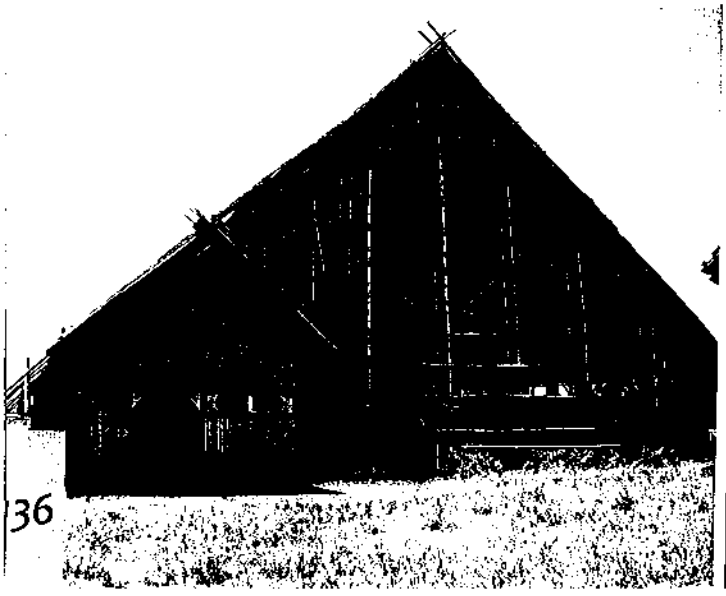


Figure 3: Front elevation of Los in Jember.
Source: Author's documentation, 2010.

Figure 4: Side elevation of Los in Jember.
Source: Author's documentation, 2010.



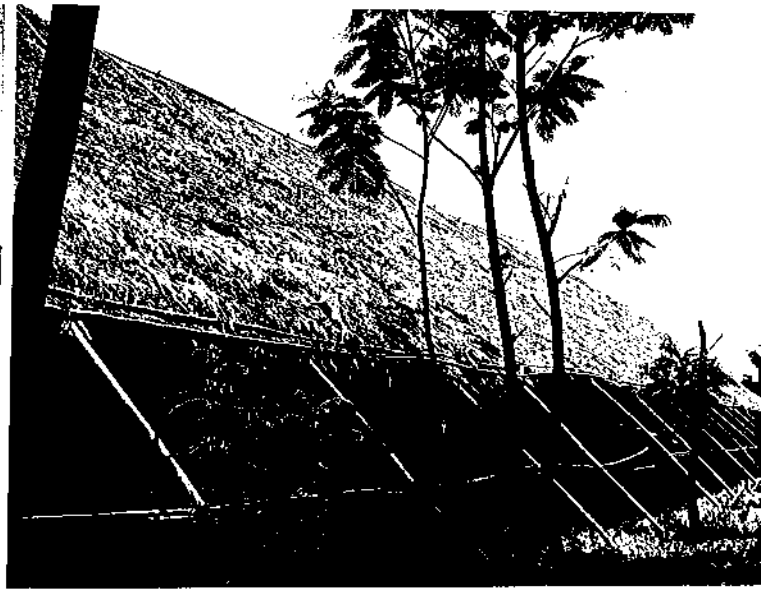


Figure 5 : Bamboo roof hindered by hanging tobacco leaves in Klaten's Los.
Source: Saraswati, 2008.

Figure 6 : Bamboo roof in Jember's Los.
Source: Author's documentation, 2010.

The Los in Jember has similar space inside, but there is no space for equipment's storage nor cooling storage. Circulation paths are in the centre as well as in the side of the length of the Los. Main entrance placed in the side completed with a space similar to "foyer" to keep bicycles or motorbikes of the workers. Other entrance is placed in the centre.

Building materials

The main structure

The columns and the the roof are made from bamboos[10], because of the easiness of maintenance. The tobacco company bought bamboos from local people in Klaten as well as in Jember. This bamboo roof was constructed as the covering of the Los huge barn. It was not constructed as a truss. This bamboo roof can be seen as a system of purlins, bearing a roof-cover made of dried sugar-cane leaves. They are nailed or lashed.

Foundation of Los made from stone "umpak." The joint among bamboo column use cable wire and nails. Between columns are strengthened by bamboo as well, in which the dolok is hung up. But there is exception: Los number 10 in Klaten used concrete columns in its sides.

Roofing

The roof is covered by dried sugar-cane leaves because it is light, smoke can penetrate out

Figure 7: Dried sugar-cane leaves roof covering (rapak) in Klaten's Los.
Source: Saraswati, 2008.

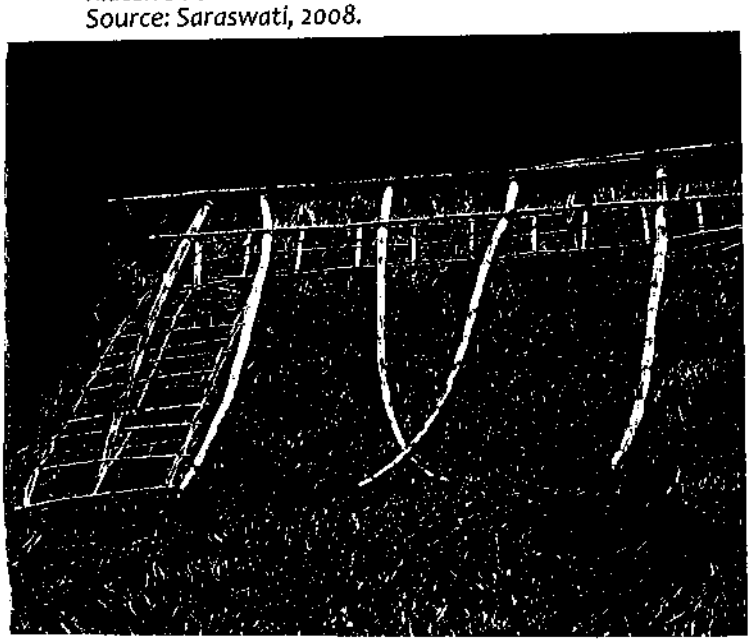
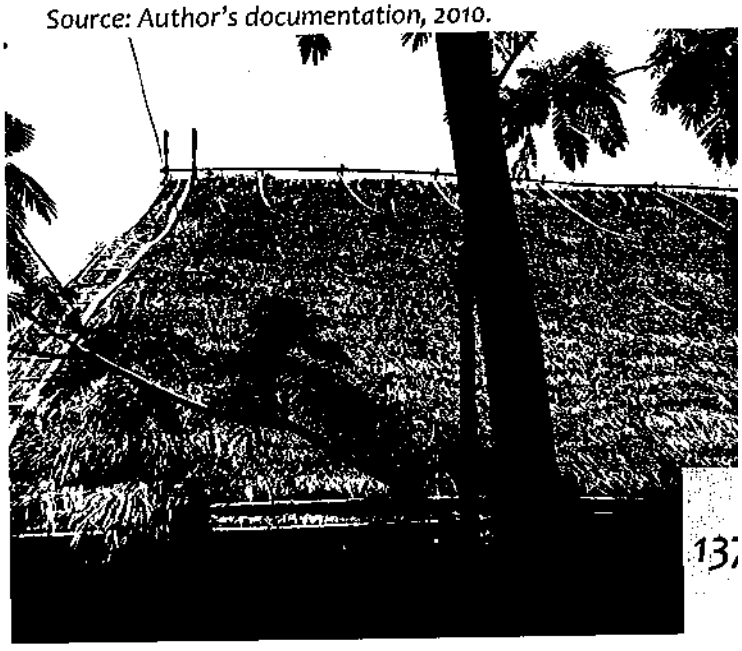


Figure 8: Dried sugar-cane leaves roof covering (blabat) in Jember's Los.
Source: Author's documentation, 2010.



among the chinks of rapak/blabat whereas the humidity of the Los still be kept. The wind hardly ever enter the Los because the rapak/blabat is tied close together. The wind can damage the process of drying tobacco leaves, thus influencing the colour of dried tobacco leaves.

When the rapak is damage, it is very easy to be repaired. Sugar-cane leaves can be found in the area because there are also sugar-cane plantation there.

The envelope of the Los

As aforementioned, the bamboo roof was constructed as the covering of the Los huge barn as well. Within bamboo columns were placed "wall" made of combination of rapak, woven bamboo, and sometimes also sheets of gunny bags to prevent the hot air entering the Los. There are the openings or windows. During rainy season the windows are closed. Tobacco leaves inside the Los should be kept free from rain water to prevent them not to be fungous.

The floor

The ground inside the Los still be kept as the material for flooring. No floor tiles or concrete covering the floor, local people just rammed down the soil. When the floor is a bit damaged, it is easy to reconstruct. Sometimes the ground is sprayed with water to keep the air and the hung tobacco leaves not totally dried. In the middle of the Los in Klaten, there is a path for circulation which is bordered by small ditches in its two sides. The ditches are poured with water so that the circulation path kept tidy from the dust. Sometimes the water is also spread out over the circulation path using water pipes. In Los in Jember is almost the same, no floor tiles or concrete covering the floor. But the circulation path is a bit different. This Los has circulation paths in the centre as well as in the two sides of the length of the Los.

Discussion

Some Loses in Jember (28 Loses[11]) have been damaged due to the light materials the Loses have which could not be saved from the harm of harsh wind. In fact those are the Loses which their orientation are East - West direction in length. That's why they could not

Figure 9: Circulation path inside Klaten's Los. Source: Saraswati, 2008.

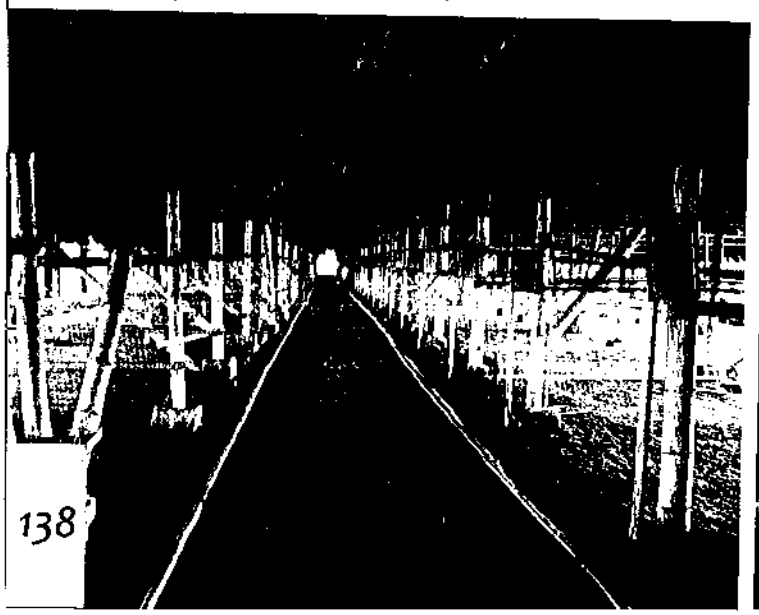
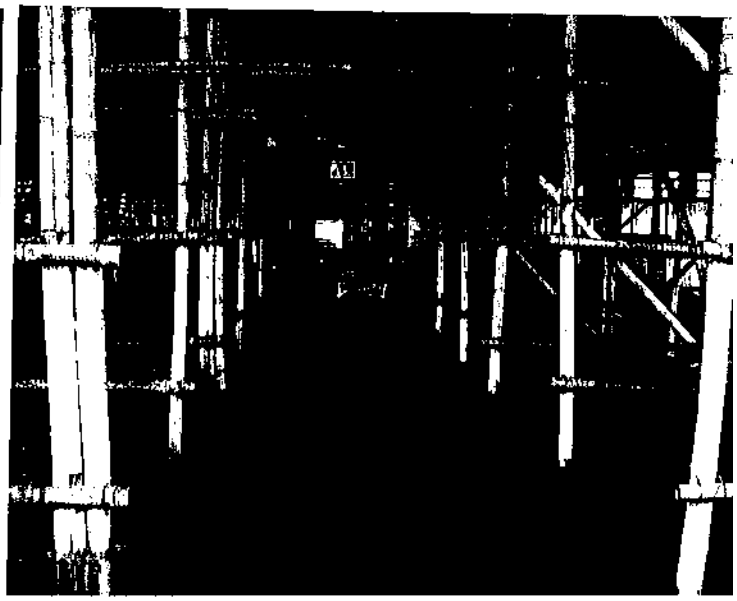


Figure 10: Circulation path inside Jember's Los. Source: Author's documentation, 2010.



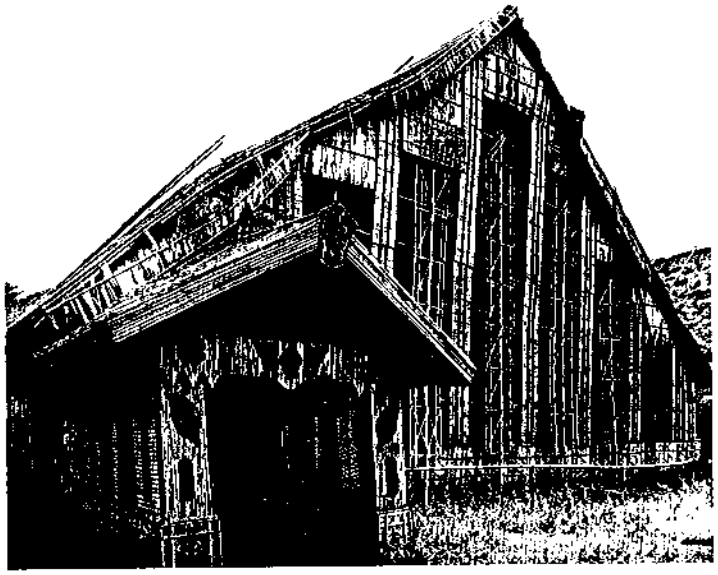


Figure 11: Jember's Los damaged by harsh wind. Source: Author's documentation, 2010

Figure 12: Jember's Los totally damaged by wind storm. Source: Author's documentation, 2010.

be saved from the harsh wind ("puting beliung" wind or storm). Even though the available land is limited to be a site for the Los, but the Los should be constructed in North - South direction. It is what we say local wisdom, that people have already known about the knowledge to place the Los right on the site. It seemed that the tobacco company (PTPN X) did not want to have smaller Los. They seemed to compensate the site of the Los to yield profit.

There is an experiment to protect the Los from harsh wind in West Ajong Gayasan plantation in Jember. In one Los (is still in the case of experimentation), the bamboo columns are changed to iron columns in every 5 rooms (equal to 10 meters). The incorporated bamboo bars are also changed to irons till the upper part (the roof) of the Los including the bars for hanging dolok. The bamboos along the length of the Los are also changed to iron bars. It is interesting that the size of the irons are in the same size with the size of the bamboos. The foundations are from concrete for those iron columns. This experimentation so far has been one year long, and the result to protect the Los from harsh wind is good. When the harsh wind blows, this Los still stands up on the ground while other Loses without iron columns are damaged and felt down.

It is a very good experimentation, and it should be kept as long as the iron columns and bars not dominating the materials of the Los. And this should be done specifically for the Los which its site is within a large paddy field or within a large open space where there are no trees or buildings to weaken the blow of the harsh wind.

Figure 13: Jember's Los with iron columns and bars. Source: Author's documentation, 2010.

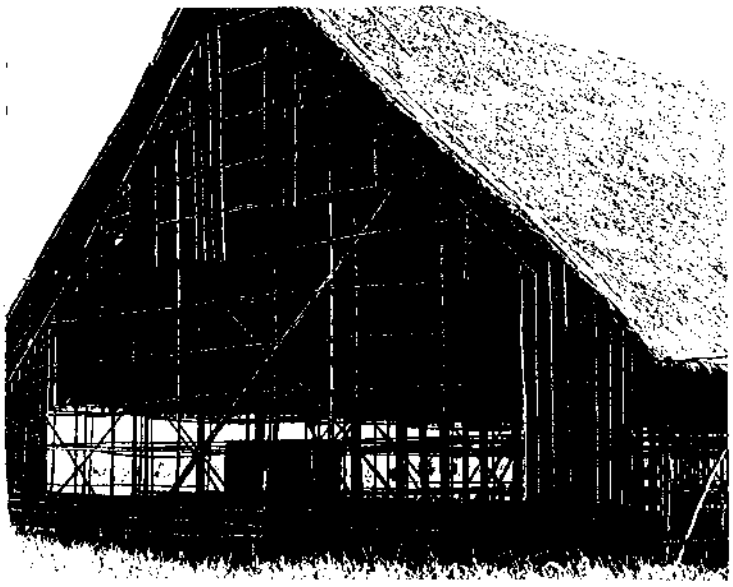


Figure 13: Jember's Los with iron columns and bars. Source: Author's documentation, 2010.

According to Janssen (1995: 42-43), the danger of wind can be minimized by: (1) stabilizing braces in the plan of the roof; (2) a ridge ventilator to control both high temperature under the roof and wind suction; (3) in case there are large openings towards the wind will resulted in the most dangerous situation during a storm. To counter this is by creating an opening in an area away from the windward wall. For number (1): Los in Jember (and in Klaten as well) is constructed without trusses, but it was bamboo roof that also be constructed as the covering of the building. Possibly the bamboo braces can be placed within or under the purlins. Accordingly, bamboo columns till bamboo roofs can be strengthened by constructing double-bamboos or two bamboos for one "umpak" foundation. Other way to prevent danger of wind by changing bamboo roofs to trusses. But it needs more financial plan. Number (2): It is impossible to the Los because when more wind passing the Los will make the colour of dried tobacco leaves are not as good as the colour needed. Number (3): The best way is constructed the Los in North - South orientation in length. When there is no way to avoid constructing Los in East - West direction, the openings of the Los should be open in one side only away from the windward wall during a storm. If this done carefully during a storm, highly likely changing wind direction and save the Los.

The materials of the Los (bamboos, dried-sugar cane leaves, gunny bag sheets) also should be kept even though these are vulnerable to the fire. According to Masner (1993: 199), the true vernacular building is the result of building

Figure 15: Jember's Los with iron columns erected on concrete foundations.
Source: Author's documentation, 2010.

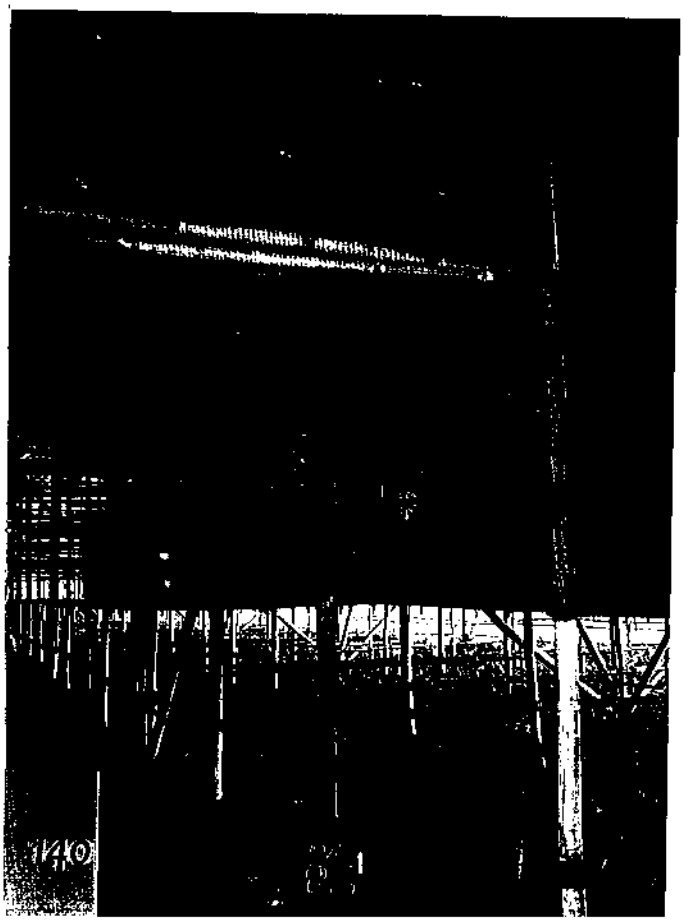
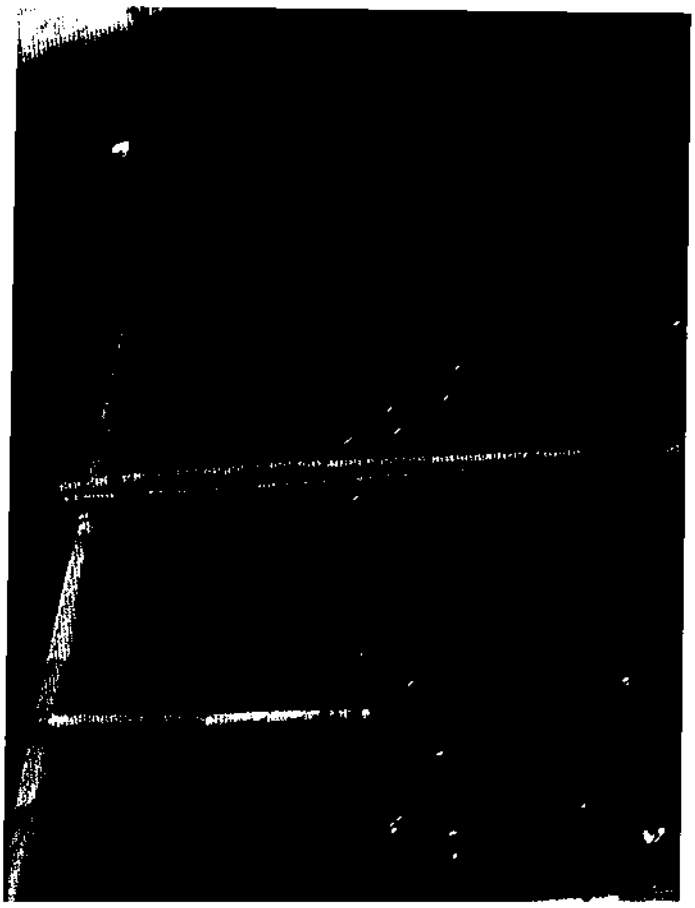


Figure 16: Jember's Los with iron columns and bars.
Source: Author's documentation, 2010.



from readily available materials, locally found. There is a Los which has been burnt by the struck of lightning in Jember. And there is also a Los that accidentally burnt out. To protect the Los from the struck of lightning, it is possible to construct lightning conductor; that is metal rod fixed on the top of a Los and connected with the earth to prevent damage. No other ways to protect the Los from lightning except by this; because the height of the Los is the highest within surrounding landscape, even compare to the height of the trees there. For the Los which is accidentally burnt out, just warn out the people there, even the workers, not to smoke nor play with fire nearby.

Furthermore, as explained before, bamboo roof was constructed as the covering of the Los huge barn. In this case the lifetime becomes a problem, because the bamboo cover is exposed to all weather conditions. According to Janssen (1995: 30), the bamboo cover even if preserved, it will last on average only two years. This statement matchs up to what the people or the workers do to the Los; that is every three years the building materials of the Los are replaced with the newer, same kind materials. In my opinion, the Los still can be categorized as vernacular one. The form and and appearance of Los are still the same as long time ago (timeless), and the materials of the building are still local materials. It is impossible that vernacular buildings with such materials will long lasting hundreds of years without any renewal of the materials.

There has also been experimentation in Jember for the Los that blabat for roof-covering was changed to "terpal" (light material of waterproof for rain coat) to prevent the wind damaging the roof- covering (blabat). The result was not goodfor the process of drying to bacco leaves. Even though the colour of dried tobacco leaves was better, but the aroma of it differed from the aroma when it was dried under blabat roof-covering. In fact dried tobaco leaves for cigarettes are considered "the best" when the aroma and the taste meet the requirement provided by the company. Actually there are workers from the company whose their tasks are to smell and bite dried tobacco leaves to ensure the aroma of tobacco leaves meets the requirement needed. So that it is still better to use blabat for roof-covering.

There is also Los number 10 in Klaten which uses concrete columns at its side parts[12] . Whatever the reason is, in my opinion, this should be avoided. The columns should be reconstructed back to bamboo columns when we concern to the vernacular quality of the Los in the future.

Concluding remarks

From the discussion above, there are some possible ways to manage the threat to the Los' vernacular quality. Therefore, the conclusions and recommendations can be drawn in the following.

Conclusions

1. The Los should be oriented in North - South direction in its length. It is a local wisdom people there have already known.
2. When the site of Los cannot accommodate

the orientation and the standard size of the Los, that means the Los will be construted in East - West direction in its length; it is better:

(a) to strengthen the Los with irons for some of the columns, braces, and bars in which the irons have similar size to the size of bamboos used, and as long as the irons not dominate the materials of the Los; (b) to construct double-bamboo for each of the column till arrives at bamboo roof structure; (c) to change bamboo roof structure to trusses; (d) the openings of the Los should be much more in the North elevation of the Los than those in the south one. The openings in the South one should be kept minimal.

3. The danger of harsh wind especially in Jember can be minimized as the same way as number 2(a), 2(b), and 2(c) above.

4. To protect the Los burnt because of lightning strike, construct lightning conductor to the Los. Also, warn out the people there not to smoke nor play with fire nearby.

5. Concrete columns of Los in Klaten should be reconstructed back to bamboo columns.

Recommendations

1. The government's enterprise (PTPN X) who manages tobacco plantation should not replace bamboo columns to concrete columns in Klaten in fact that there is no harsh wind in Klaten area.

2. When the Los is still in its real form and its local building materials, there will be a chance to run tobacco plantation tourism in both areas. People there and PTPN X will gain earnings from this tourism.

References

Brunskill, R. 1993. *The traditional buildings of Cumbria, in Companion to contemporary architectural thought*, edited by Ben Farmer and Hentie Louw. London dan New York: Routledge: 78-81.

Dakung, S. 1983. *Arsitektur tradisional Daerah Istimewa Yogyakarta* (Traditional architecture of Yogyakarta SpecialProvince). Jakarta: Depdikbud.

Farelly, D. 1984. *The book of bamboo*. San Francisco, CA: Sierra Club Books.

Jackson, J.B. 1984. *Discovering the vernacular landscape*. New Haven: Yale University Press.

Janssen, J.J.A. 1995. *Building with bamboo*. A handbook. London: ITDG Publishing.

Kartodirdjo, S. and Suryo, D. 1991. *Sejarah perkebunan di Indonesia. Kajian sosial ekonomi (The history of plantations in Indonesia. Socio-economics studies)*. Yogyakarta: Aditya Media.

Masner, M. 1993. *Is there a modern vernacular?, in Companion to contemporary architectural thought*, edited by Ben Farmer and Hentie Louw. London dan New York: Routledge: 198-201.

Padmo, S. 1994. *The cultivation of Vorstenlands tobacco in Surakarta Residency and Besuki tobacco in Besuki Residency and its impact on the peasant economy and society*: 1860-1960. Yogyakarta: Aditya Media.

Saraswati, T. 2008. Vernakularitas Los, bangunan pengering tembakau di Kabupaten Klaten, Jawa Tengah (Vernacular quality of Los, the drying tobacco huge barn in Klaten Regency, Central Java). *Jurnal Dimensi Teknik Arsitektur*, 36(1): 65-74.

End Notes

[1] Paper presented at the 5th International Seminar on Vernacular Settlement held by The University of Moratuwa, Colombo, Sri Lanka; on July 30-31, 2010.

[2] The word "Djember" was an out-of-date Indonesian spelling version. Accordingly, the right spelling now is "Jember".

[3] The number X in PTPN X means for tobacco plantation. Other crops such as sugar-cane, tea, coffee, etcetera which are also managed by the government have different numbers.

[4] From Klaten's office information, the company (government enterprise) had already changed the name from PPN Tembakau (Tobacco) IV to PNP XIX, then to PTP IX, and finally till now to PTPN X.

[5] From this poin then, Klaten Regency and Jember Regency are now written as Klaten and Jember only.

[6] There are 63 hectares tobacco plantations in Gayamprit, Klaten; comprise of more than 350 Loses.

[7] There are 950 hectares tobacco plantations in Jember, comprise of more than 500 Loses.

[8] People in Klaten called dried sugar-cane leaf as rapak, while those in Jember called it blabat. These are because of the local languages. Most people in Klaten are Javanese, whereas those in Jember are Madurese (people from Madura Island).

[9] A roof having two gables and one ridge, suggesting a saddle.

[10] There were Petung and Apus bamboos in Klaten, and Petung and Keles bamboos in Jember.

[11] http://antaranews.com/berita/1256486705/puting-beliung-rusak-puluhan-gudang-tembakau

[12] Unfortunately the photograph of Los number 10 could not be gained due to the difficulties to go there and the limited time to conduct field survey allowed by the company. This Los is far away in remotest area.

[illegible]

Krystina Kaza

Abstract

An Otla is a vernacular element that occurs in some traditional Gujarati homes. It has many variations known by many names in other parts of India, but generally performs the same function: it marks the transition from street to house, usually with a change in elevation, and often with a change in material. According to architect Balkrishna Doshi, it serves as the meeting place of the sacred (house) and the profane (street). It serves as a space where neighbors meet informally, and completes the street and the house, bestowing upon each a unique character.

This paper will discuss Dr. Doshi's Aranya housing settlement in Indore, India, focusing on the otla of the Economically Weak Sectors (EWS) houses. The paper will analyze and compare examples of EWS otla to determine the extent .to which design and functional divrsty pervade this common element. It will examine the extent to which Aranya's otla introduce new ideas, uses, and forms to a traditional element. The paper will also discuss the role of the otla within the context of the larger settlement, particularly the way in which it creates a unique street character for the EWS neighborhoods.

In examining these issues, I will consider Dr. Doshi's Aranya settlement to be an unusual instance of 'designed vernacular'. While his EWS demonstration housing constitutes a fine example of an architect-designed vernacular infused with modernity, the majority of EWS houses were built without the involvement of an architect. Builders constructed them according to resident's needs and the spatial and programmatic restrictions of the site. Because Aranya is a sites-and-services settlement, some amount of freedom was granted to residents within the tight control of its master plan. This freedom, I will argue, manifests itself most intensely within the small space of the otla.

Keywords: *Doshi, Aranya, Otla, Vernacular*

The role of otla in traditional settlements

Madhavi Desai, in her study of the house form of the Islamic Bohra community in Gujarat, states:

> The entrance space as a transitional zone is an important concept in the cultural study of any traditional house form. A transitional space, open or semi-enclosed, is an essential component of the dwelling in the Indian context. It should be viewed in its plurality. At one level, it is an architectural solution to the problem of connecting the dwelling to the street. At another level, it is full of social meanings symbolizing welcome, auspiciousness and status. This necessary in-between realm is also an indirect form of passive control that shapes peoples behaviour on a day to day basis (Desai 2007, 70)

One particular response to this necessity for transition in the Indian context is the otla (also called otta or otlo), an architectural element that occurs in some traditional Gujarati homes. The otla has many variations known by many names in other parts of India, but generally performs the same function: it marks the transition from street to house, usually with a change in elevation, and often with a change in material (see Diagram 1). Architect Mohit Keni describes the otla as....

> differentiated from the street by its elevation and terracotta colour. It is the element of transition between the public (street) and the private (house) domains considered to be profane and sacred, respectively. It is the first point of contact of the house...Visitors are asked to remove their footwear...here before advancing into the interior of the house. It becomes a centre for informal gatherings of small groups adding life to the street (Keni 1994, 33).

Diagram 1: Otla in Jhetnabhai ni pol (Ahmedabad) house (The Vastu Shilpa Foundation for Studies and Research in Environmental Design 1997, 59-62).

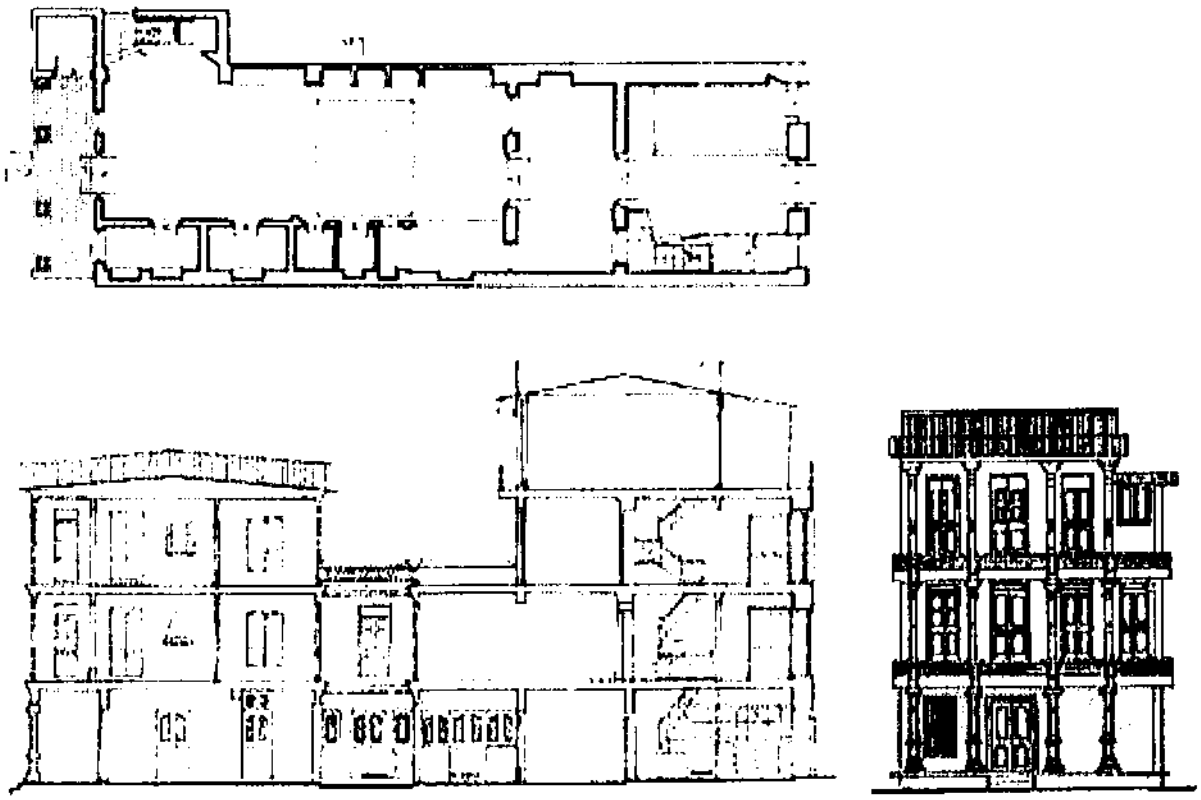


Image 1: A typical otla in an Ahmedabad pol (photo: Vineeta Nair)*

Image 2 : The high otla of the Bohra dwelling (Desai 2007, 44).

In Ahmedabad, Gujarat, otla are a common element in houses located in pols - dense, traditional neighbourhoods consisting of a single, usually dead-end, street and protected by a gate.

The otla serves an important social function in these neighbourhoods. The Vastu Shilpa Foundation for Studies and Research in Environmental Design (VSF) states that the otla "acts as a transitional element where socializing and neighbourly interaction takes place on [a] day-to-day basis across the street (See Image 1). Thus streets are not simply vehicular conduits but are in essence linear open spaces for group activities[1] (The Vastu Shilpa Foundation for Studies and Research in Environmental Design 1997, 27)." Pratima Mehta, who grew up in a pol house in Desai-ni-Pol in Khadia, part of Ahmedabad's walled city, emphasizes this social role of the otla in daily life. In her story booklet "Memories of My Pol in Old Ahmedabad," she states, "Our elder grandmother, Jadavba, used to sit on the otlo in the evening and women from the pol would come to discuss with her their personal and social problems, seeking solutions" (Mehta 2009, 17).

Not all otla, however, served as social meeting places. Madhavi Desai states, in her study of Muslim Bohra dwellings, "Unlike the Hindu otla that becomes a physical extension of the house/street, the otla in Bohra dwellings is seldom used as an activity or interaction space. The relatively higher plinth of the otla not only reveals the residents' social status but also protects their strong notion of privacy that is essential in an Islamic community"[2] (Desai 2007, 73-74) (see Image 2). However, Desai does note the otla's role in conveying social meanings symbolizing welcome, and emphasizes that the otla "remains an aesthetic and symbolic part of the house as far as the social activities of the Bohra families are concerned" (Desai 2007, 70).

Generally, the otla constitutes the space in which residents publicly express cultural values and create a unique identity for their home. As a result, the otla often contains a great deal of

personalization and decoration.

In traditional houses the otla contains a great deal of highly ornate woodcarving (See Image 3).

Madhavi Desai states:

> The main entrance door...forms an important element in the composition of the façade in Islamic (and other) cultures. Intricately carved in wood, one often finds inscriptions from the Quran engraved on its wooden lintel or frame. In traditional Hindu houses of Gujarat the lintel at the entrance has auspicious motifs and a God or a Goddess' image. This wooden lintel is often called Ganeshpatti, after God Ganesh. The symbolic importance of the entrance of the Bohra house is also often emphasized by the construction of a highly decorated doorway (Desai 2007, 74).

The otla serves as an important site for religious activities in Hindu households. According to Desai, "In a Hindu community, the traditional street is a social space and primarily an area of communication and social exchange. It is an extension of the house to be used during different periods of the day and season for various purposes" (Desai, 94). During festivals and weddings, neighbourhood otlas are richly decorated with rangoli (sandpainting) and symbolic decorations, many of which are considered to be auspicious. In Ahmedabad pols, the otla establishes a coherent social character for a neighbourhood and mitigates harsh climactic factors. Kanika Agarwal notes the close relationship between social considerations, climactic considerations and the urban morphology of the pols. He states:

> The character of the pol itself is defined by the transitional spaces called otlas.... Individual houses have a deep plan with the small side facing the street. A pol would get organised generally by people of the same social group or community. Thus the city characteristically grew very organically into a dense built fabric, reflecting not only the culture of the local people but also the climate it was set in (Agarwal 2009, 1).

This dense urban fabric with houses sharing party walls and set on long sections thus developed as a response to social, cultural and climatic factors. The otla establishes a coherent social character for a neighbourhood and mitigates harsh climactic effects. Agrawal later states, "All throughout the year, the 'otla' ...is one of the most comfortable urban areas due to the high degree of shade

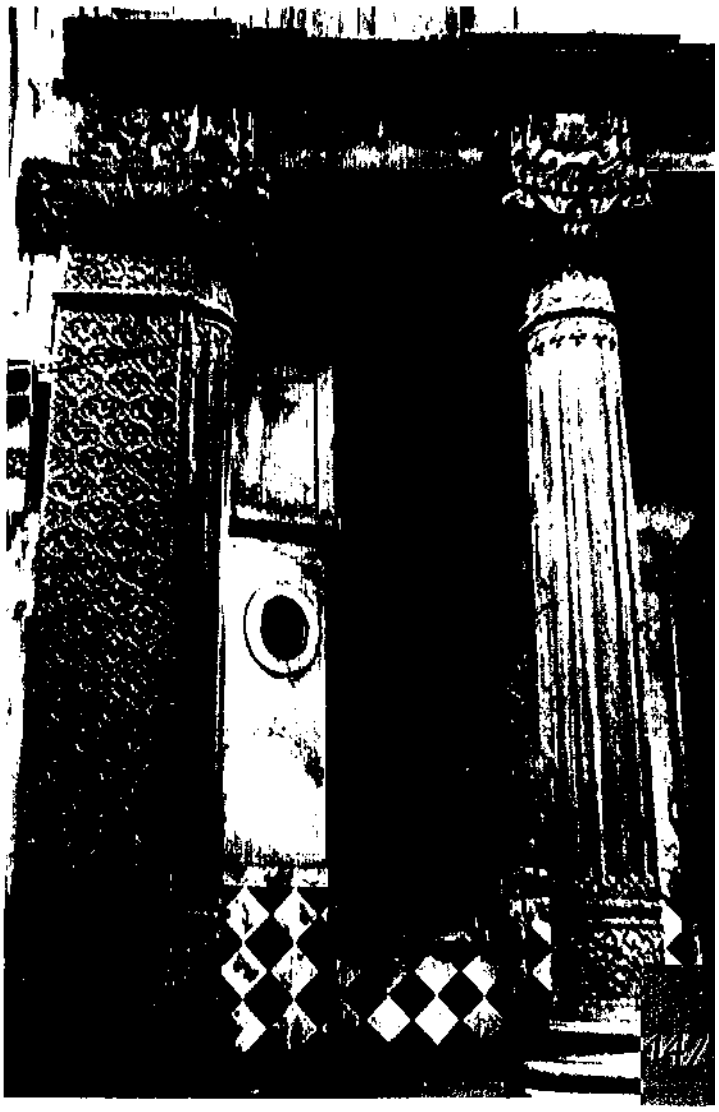


Image 3: Bohra house otla: visual richness as a form of cultural expression (Desai 2007, 44).

Image 4: Women washing clothes on an Ahmedabad pol house otla (photo: Namit Arora).*

on it throughout the day" (Agarwal 2009, 5). Partly because of these climactic considerations, many household activities take place on the otla of an Ahmedabad pol house (see Image 4). The VSF states:

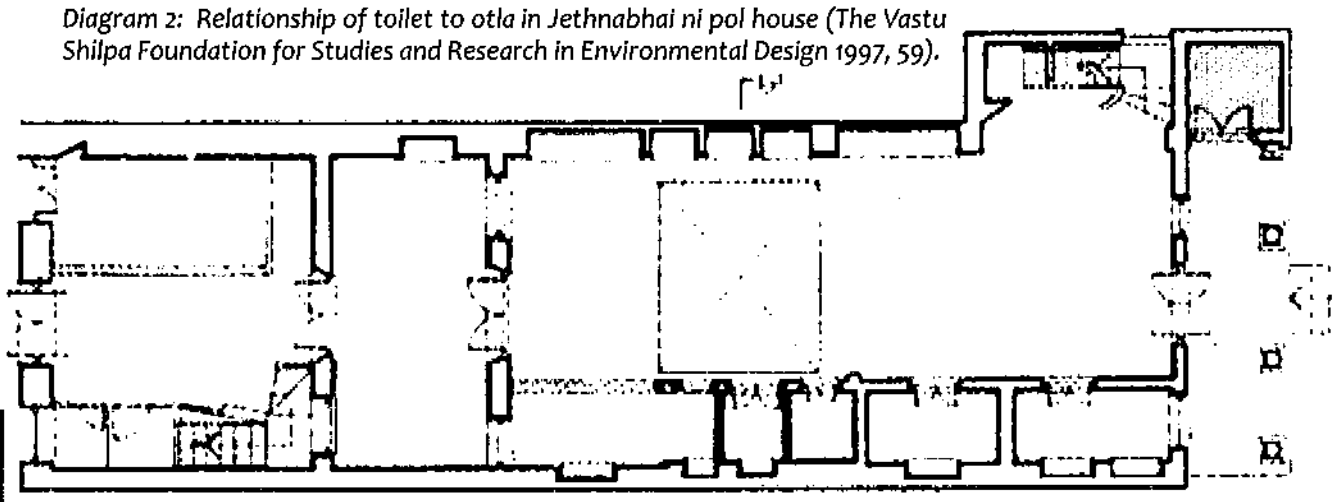
> [The] street comes alive right through the day break with washing, cleaning and water filling activities taking place on the front otta and street edges, where chowkdi (wash places), water taps and drainage connections are provided...Ottas get occupied by women washing clothes and utensils, filling water, while man [sic] brushing teeth, reading newspaper or drinking tea ... Occasionally young children are found playing on otta (The Vastu Shilpa Foundation for Studies and Research in Environmental Design 1997, 19).

In many pol houses the otla also contains, in a separate room and off to one side, the toilet and washing facilities for the house (see Diagram 2).

Aranya background

Aranya (which means 'forest') is a sites-and-services township for 40,000 people in Indore, Madhya Pradesh State. The Indore Development Authority (IDA) developed the settlement, with the World Bank and the Housing and Urban Development Corporation (HUDCO) providing part of the capital for the settlement as a loan. In 1981, the IDA hired the VSF to design the layout and infrastructure of Aranya. Balkrishna Doshi, who heads the VSF and founded it in 1978, worked with Le Corbusier on the master plan for the city of Chandigarh. Dr. Doshi is, therefore, an architect steeped in modern planning principles, but with a very strong interest in

Diagram 2: Relationship of toilet to otla in Jethnabhai ni pol house (The Vastu Shilpa Foundation for Studies and Research in Environmental Design 1997, 59).



traditional Indian architecture and settlements.[3] He established the VSF to initiate "research, studies and investigations relevant to the study and practice of architecture and planning in the Indian context, with a focus on the relationship between tradition, culture and lifestyles of people with architecture and planning" (The Vastu Shilpa Foundation for Studies and Research in Environmental Design 1990, iii-iv).

In a sites-and-services project like Aranya, the bulk of investment is spent on land and infrastructure. While the VSF designed the master plan for the settlement, residents were left to build their own houses incrementally. Aranya is also a mixed-income settlement, although most of the settlement's plots are intended for the Economically Weaker Sector (EWS), or poorest sector, of the population. The 35.32 square meter EWS plots are all serviced to some degree: they contain a core sanitary unit, consisting of a washroom and toilet facilities, and some also contain a plinth and one room (The Vastu Shilpa Foundation for Studies and Research in Environmental Design 1990, 22). To maximize land use and limit incident solar radiation, EWS plots are long and narrow with houses sharing walls and facing North-South (See Diagram 3).

Due to the small size of plots, the VSF created a hierarchy of shared open spaces that ranges from semi-private to public.

The fabric of the EWS neighbourhoods therefore resembles the dense urban fabric of traditional neighbourhoods. Middle Income Group (MIG) and High Income Group (HIG) neighbourhoods[4], however, resemble that of a colonial/modern fabric, with freestanding houses built on large, walled plots and few shared spaces (The Vastu Shilpa Foundation for Studies and Research in Environmental Design 1990, 68). The dense fabric of the EWS neighbourhoods, along with the small, long and narrow plots and the availability of water for a limited time each day, are key contributors to the unique environment created in the EWS neighbourhoods. This, in turn, contributes greatly to the development of traditional elements, such as otlas, in these neighbourhoods.

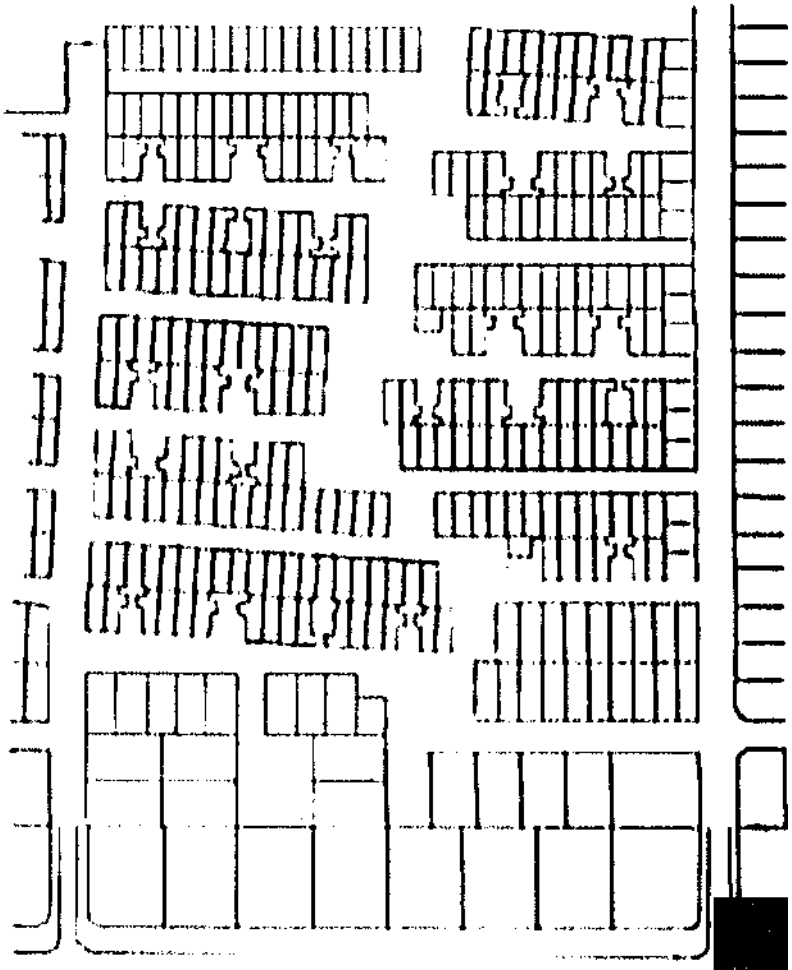


Diagram 3: plan of EWS neighbourhood in Aranya's Sector Four, showing small plot sizes, shared walls and North-South orientation of plots (The Vastu Shilpa Foundation for Studies and Research in Environmental Design 1990, 144).

Design of Aranya settlement

Overall, the design of Aranya might be considered a tightly controlled master plan with a certain amount of freedom built into it. The layout of the settlement, the hierarchy of open spaces and streets, and the services infrastructure are all highly controlled elements of the design.[5] The VSF intended, however, to build a degree of flexibility into the planning of EWS neighbourhoods. It states:

> House extensions not only help to expand a small house, but in the process, they also enhance the quality of public spaces. Such an important, but often neglected, aspect of habitat planning was given due recognition in the Aranya project...Changes in the conventional building and zoning regulations envisaged the creation of a transition zone of 0.5 m width between the street and the house, where people would be allowed to build house extensions. The permissible house extensions were stoops, platforms, porches, balconies and open stairs, which would create interesting street character (The Vastu Shilpa Foundation for Studies and Research in Environmental Design 1990, 66).

In addition to this allowance, the VSF designed eighty demonstration houses (See Image 5) to show "how interesting variations can be created by house extensions, staircases, balconies and projections...[using] interchangeable components which in different combinations would each time create a unique house in the same overall plot dimension and starting with the same basic core" (The Vastu Shilpa Foundation for Studies and Research in Environmental Design 1990, 70). These houses, although intended to be merely exemplary, constitute a designed vernacular unique to Aranya, whereas local builders built the remainder of EWS houses, with strong design input from the residents.[6]

Image 5: Balkrishna Doshi's vision of Aranya demonstration housing streetscape – note the important role that otla play in shaping the street.

Aranya otla design

Otla design in Aranya is greatly varied. [7] Although an otla generally consists of a platform across the entire front of the house, one finds a multitude of variations within this basic form. The depth of the otla often relates inversely to the size of the house: a smaller house will have space for a deep otla in front, and a larger house will have a narrower otla.[8] The otla may be humble or elaborate, it may be a solid block or a thin slab: it may be highly decorated or quite plain (See Image 6). Otla design often depends on the house's location within the larger cluster plan. A house on a corner plot, a plot next to a courtyard, or a plot next to a vacant site may have an otla that wraps around the house (See Diagram 4) and serves as the transitional space for more than one door (See Image 7). Similarly, a house with a vacant site or a courtyard behind it may have a rear otla serving as a transitional space for a rear door (See Diagram 5 & Image 8).

As the otla generally creates a transition from public space to private space, it is important to consider how variations in otla design affect this transition in EWS houses. A gated or fenced otla creates a greater degree of privacy than one without a distinct threshold, although the level of privacy attained depends on the height, solidity and thickness of the threshold (See Image 9). Similarly, a higher otla separates itself more profoundly from the streetspace, and therefore becomes more

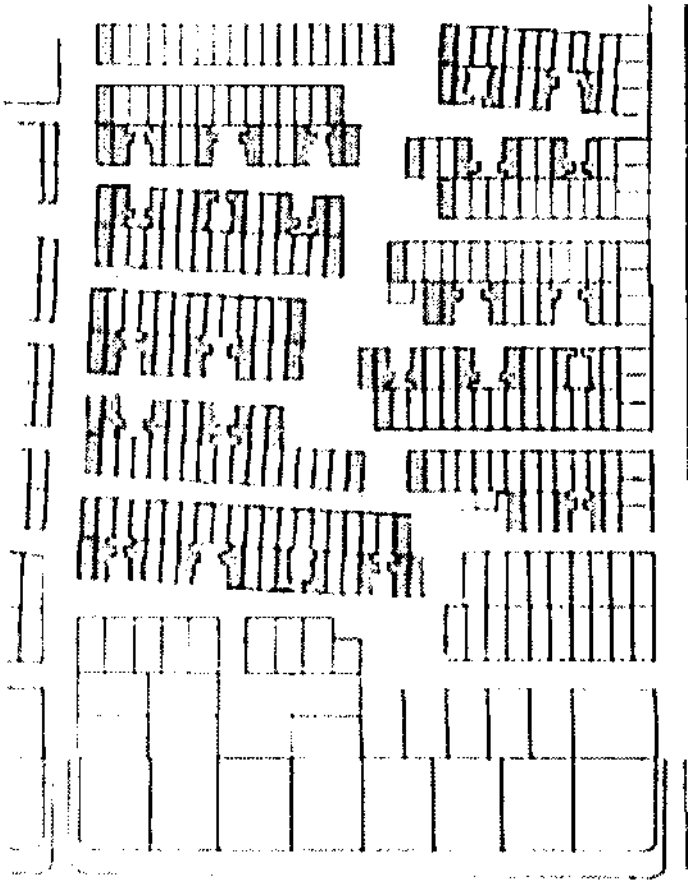
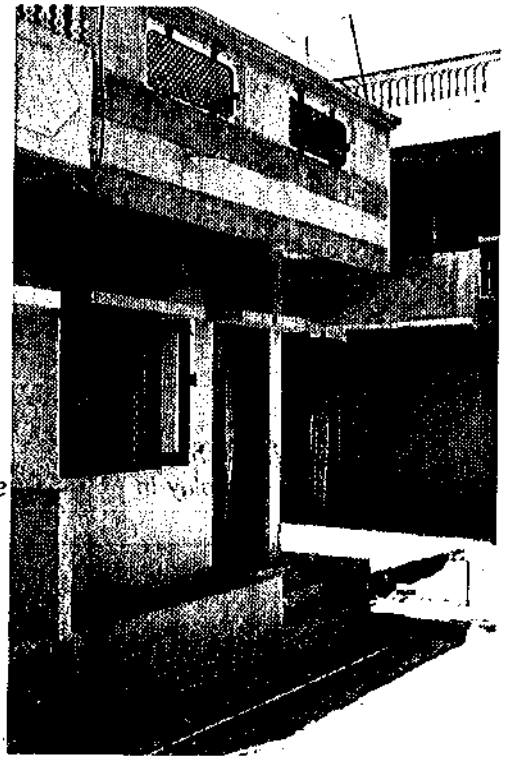


Diagram 4: EWS houses with potential for wraparound otla.



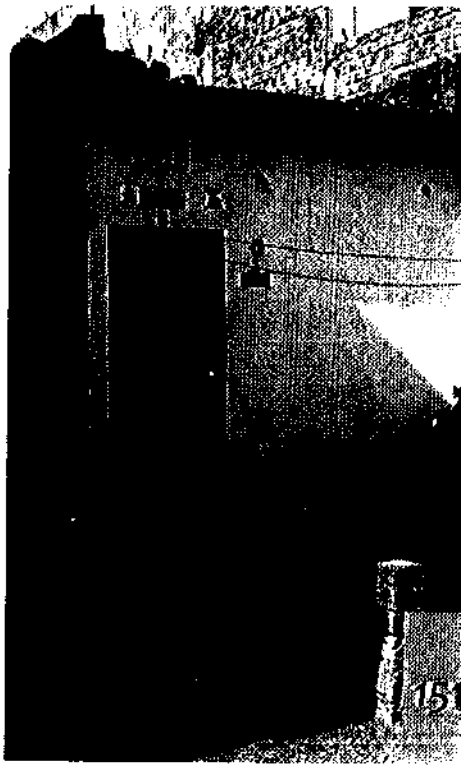


Image 6: A narrow otla (left), a large otla in front of a small house (right).

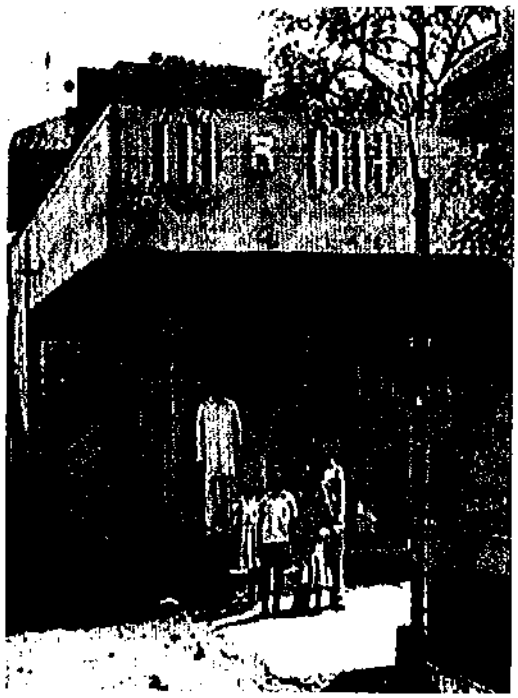
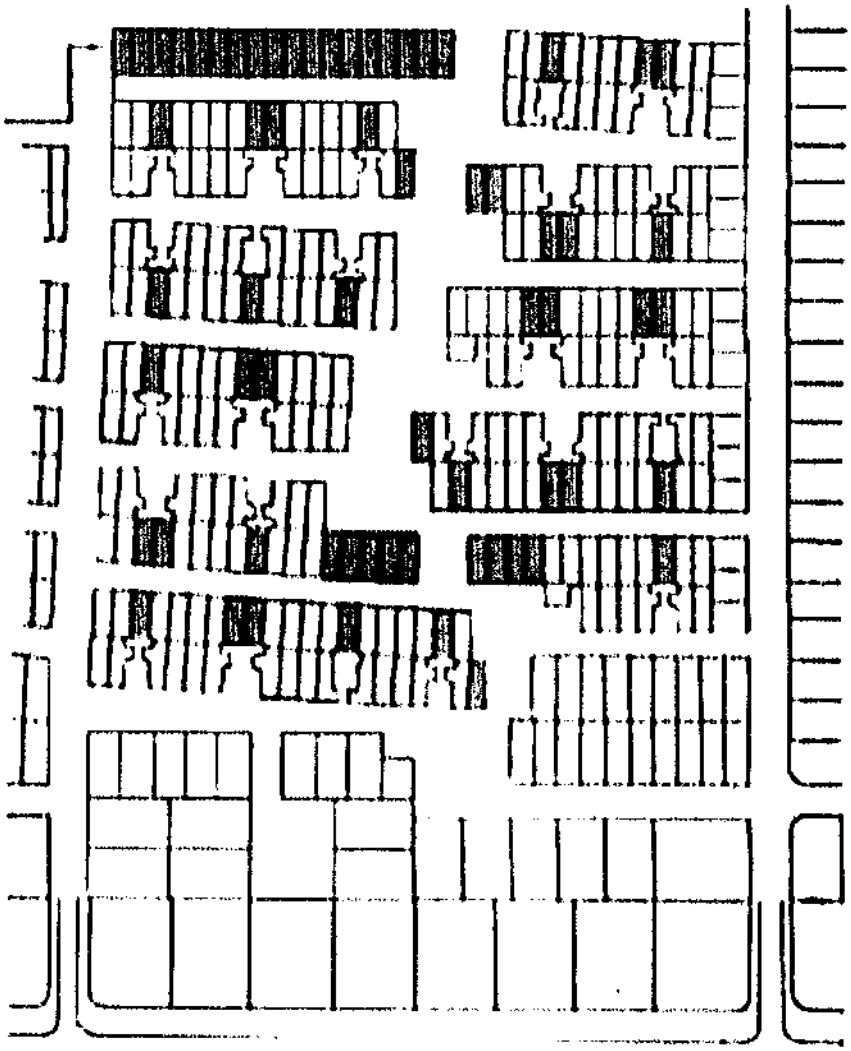


Image 7: Wraparound otla on courtyard house (left) and on corner house (right).

Image 8: Rear otla on EWS houses.

Diagram 5: Plots with potential for front and rear otla.



strongly associated with the private space of the house. A deep otla extends the transition from street to interior of the house, making the transition more gradual. Variations in a single otla may create a hierarchy of transitions for a single house. In one example (see Image 10), a courtyard house's side otla is lower than the front otla. This connects the interior of the house more strongly to the courtyard than to the street. Façade treatment reinforces this hierarchy: painted detail on the front of the house establishes a formal identity for the house, while the side façade remains undecorated and informal.

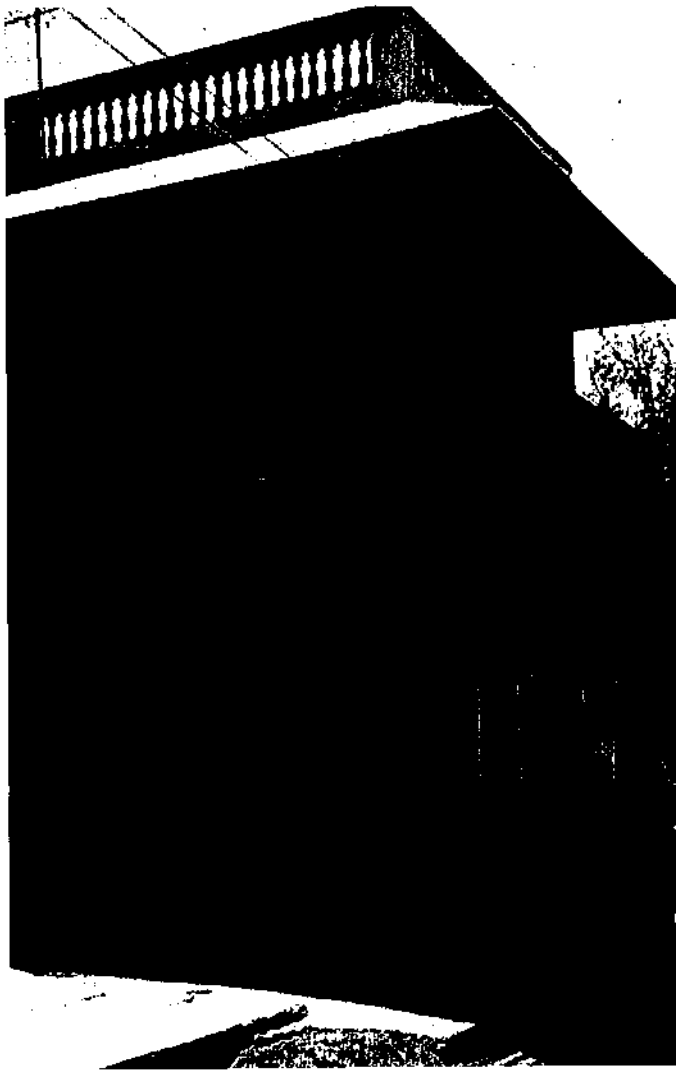
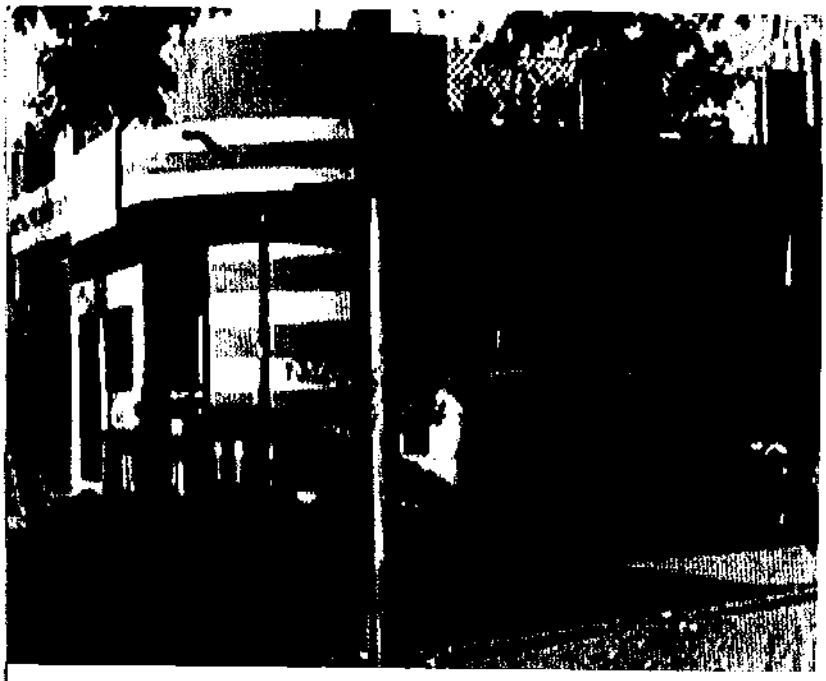


Image 10: The otla may create a hierarchy of transitions for a single house.

Functional role of Aranya's EWS otla

In discussing the function of the EWS otla, one may make a basic distinction between the residential otla and the commercial otla. Because most businesses in EWS neighbourhoods are located within houses, a single otla may serve a dual function. The distinction between residential otla and commercial otla may be established explicitly or subtly, and may be reinforced with a painted façade or a sign (see Image 11). Often, business-related goods stored on the otla signify the presence of commercial

Image 9: Enclosed otla with thin wire fence (left) and with solid wall (right).



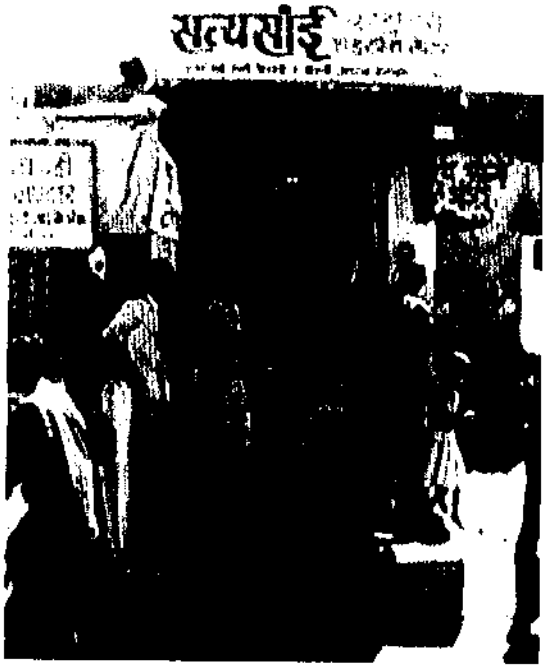
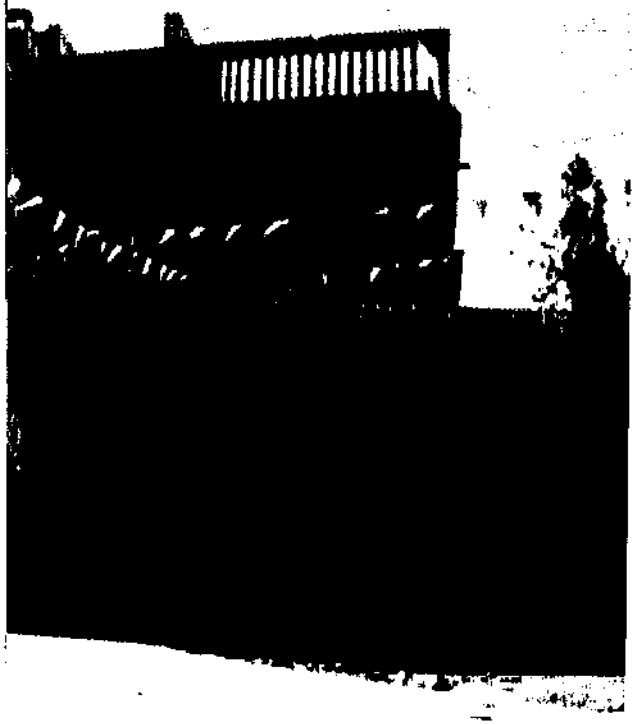


Image 11: Otla with no distinction between commercial/residential space (left) & with wall between commercial/residential space (right).



activity (See Image 12). While the residential otla creates a transition from public space to private space, the commercial otla serves primarily as a public space of service. By standing on a commercial otla, a person states his intention to purchase something or make use of services offered.

The Aranya otla also supports various daily household activities. In EWS neighbourhoods, taps in the street provide water for one hour in the morning and one hour in the evening. Prior to this time, residents line up buckets on otlas in preparation for water collection, and run hoses from street taps through doors in the otlas to underground water reservoirs (See Image 13). During water collection, the otla becomes a space of lively social interaction, with neighbours chatting to each other and mobile vendors selling everything from vegetables to jewellery. Shortly after water collection, women may be seen washing clothes, dishes and, sometimes, children on the otla (See Image 14).

Image 12: Goods stored on otla signify location and type of commercial activity, and, in photo on right, distinguish between residential and commercial use of otla.

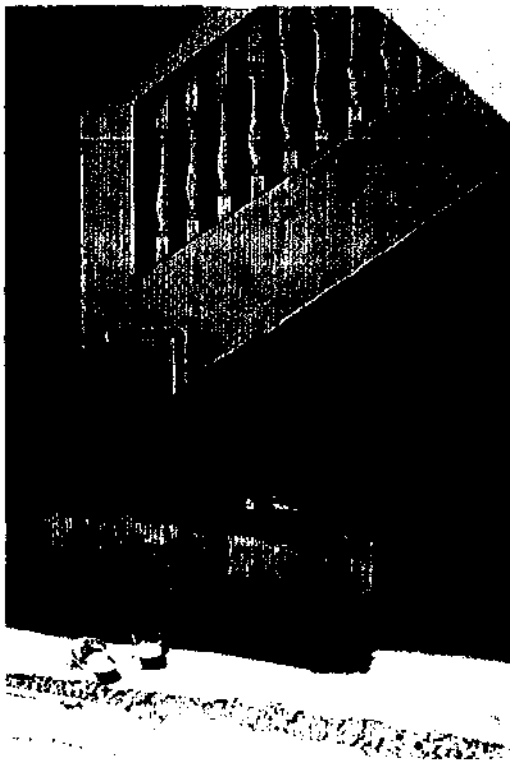


Image 13: Water buckets stored on otla for water collection (left), water reservoir located in otla (right)

Otla are also used for storing family possessions. Otla steps often contain small ramps for wheeling bikes, mopeds and motorcycles onto the otla or into the house. Households with electric water coolers (a form of air-conditioning for the house) often locate these large appliances on the otla (See Image 15). Other household items that may occupy the space of the otla include drying laundry, shoes, beds, sewing machines, bird cages, television antennae and satellite dishes (See Image 16). Household or income-generating activities performed on the otla include purchasing food purchase from mobile vendors, preparing food, studying, reading, playing, sewing and even blacksmithing. Finally, utilizing the otla space to accommodate a staircase to the first floor constitutes an effective strategy for conserving space within the small EWS house (See Image 17).

Image 14: Woman washing a small child on the otla (left), streets become active at water collection times, with neighbours chatting on otlas and mobile vendors selling their wares (right).

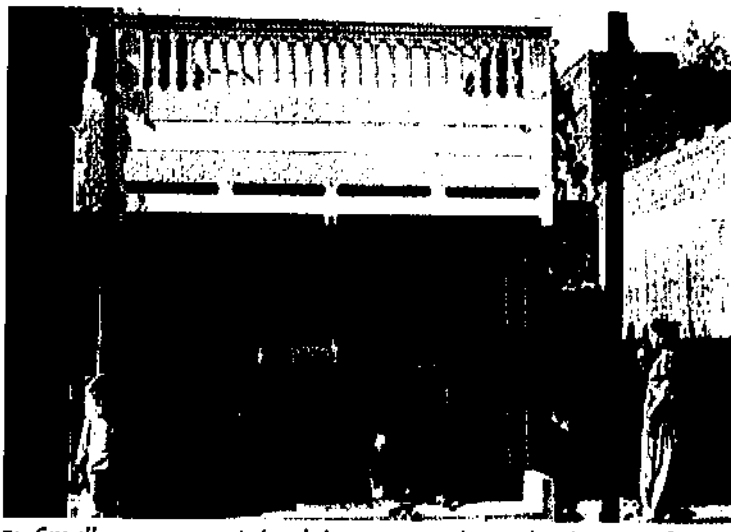
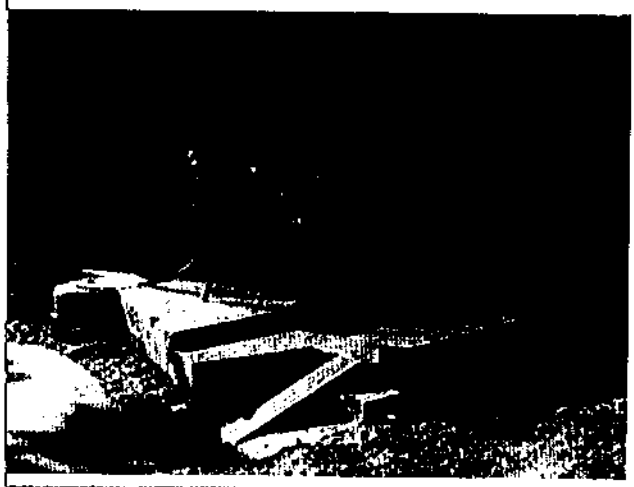


Image 15: Small ramps contained in many otla make it easy for two-wheelers to be stored on the otla or inside the house (left), water cooler stored on otla (right).



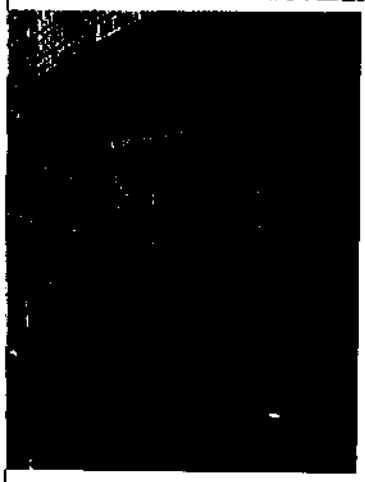


Image 16: Storage of bikes (left) and a small bed (right) on EWS otlas.

Social/cultural role of Aranya's EWS otla

The otla play an important role in a neighbourhood's social activities. As mentioned earlier, otla become highly social spaces at times of water collection. During the day, women chat on the otla while keeping an eye on children playing in the street. At times of festivals or other celebrations, an overhead canopy unifies the street and its otla, turning both into a large outdoor room in which activities take place. Similarly, when itinerant performers visit an EWS neighbourhood, residents (especially women) watch the show from the otla (See Image 18). In Hindu households, the otla may serve as an important site for religious functions.[8] During Diwali, the otla is decorated with rangoli (sand paintings) to welcome Laxmi, the Goddess of wealth, into the home, and to symbolize warm hospitality to visitors who come to exchange greetings and sweets. Just as a Ganeshpatti would be carved into the lintel of

Image 17: Location of stairs within the space of the otla conserves space inside the small EWS house (left), a blacksmith and his wife demonstrate how they use the otla as a workspace (right).

Image 18: Residents watch itinerant performers from an otla (left), a street and its adjoining otlas are turned into an outdoor room in preparation for wedding festivities (right).

a traditional house, in Aranya they often take the form of tiles and statues embedded in the plaster above the door (See Image 19). Similarly, an image of Christ or a cross may hang above the door of a Christian household. Other doorway decorations include the toran or the bandhandwar, a garland that hangs in the doorway and conveys auspiciousness, happiness and welcome. Painted handprints next to the door are also considered auspicious. Many EWS otlas contain a tulsi, or holy basil, plant, which is sacred to Hindus and used in Ayurveda for its medicinal properties (See Image 20). Otla are also used for feeding

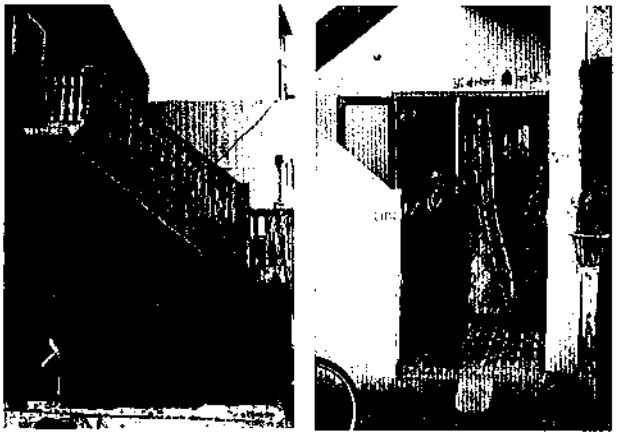


Image 19: A ganeshpatti consisting of a single tile and painting – note tulsi plant on adjoining otla wall (left), and one consisting of a small statue, three tiles and a painting (right).

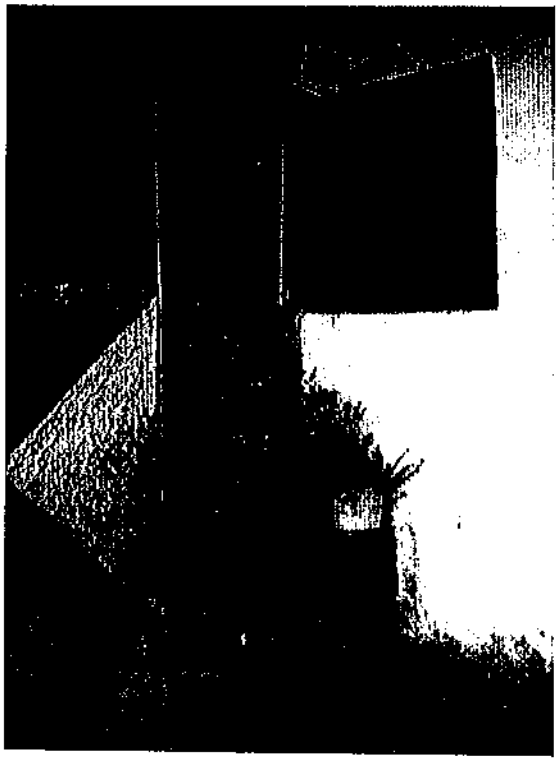


Image 20: Tulsi plants growing in special planters built into otlas.

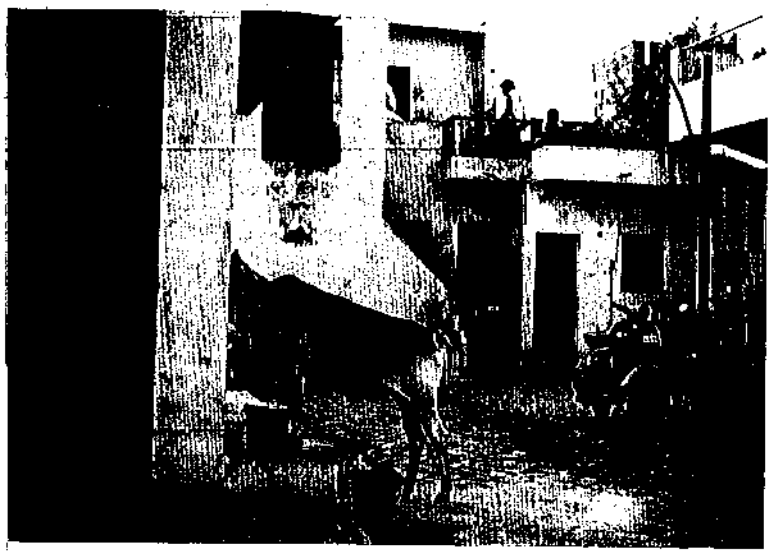


Image 21: A cow makes use of a demonstration house otla to request his dinner.

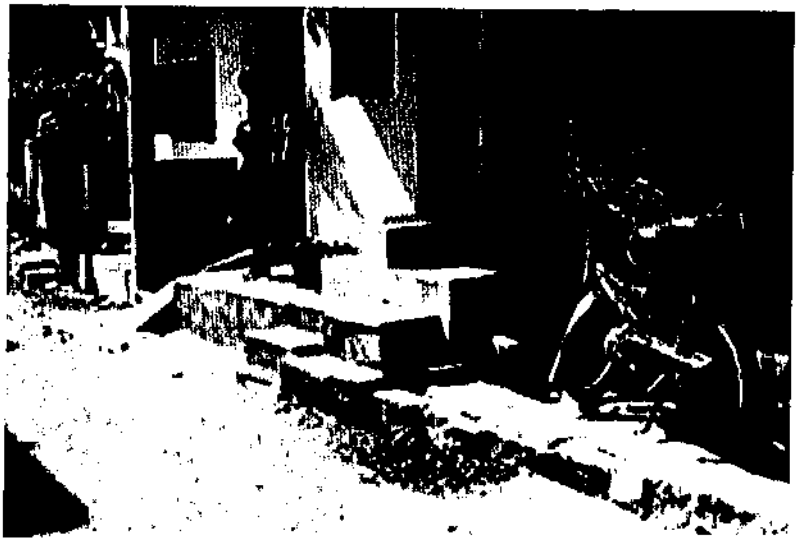
sacred cows that live in the streets and are looked after by residents of a neighbourhood (see Image 21). Finally, otlas often contain shrines. Some of these are very small, simple and personal, while others are quite large, colourful and elaborate and may be used by an entire neighbourhood (see Image 22).

Image 22 – Two examples of temples contained within the space of the otla. Note the tulsi plant in front of the temple and the handprints painted next to roller door in image on right.

Symbolic/identity role of Aranya's EWS otla

The otla in Aranya's EWS neighbourhoods play an important role in creating for each house, and for each street, an individual identity. This is achieved through distinctions in otla form, and through variations in the colour, detailing and decoration of the otla. Variations in otla form from one house to the next combine to create quite sculptural street edges in many EWS neighbourhoods. This is especially true when

Image 23: Variations in otla stairs create visual interest along EWS streets.



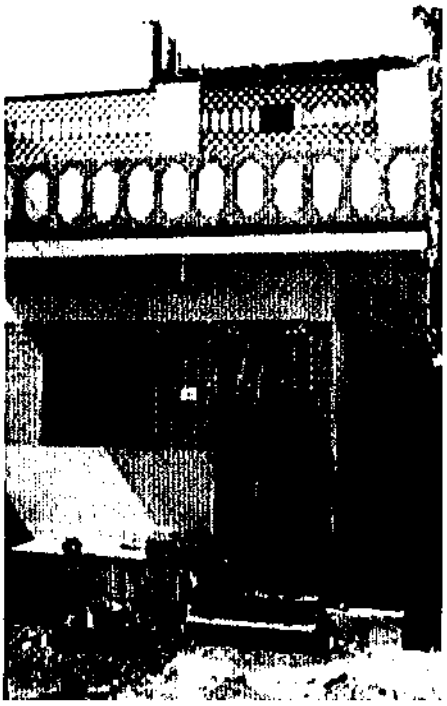


Image 24: The use of colour on the otla, whether painted and bold (left), or subtle and achieved with a variety of materials (right), helps to build a unique identity for the house and the street.

subtle shifts in otla stair heights occur in adjacent houses (See Image 23). The use of colour, whether applied directly to the otla, or whether resulting from some combination of materials, also strengthens the unique identity of an individual house, as do the patterns found on otla tiles and door curtains (See Image 24).

More generally, however, the otla's role as a functional, social and symbolic space also makes it a visually fascinating space. Each otla's combination of stairs and ramps, stored bikes and buckets, water reservoir doors, water coolers, drying laundry, chatting neighbours, tulsi plants and shrines, allows it to communicate something about the people who live in each house, and, in a broader sense, the culture in which they live (See Image 25 & 26). Even the simplest otla will communicate something.

One may conclude that the EWS otla in Aranya greatly contributes to the spatial quality of EWS streets in terms of visual interest, functionality, social liveliness and cultural relevance (See Image 27). In order to further emphasize this point, one may compare an EWS street to a street in the low-income housing community just to the Northwest of Aranya (See Diagram 6). A simple visual comparison reveals the unique character of EWS streets. In the neighbouring low-income housing settlement, in which the Indore

Image 26 – Variations in colour, detail and use establish a unique identity for each EWS house.

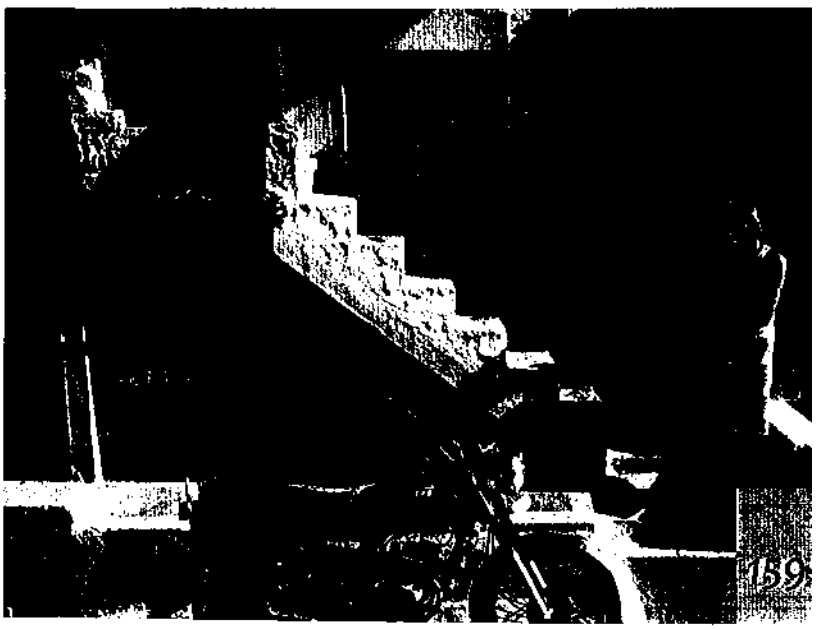


Image 25: The otla's colour, detail, decoration, form and use communicate something about the inhabitants.

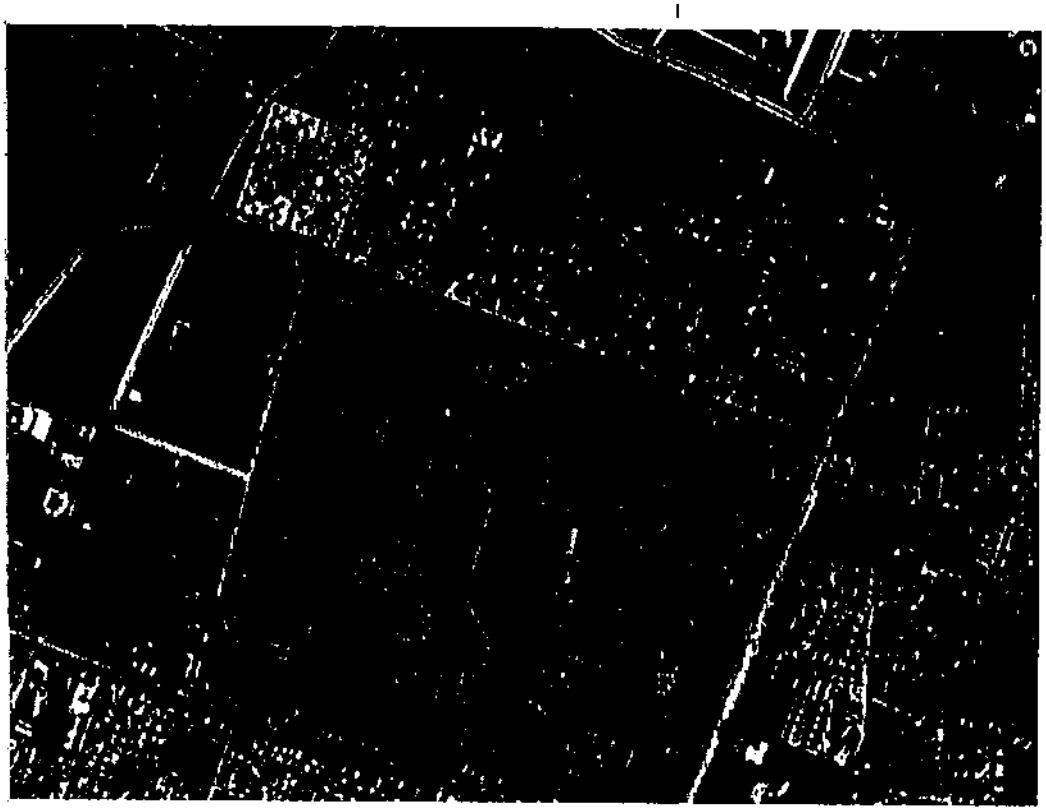


Diagram 6: Satellite image showing location of Aranya settlement (pink) in relation to the IDA's neighbouring low-income settlement (yellow). Image: Google Earth (highlighting by the author).

Image 27: An Aranya EWS streetscape: dwelling units are separated from the street by the transitional space of the otla, variations in otla create visual interest and identity, and the street becomes a space of interaction.

Development Authority (IDA) designed and built multi-unit dwellings, no transitional space was provided at the street level, and entrances to individual units are separated from the street by a layer of internal circulation. High blank walls line a street that lacks colour and detail, and serves primarily as a vehicular and pedestrian route (See Image 28).

Conclusion – the Aranya otla as a hybrid vernacular element

"The vernacular design process is one of typological models and of modifications and variations therein, where the individual unit and not the house type is adjusted, adapted or personalized. The vernacular urbanity has an underlying structure within its overall organic

Image 28: In the low-income housing project to the Northwest of Aranya, stairwells serve as a transition only from public to semi-public space, and therefore provide little opportunity for personalisation, decoration, or usefulness in terms of daily activities.

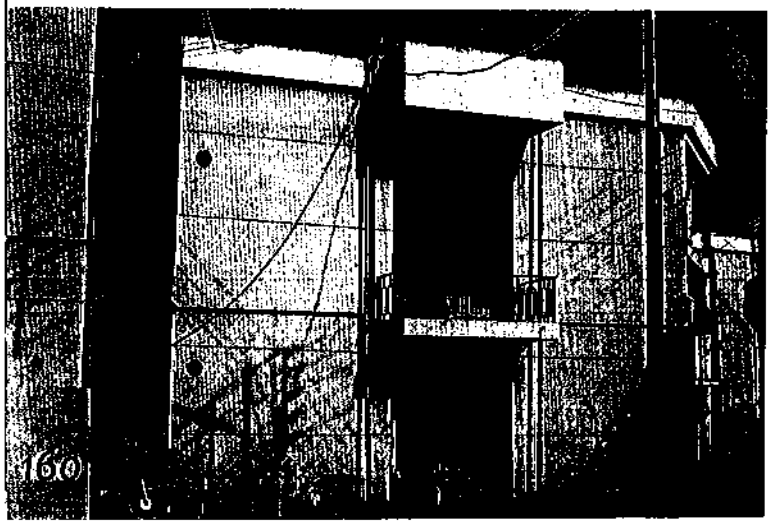
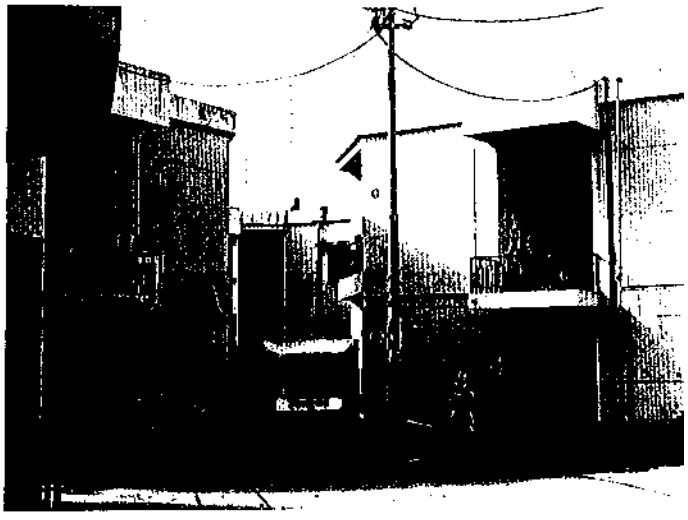


Image 28: Blank walls define the public space of the street, which serves primarily as a conduit for vehicular circulation. Private balconies afford little opportunity for interaction with neighbours.



attitude that leaves room for human expression and creativity" (Desai 2007, 103). This quote from Madhavi Desai sheds an interesting light on Aranya's EWS neighbourhoods, which are unique in that their underlying order, rather than having developed organically over a long period of time, is imposed by the author(s) of the master plan. Yet, Aranya's master plan, for all of the control it imposes, also grants a certain amount of freedom –the freedom for residents to build as they see fit, and the 0.5 metre 'free space' at the front of each house, which encouraged adaptation and variation. This small space serves as the site in which the social and cultural forces that shape traditional architecture could exert themselves on an otherwise highly planned settlement. As such, the EWS otla in Aranya constitute a unique hybrid vernacular element, and serve as evidence that 'human expression and creativity' will take root in even the smallest of spaces.

Endnotes

[1] Jethnabhai ni pol, according to the Vastu Shilpa Foundation Study, is 94.7% Hindu, 4% Jain, and 1.3% Christian (The Vastu Shilpa Foundation for Studies and Research in Environmental Design 1997, 3).

[2] Typically Bohra houses were 6-7 feet above the level of the street. Compare Diagrams 1 & 2, and Images 1 & 2, for otla heights in Hindu & Bohra houses, respectively.

[3] In 1987 Doshi wrote, "I learned from Le Corbusier to observe and react to climate, to tradition, to function, to structure, to economy, and to the landscape. To an extent, I also understand how to build buildings and create spaces and forms. However, I have in the last two decades, gradually discovered that the buildings that I have designed seem somewhat foreign and out of milieu; they do not appear to have their roots in the soil. With the experience of my work over the years and my own observation, I am trying to understand a little about my people, their traditions, and social customs, and their philosophy of life" (Archnet 2010).

[4] Lower Income Group (LIG) plots range from approximately 56-92 square meters, the Middle Income Group (MIG) plots range from 139-223 square meters, and High Income Group (HIG) plots range from 139-474 square meters (The Vastu Shilpa Foundation for Studies and Research in Environmental Design 1990, 68).

[5] Doshi's list of drawings prepared for the project reveals the high level of planning involved in the design of Aranya: "Numerous drawings were prepared for the project. They included master plan, detail layout of each sector, all demonstration housing, public buildings, landscaping and infrastructures. They included miscellaneous drawings regarding details of landscape, stone paving on streets, etc. (The Vastu Shilpa Foundation for Studies and Research in Environmental Design 1990, 143)

[6] Cynthia Davidson notes: "The 80 houses designed by Doshi and the streets that define those houses are noteworthy. The remaining plots have been developed by their owners, built and embellished in a personal manner that does not follow Doshi's models" (Davidson 1995, 70). It is interesting to note that otla in the demonstration houses are often deeper than those in the self-built houses. Also, they tend to be more private: many of them are partially walled off to create outdoor rooms. This may have something to do with the fact that the VSF originally envisaged EWS houses to have internal courtyards, like many traditional (including pol) houses do. In my documentation of Aranya, I found only a few EWS houses with internal courtyards in the 44 that I documented and approximately 20 that I visited informally. Many residents said they did not feel there was adequate space within their home for an internal courtyard.

[7] Most of the information I present below with respect to Aranya comes from my personal observation and documentation. In 2003-2004 I spent nine months in India documenting Aranya on a Fulbright Grant. During that time, I completed a comprehensive survey of the entire settlement and documented, in plan, a cluster of forty-four houses. Although I came to know many of the residents well during this time, and although I had the services of a translator (Hindi & Marathi) for one week, my investigation was limited by my general inability to communicate. As a result, my focus in this paper is on elements of design that could be documented and aspects of life in EWS neighbourhoods that were directly observable.

[8] Due to the placement of the core sanitary units at the rear of the EWS plots, almost all houses that are built incrementally are built from the back of the plot to the front. A small house will therefore have a large open space at the front of the plot.

Bibliography

Agarwal, Kanika. "Residential Cluster, Ahmedabad: Housing Based on the Traditional Pols." PLEA2009 - Architecture, Energy and the Occupants Perspective. Quebec: PLEA, 2009. 1-6.

Archnet. Archnet: Digital Library: Balkrishna Vithaldas Doshi. 4 23, 2010. http://archnet.org/library/parties/one-party.jsp?party_id=12 (accessed 4 23, 2010).

Davidson, Cynthia C. "Aranya Community Housing." In Architecture Beyond Architecture, by Ismail Serageldin Cynthia C. Davidson, 64-71. London: Academy Editions, 1995.

Desai, Madhavi. Traditional Architecture: House Form of the Islamic Community of Bohras in Gujarat. Hyderabad: National Institute of Advanced Studies in Architecture?, 2007.

Keni, Mohit. A Study of the House Form of the Temple Town of Nathdwara. Thesis, School of Architecture, Centre for Environmental Planning & Technology (CEPT), Ahmedabad: Centre for Environmental Planning and Technology, 1994.

Mehta, Pratima. "Scribd: Pol Ahmedabad Book: Memories of My Pol in Old Ahmedabad." Scribd. April 18, 2009. http://www.scribd.com/Pol-Ahmedabad-Book/d/14365907 (accessed April 23, 2010).

The Vastu Shilpa Foundation for Studies and Research in Environmental Design. Aranya: An Approach to Settlement Design. Ahmedabad: The Vastu Shilpa Foundation for Studies and Research in Environmental Design, 1990.

The Vastu Shilpa Foundation for Studies and Research in Environmental Design. Jethabhai Ni Pol-Khadia, Ahmedabad: A Documentation of the Living Environments. Research, Ahmedabad: The Vastu Shilpa Foundation for Studies and Research in Environmental Design, 1997.

The Vastu-Shilpa Foundation for Studies and Research in Environmental Design. The Ahmedabad Chronicle: Imprints of a Millennium. Ahmedabad: The Vastu-Shilpa Foundation for Studies and Research in Environmental Design , 2002.

WEAVING ARCHITECTURE: A STUDY OF WOMEN'S ROLE IN THE VERNACULAR ARCHITECTURE

Anna Christina Ealdama, Kristine Ann A. Muñoz, Michelle P. Pernia

Abstract

The aspect of gender in the study and analysis of vernacular architecture has often been overlooked for more popular categories such as methods of construction, motifs and ornamentation. But gender being in itself a social and cultural construct, becomes an essential, even basic notion to which architecture should be studied. It provides yet another contextual framework that will bring understanding to the socio-cultural dynamics and the power relations that inform architecture as a whole.

The study is focused on the weaving communities of the Northern Cordillera tribes of the Philippines as case studies, as it primarily establishes women's status, their economic and cultural role in these indigenous societies. As weaving is an activity closely associated with women, the paper attempts to shed light on the correlation between gender roles and the spatial organization within the domestic setting, and the extent of women's participation and involvement in the decision-making process of building the home and ultimately the community.

A survey among the households in the Cordillera shows how interior spaces in indigenous houses and community spaces in traditional settlements reflect how gender has become a factor in the appropriation of both private and public spaces.

Introduction

While it is commonly agreed that architecture is a product of society, implications of that have always been taken for granted. More often, architecture and produced space are seen as empty and neutral backgrounds, performing the basic requisites of form and function. Space, however, is neither simply the sum of its three-dimensional parts, or as disengaged as usually perceived. Within its boundaries and planes are contained the complexities of the society that which produces it. It is, by and large, one of the more tangible elaborations of a culture to which it can hold up to itself as a mirror to reflect its values and priorities—the nexus between the abstract and the material world.

At the same time, architecture is also the very locale, the "theatre of action" where society plays out its organization and customs, and where beliefs and taboos are enacted or prohibited[I]. Lefebvre, in his seminal work, has as so much described it as one of society's instruments by which it can moderate and influence both thought and action, and thereby, a means of control[II]. Yet, even as space conveys a message, it also sets the parameters for its own use and practice.

This is the dynamic inherent in produced space exists wherein there is a constant shifting between being the signified and the signifier. Space inasmuch as it is influenced and affected by its users and inhabitants, is equally affective, and influences behavior. It does so, however, in no overt fashion. Often, the message is hidden in the very forms that make up its boundaries, transforming the space into a symbolic and fetishized representation, expressing abstractions such as the relations of production and reproduction. Lefebvre notes that this, in effect illustrates the dualistic nature of produced space—that is both to display and displace—the former serving to maintain social cohesion and identity; while the latter, effectively concealing them[III].

The symbolic transmutation of a culture's reproductive relations by way of creating sexual representations that of the male and female[IV] constitutes a society's concept of gender and invariably, establishes a specific ideology and codifies the practices allowed within the space.

Modern architecture, for one, has been readily accused of putting at a premium a patriarchal ideology—from form to practice, it reflects a phallocentric ideal and institutes masculine hegemony. Even the usage of surface ornamentation, previously thought of as a matter reflective of taste and social class, is nevertheless gendered and carries strong associations with the female. They are attractive but intellectually undemanding—incidental additions and afterthoughts to bare structures and buildings—very much what is believed women are to men. The lack of it, as many modernist architects have put forth, alludes to integrity, honesty, and permanence—the very traits attributed to men[V].

The masculinization of architecture, such as seen in modern society, extends beyond the usage of lines and geometry, material selection, ornamentation or the lack thereof. They are corollaries to culturally prescribed and accepted masculine (or feminine) attributes. Architecture, for all intents and purposes, is the site of a discourse on gender, politics and power.

Gender and Vernacular Architecture

Traditional cultures, however, is far from removed from all these. In fact, the concept of gender and gender relations is putatively more ingrained in the construction and design of traditional architecture. Because it is not rooted in any formal theory of design, traditional or folk architecture relies on intuition, common sense, worldview and communal memory just as heavily as it does on practical considerations such as use and function, climate and topography, technology and available building materials to shape the built environment[VI]. Gender becomes more than an abstract concept or a matter of differentiation between the sexes. It becomes an ordering principle[VII].

In certain societies, direction and orientation are even equated to gender as a way to create social mapping and recreate the dichotomies present in nature. In 1909, Robert Hertz in his book, "The Pre-eminence of the Right Hand", wrote:

> Society and the whole universe has a side which is sacred, noble and precious, and another which is profane and common; a male side, strong and active, and another, female, weak and passive; or in two words, a right side and a left side... [VIII]

This type of mapping has led to the consequent appropriation and relegation of spaces within the domestic and private spheres that are gender-specific, finding justification on arbitrarily pegged, yet culturally pervasive beliefs on gender roles. Victorian literature on housing and design gives a clear example of this: drawing rooms were closely associated with the feminine domain, while the dining room, whose décor was more august and dignified was decidedly male[IX]. Similarly, in traditional Arab homes, spaces take on far stricter zoning measures. In a study on Muslim Middle Eastern and North African homes, the concept of "seclusion and segregation" is used to identify the female sphere versus that of the male. Cultural prohibitions and constraints promote this type of zoning to great effect through the use of both mental and physical barriers[X]. The extent of how society ultimately appropriates spaces based on gender is in no way limited within the private realm. Although distinct from the public sphere, appropriation of spaces within the private sphere will have corresponding repercussions outside it. Women are equated with the home, domesticity and the private sphere just as men are equated with the workplace and the public sphere. Moreover, the roles of men and women in actual design and building of homes within the context of vernacular tradition are defined and demarcated. Although variable from one society to the next, what is not is how each of the sexes' involvement and decision-making power in building and construction will find a way into spatial expression and affect the "domestic routines of living"[XI]. Seeing how gender is inextricably embedded in the study of space and architecture, this paper aims to examine how gender relations have shaped the architecture of the Cordilleras and how it informs its socio-spatial use. More than that, the study further ties in women's roles as weavers and homemakers, and explores how their cultural and economic roles and status influence the extent of involvement in the decision-making process of home building and ultimately, the community.

Weaving, Gender Roles and the Ifugao

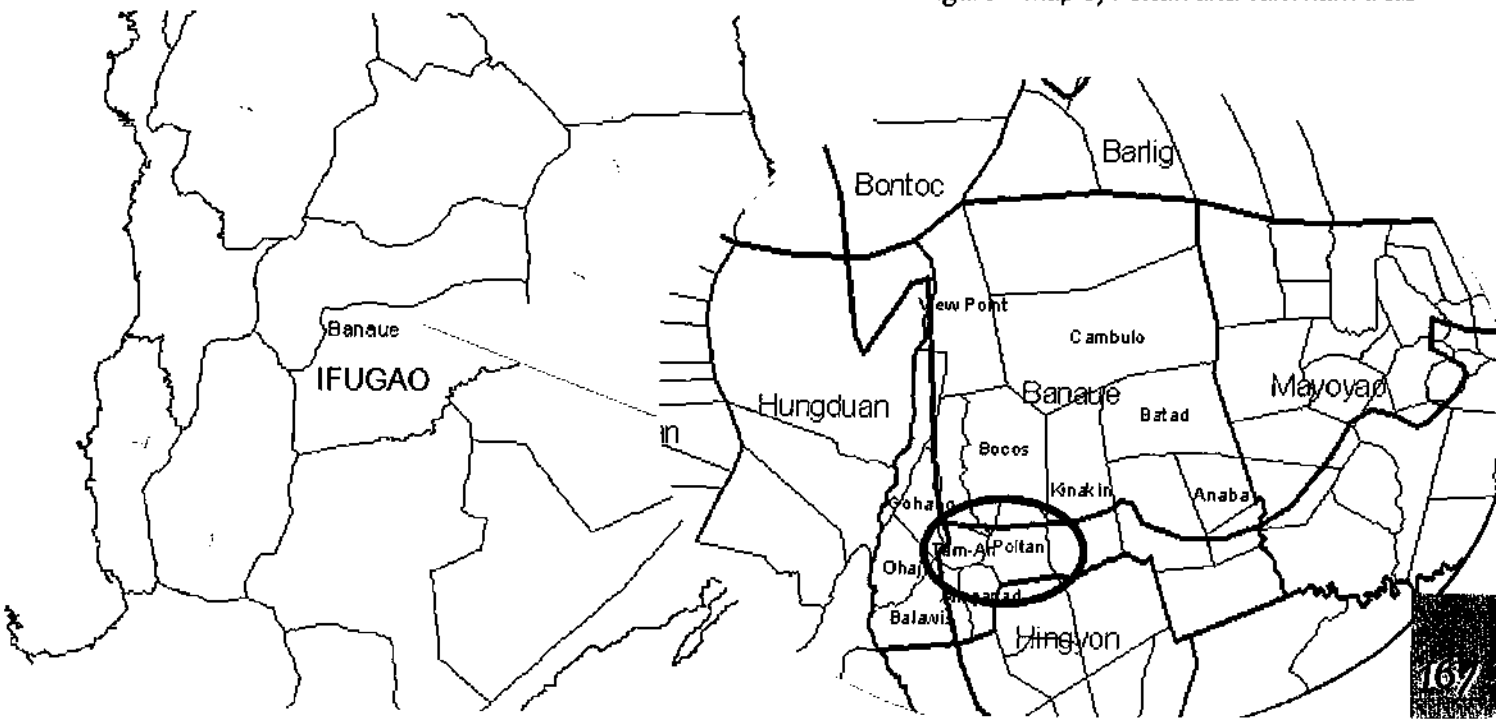
The study focuses on the Ifugao, one of eleven indigenous communities living high in the Gran Cordillera Mountains, in the Northern Philippines. We visited traditional settlements in the Poitan and Tam-nan areas within the municipality of Banaue (See Figure 1). Many of the points discussed and articulated in this article are derived insights from our observations of physical and environmental situations of surviving traditional architecture and settlement in the areas as well as from interviews of users and inhabitants. The study takes on a qualitative and descriptive approach integrating ethnographic data with the spatial analysis.

The Ifugao, like many of the Cordillera settlers generally live off the land, subsisting on agriculture, mainly wet-rice cultivation and at certain times of the year by swidden farming of various vegetable and root crops[XII]. Secondary to agriculture, the raising of livestock and poultry is also undertaken, mostly by women, and both sexes engage in artisanal industries. Certain distinctions are drawn, however. Men are usually associated with woodcarving and sometimes, of weaving utilitarian baskets. Women, on the other hand, are solely responsible for fabric production.

Ifugao fabrics, which are sold in the lowlands and to local and regional tourists, complement agricultural activities and augment to the family income. But there is more to Ifugao fabric production than economics, as there is a strong cultural component that goes along with it.

Why weaving has been relegated as women's labor has been linked to representations of women's fertility and life-giving power, with the process even likened to that of birthing[XIII]. This further validates anthropological studies made linking Ifugao women, rice cultivation, fertility and textiles. For the Ifugao, the weaving process is even deified, with certain deities associated with different aspects of fabric production. Moreover, textiles are seen as prized commodity among the community folk of the Ifugao and are commonly used in ceremonial exchanges[XIV].

Figure 1: Map of Poitan and Tam-nan Areas



As a task overseen by women, the tradition of weaving has been carried and passed on to generations of Ifugao women, and are usually performed in their respective households. Even then, weaving as a home industry has slowly changed over the years, and communities have begun to build weaving cooperatives to enable women weavers to better pool resources and income.

Weaving also brings an altogether different social aspect to women: it facilitates social mobility, as it allows women to move through different spheres of activity that are easily afforded to Ifugao men[XV].

There is a consensus among studies made, and even in the households we surveyed that the Ifugao are largely an egalitarian society with men and women actively participating in economic opportunities. Ifugao women enjoy a high degree of equality—they can inherit and own land and property equally as men and exercise joint authority with their husbands at home. Still, it is the women who undertake the bulk of household responsibilities, from child rearing, cooking, washing clothes to managing the finances[XVI].

It is. on the other hand. the role of the men to help in cultivating the terraces, repair of walls, plant in the swidden lands, and collect wood. They have more leisure time and sometimes help with the chores, go hunting and fishing, or gambling in their free time. It is also the men's responsibility to ensure the safety of his family and the village[XVII].

Ifugao Architecture and Settlement: A Gendered Perspective

The Ifugao house, or the bale, is considered as one of the most prized ingenious folk architecture in the Philippines. It is traditionally constructed using hard woods, raised on wooden stilts, with a square modular plan and a basic dimension of two to four meters; and a pyramidal roof traditionally made with cogon grass.

Perez, in his book, Folk Architecture, describes the bale to a woman's figure wearing the tudung, a raincape commonly worn by women; with the ladder being compared to a pair of

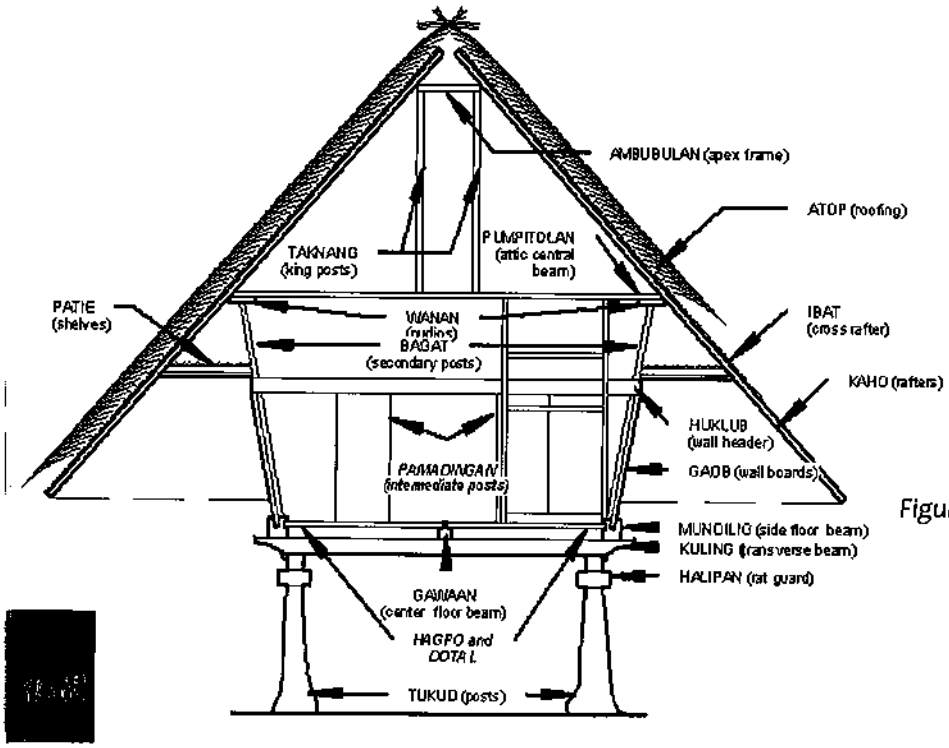


Figure 2: Cross Section of an Ifugao House

stretched legs. From an anatomical perspective, the house becomes the belly or the torso[XVIII].

There are essentially three levels to the Ifugao house: the ground floor, or the chola; the bale, or house cage; and the palan, or the granary. (Fig.2) The chola, is an open, multi-functional space found below the house serving as ritual space, storage, and weaving area for the women in the family.

The interior of the bale is a one-room affair, where all activities are performed. (Fig.3) There are no demarcations or boundaries within, except for the pamalakngan, or the hearth. Patie or shelves are constructed on the eaves, projecting outwardly of the house cage. They are used to store items such as utensils, food, and weaving products. A special shelf, called palatang, is added to hold the remains of their ancestors.

There are no windows, and a single door provides sole access to the house through a four-tiered ladder. In some of the houses visited, there may be a back door present but usually remains closed. Access is limited as the ladder remains fixed at the front. Without any other openings in the house, and blackened by the soot from the hearth, the interior is kept naturally dark.

Using architecture as metaphor for the body, the configuration of the bale is significant and telling. As doors and windows are symbolic of bodily orifices[XIX] , the absence or lack of openings, and the darkness that envelope the interior of the house is quite suggestive of the womb[XX]. Almost in a literal sense, the house is a woman, and the woman, a house.

Yet on another level, the lack of openings in the bale can be regarded as a way to limit the visibility of the woman inside the house. With a number of domestic activities being performed inside, so is the woman kept out of sight and away from the masculine gaze[XXI].

It is also interesting to note that despite no

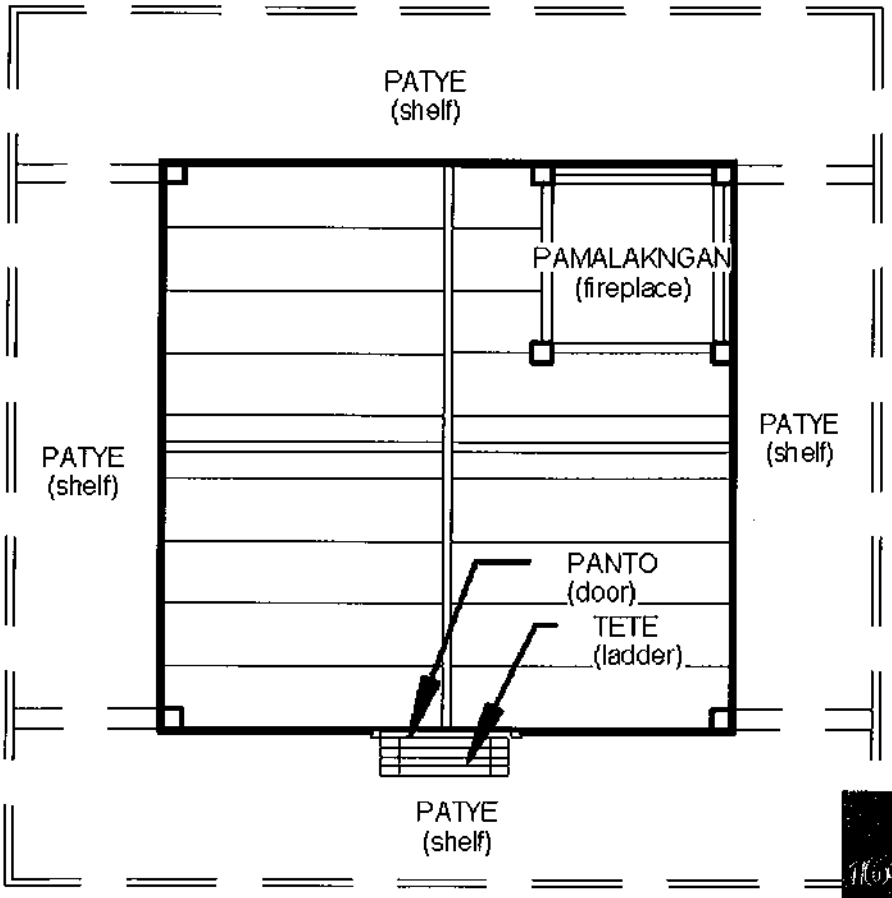


Figure 3: Typical Plan of an Ifugao house

physical boundaries present inside the bale, an invisible zoning occurs. The left side is usually associated with the male, and referred to as nundatu, which means continuing, while the right side, and incidentally is adjacent to the kitchen or hearth is female, or na-ulya, meaning lacking, because it is shorter. Sleeping positions are influenced by this, as men and women take their respective sides. In certain rituals, as Perez notes, the husband's relatives will sit on the male's side, and the wife's relatives taking the right[XXII].

Another area, which may be considered as part of the female sphere is the chola. This multi-functional space, which serves as the weaving area, seems to both literally and figuratively anchor the women to the house. The preferred weaving implement is the backstrap loom, which requires the weaver to strap the loom to herself and to hook it on a fixed part of the house—in this case, the massive posts that support it and mark the four corners—further solidifying the links between the woman, the home and weaving.

Although, arguably spurred by practical reasons, as the interior of the house is too dark to perform the task of weaving, the chola aids in furthering social ties with fellow weavers, and transforms weaving into a gregarious activity. But even as it does so, it restricts the mobility of the woman, keeping her at a close distance to the home and far from the public sphere, away from the domain of the men.

To a great degree, the bale is a sexual symbol for the female and fertility[XXIII]. Despite the strong associations of the house's form and spatial use with the female, Ifugao women are hardly empowered to make decision in house construction, and this aspect remains to be the man's discretion.

Even in cases of unmarried women, where sole ownership of the house is guaranteed, male relatives undertake the responsibility of house design and construction, and the woman's role is diminished and devoted to serving the menfolk food and refreshments during construction period.

Quite compelling too is the apparent lack of ornamentation on most Ifugao homes. While one expects for the women to participate in this aspect of home designing, the little ornamentation present were carved into the very structure, which by virtue of being an artisanal craft, therefore falls within the purview of the male.

In Ifugao mythology, the Ifugao house figures in the creation myth as setting for the incestuous repopulation of the earth between the deity Kabigat and his sister, Bugan[XXIV]. There are different retellings of the story, but in all the versions, the brother, the male representation, builds the house for his sister, the female representation, before having carnal relations with her. It is almost as if house building is both a gift of the men to women, and a divine imperative on the part of the male.

Extending beyond domestic architecture, Ifugao town planning is likewise shaped by gender relations. Hamlets, built along the face of the mountains or among the terraces, contain a small number of households bound together by extended kinship. Inasmuch as location is marked by its proximity to the village's source of subsistence, it is also within the prerogative of the male kin to locate the hamlet.

Communal areas focused on weaving are far and between, save for a few newly established weaving cooperative centers, thus largely maintaining weaving within the domestic and

private domain and excluding it from mainstream economic activities.

The presence of dormitories, or agamang, is also one of the notable features in Ifugao settlements. Built for the unmarried youth of the Ifugao, and one for each of the sexes, children of puberty age are sent to live there and away from the nuclear family home. Observance of certain customs, such as courtship, is centered on these dormitories. But another of the agamang's important function is that it becomes the training ground for young men and women to learn and perform gender-appropriate tasks[XXV].

With the exclusion of the children from the premises of the bale, the house remains to be the exclusive territory of the married couple, the symbol of conjugal union, and as gleaned from literature and actual practice, the domination and appropriation of female sexuality.

Conclusion and Discussions

The playing out of sexual identity and relations is as compulsory as it is automatic, without much thought as to the hows and whys, but always coming within the culturally prescribed and accepted rules of engagement. The built environment is a ready stage in which gendered relations and actions are enacted and established over and over again.

In the case of the Ifugao, gender reveals itself to be an underlying influence that imposes on both form and spatial practice. The house is found analogous to the female body and inevitably fetishized, Private spaces are appropriated in the same manner as the female body has been appropriated, and extends well into the fabric of Ifugao settlements.

The status of Ifugao women as individuals and agents of culture, are considered by many as equal to that of men. However, this status has yet to impinge itself on gendered divisions of labor, and how it impacts spatial practice in the Ifugao house and community.

It is not so much a question whether the women are given power and influence, but to what extent it is given. The decision-making power concerning house building is by far limited, challenging the notions of egalitarianism in Ifugao society[XXVI]. Such discrepancy from what is commonly held to be true by a society and what is in actuality may actually stem from this simple truth: a loss of objectivity.

This is the reality that arises in the fetishization of abstract space: users cannot recognize themselves within that specific context and "cannot conceive of adopting a critical stance towards it."[XXVII]

Applying gender concepts as part of analyzing produced space helps to enrich our understanding not only of the built environment but also of the organization and the crux of a given culture. Bringing into fore the invaluable roles that women and men play in shaping our environment can help us to see space and architecture as mere translations of the abstract but a site of lived life.

End notes

[I] Ardener, S., 2006, The Partition of Space, Intimus: Interior Design Theory Reader, Wiley-Academy (London) p.16

[II] Lefebvre, H., 1981. Production of Space, 2nd ed., Oxford: Blackwell Publishers 1991, p.26

[III] ibid., p. 32

[IV] ibid., p.32

[V] Lico, G., 2001 'Architecture and sexuality: the politics of gendered space', Humanities Diliman, 2(1), pp. 35-35

[VI] Perez, R., et.al., 1989 Folk Architecture, Quezon City: GCF Books, p.8

[VII] Ardener, S. 2006. 'The Partition of Space', Intimus: Interior Design Theory Reader, London: Wiley-Academy, p.19

[VIII] Hertz, R. (1909) quoted in Ardener, S. 2006. 'The Partition of Space', Intimus: Interior Design Theory Reader, London: Wiley-Academy, p.19

[IX] Eastlake, C.L., 1868. Hints on household taste in furniture, upholstery and other details. London: Longmans, Green and Co., pp.63-6

[X] Farah, E.A., et.al., 2001. Gender zones in the Arab Muslim house. Proceedings, 3rd international space syntax symposium, Atlanta, May 2001, p.2

[XI] Oliver, P., 2006. Built to meet needs: cultural issues in vernacular architecture. Oxford: Elsevier, Ltd., p.61

[XII] De Villa, J.G., et.al., 1988 E Masferré: people of the Philippine Cordillera. Makati: Devcon IP, p.44

[XIII] Ilcan, Suzan, et.al (eds.), 1998. Transgressing borders: critical perspectives on gender, household and culture. Westport: Bergin & Garvey. p.173. The dyeing of cloths in the weaving communities of the East Sumba is considered symbolic of the birthing process

[XIV] ibid, p.173

[XV] ibid, p.170. That weaving is almost entirely home-based brings to light the gendered aspect of household work , as well as the clear demarcation of the home as what constitutes the female sphere

[XVI] Gender roles are based on cultural beliefs and the perceived strength and weaknesses of the sexes. For instance, child rearing are designated to women because of the mother's perceived nurturing nature, and hunting is designated to men due to perceived bravery. Social class distinction, and ancestral status are are also apparent determinants of community's social structure. Ember and Ember notes that the role of men in the community is more active than the women. Men served as religious and political leaders while the women were more concerned with household management and the upkeep of agricultural fields. In baki, the traditional Ifugao religion,

men serves as mumbaki or priest and perform the narration of myths, recitation of the name of gods, and religious rituals, offerings to god, and ancestor worship. Women can also be priest or mama-o but their roles are limited compared to that of mumbaki. Baki is a belief system that spouses polytheism, mythology, magic and animism

[XVII] op. cit., p.85

[XVIII] Perez, R., et.al., 1989 Folk Architecture, Quezon City: GCF Books, p.69

[XIX] Hilus, H., 2000. Architecture as metaphor for the body: the case of female convents in early modern Italy. Gender and architecture. England: Wiley.The concept of using architecture as metaphor for body has been espoused by many feminist writers and scholars. However, as early as 1st century BC, Vitruvius has made comparisons to the Classical Orders—the Doric, Ionic and Corinthian to the male and female bodies. Although the Ifugao themselves may not necessarily describe the bale in these terms, the researchers have taken a feminist and gendered approach to explain the form and spatial use of the Ifugao bale

[XX] ibid, p.78.

[XXI] Foucault posits that existing within the power relations, the gaze is a mechanism by which power is expressed. There is an inherent question as to who gazes upon who, and in effect, who in that equation has the power? The keeping of women out of the gaze of men would then suggests that men would have the power of the gaze, and the means to control how women behave and the environmental conditions where they could be gazed upon. Likewise, in Hilus' study of architecture of female convents, she relates Renaissance text that considers the female gaze as dangerous and should therefore be avoided by men. This belief in the danger that the female gaze poses has been used as justification to cloister women in these convents.

[XXII] Perez, p.69

[XXIII] ibid, p.80

[XIV] In other versions found within the Ifugao tradition and surrounding communities, the creation myth tells the incestuous relations between a mortal man, Wigan, and his sister, Bugan to repopulate the earth after a great flood. This creates a strong link between sexuality, specifically female sexuality, and house building..

[XXV] De Villa, J.G., et.al., 1988. E Masferré: people of the Philippine Cordillera. Makati: Devcon IP, p.84. It is also curious that inasmuch as as the Ifugao people condone the incestuous relations between Kabigat and Bugan, as previously mentioned, they acknowledge the taboo surrounding it, and may to certain degree influenced the way the community is planned, and thus giving way to the creation of the agamang.

During the day the children return to the house of their parents to help them with their tasks. Boys were trained masculine things such as hunting, and basket weaving. Girls are on the other hand taught house chores, weaving, and helped in taking care of the young. The perpetuation of gender

roles are therefore very defined as it is passed on from one generation to the other.

[XXVI] Oakley, A., 1974 The sociology of housework. Bath:The Pitman Press. p.10. Women enjoy what is known as "refelected status", one that is afforded to them by association with their husband or a male figure.

[XXVII] Lefebvre, H., 1981. Production of Space, 2nd ed., Oxford: Blackwell Publishers, p.93. See also Bordieu's concept of habitus

Bibliography

Barton, Roy, 1919. Ifugao Law, *Ifugao law, Volume 15, Issues 2-5, Volume 15, Issue 1 of University of California publications in American archaeology and ethnology*, CA: University of California Press

Bordieu, Pierre, 1990. *Structures, habitus and practices*. California: Stanford UP

Coleman, Debra, et.al, eds. 1996. *Architecture and feminism*. New York: Princeton Architectural Press

Denigan, Caroline. 2002. The Self –build housing of men and others: researching gender and vernacular architecture in Australia. *XIXth conference of the Society of Architectural Historians, Australia and New Zealand*. Brisbane: SAHANZ 2002

De Villa, Jane G., et.al., 1988. *E Masferré: people of the Philippine Cordillera*. Makati: Devcon IP

Durning, Louise, et.al., 2000. *Gender and architecture*. England: Wrigley

Dursun, Pelin, 2007. Space syntax in architectural design. Proceedings, *6th international space syntax symposium*, Istanbul: 2007

Eastlake, Charles Locke. 1868. *Hints on household taste in furniture, upholstery and other details*. London: Longmans, Green and Co.

Ember, Carol. R. & Ember, M., 2003 *Encyclopedia of sex and gender: men and women in the world's cultures*, Volume 1, Springer

Farah, Eman Abdelrahman., et.al., 2001. Gender zones in the Arab Muslim house. Proceedings, *3rd international space syntax symposium*, Atlanta, May 2001

Foucault, Michel, 1980. *Power/Knowledge: Selected Interviews and Other Writings*, 1972-1977, New York: Pantheon Books

Hall, Edward T., 1966. *The hidden dimension*. New York: Doubleday and Co., Inc

Ilcan, Susan & Phillips, L., 1998. *Transgressing borders: critical perspectives on gender, household, and culture*, Westport: Bergin and Garvey

Kwolek-Folland, Angel. 1995. *Gender as a Category of Analysis in Vernacular Architecture Studies, Gender, Class, and Shelter: Perspectives in Vernacular Architecture*, V. E. Cromley and C. Hudgins, eds., Knoxville: University of Tennessee Press

Milgram. Barbara Lynn. 1991. *The textiles of highland Luzon*, Philippines: a case study in material culture. Michigan: UMI Dissertation Services

Lefebvre, Henri., 1981. *Production of Space*, 2nd ed., Oxford: Blackwell Publishers .

Lico, Gerard, 2001 'Architecture and sexuality: the politics of gendered space', *Humanities Diliman*, 2(1)

Oakley, Anne., 1974 *The sociology of housework*. Bath:The Pitman Press.

Oliver, Paul., 2006. *Built to meet needs: cultural issues in vernacular architecture*. Oxford: Elsevier, Ltd

Perez, Rodrigo., et.al., 1989 *Folk Architecture*, Quezon City: GCF Books

Preston, Julieanna, et.al. eds. 2006. *Intimus: interior design theory reader*. New Jersey: Wiley and Sons, Inc.

THE SABARMATI RIVER: MEMORY OF WATER AND NOTIONS OF PRIVACY

Gauri Bharat, Seema Khanwalkar

Abstract

An eco-semiotic perspective[1] on nature explains how it exists and gets transformed in four stages: stage zero being wilderness, one – interpreting, identifying, describing, nature two – material interpretation, translation, and production of nature, and three – virtual nature (as represented in the classical and formal arts for instance). A vernacular tradition may be understood as situated in stage one, wherein people convert the physical proximity to nature into a space replete with meaning and association. In a recent interdisciplinary workshop at CEPT University, India we explored the semiotically constructed notions of space and geography in villages on either side of the Sabarmati River in Gujarat.

The presence of the river has particular topographical and spatial impacts on the region, and a number of myths and stories have been developed around its presence. What is interesting is that the river has been dammed, has now nearly dried and patterns of life and livelihood along its banks have significantly changed.

The myths however remain, and have become ingrained in the settlement and landscape through built symbols such as temples, shrines and other religious iconography or more elusively, in the oral narrative traditions of the local people. These icons and narratives take on the responsibility of being repositories of a vernacular worldview constructed around associations with the river, even when the essence of the myths i.e. the river is no longer present.

[1]*The ecosemiotic view has been developed on the basis of writings by the Tartu School of Semiotics, Semiotic Ecology by Kalevi Kull, Floyd Merrell etc)*

Introduction

The relation between nature, people and semiotics as seen in the narrative and mythical landscapes of India is the central concern of this paper, and its relevance to vernacular architecture lies in the fact that notions of place and meaning are central to the vernacular architecture discourse. We argue that an eco-semiotic perspective on the relationship of humans with nature can help understand the process of 'making meing', and that this process is mediated through 'signs' and elements that come together in a fascinating array of systemic order corresponding to the geographical order. This paper therefore, explores the idea of a vernacular worldview, and the mental constructs of inhabited space, rather than with the built object. The site of investigation of this paper is the Sabarmati River in the state of Gujarat in Western India. We seek to understand the specific meanings attributed to the riverine landscape – meanings that continue to persist even though the river itself has dried out and the landscape substantially changed. The river continues to flow in the minds of the people, through iconic figures and institutions that stand for flattened layers of history of the settlements in the region. Today, these memories and icons have no visible connection to the water, but interestingly, are deeply connected to the geographical landscape in the 'narratives' of the local inhabitants. This kind of conceptualization about imaginations of place and nature even when the physical setting transforms is an interesting starting point for exploring the persistence of vernacular world views in the face of changing times and context.

Vocabulary of Water – the workshop [2]

This paper is based on an interdisciplinary workshop conducted by the authors at CEPT University, Ahmedabad in November and December 2009. The basic premise of the workshop was to explore through, oral narratives, how people converted proximity to nature into a system replete with meaning and association. In conceptualizing the workshop, we began with an eco-semiotic perspective on the relationship between humans and nature. In semiotic terms, human perception and interpretation change nature, creating a 'second' nature. Humans tend to change, manipulate, and take nature under control to build a 'second' nature. Human culture adds to nature by supplementing it with additional information and values. There are four stages of nature and its transformation:

Zero – Nature in its wilderness (what is out there)

Stage one – Identifying, interpreting, describing nature (in myths, folktales, through the naming the river and other elements, and through narratives)

Stage Two – Material interpretation and translation of nature ('produced' nature such as parks, gardens, river fronts)

Stage Three – Virtual nature – nature as represented in the arts, in science etc

The broader question for the workshop was how the recognition and categorization of the surroundings of the Sabarmati in human terms has changed the natural landscape of the Sabarmati into a memory of narratives for the people who could no longer physically 'see' the river.

[2] *This paper is dedicated to the entire team of students and faculty at CEPT University who participated in the workshop, 'Vocabulary of Water'.*

The ecosemiotic principles that formed the basic premises for the workshop were:

1. Nature is dependent on various contexts or situations.
-Structure and classification of nature
-What it means for people
-Personal or social relations to the components of nature – one's participation in/with nature

2. The Role of Memory
-Relationships between different types (short-term, long-term) memory in culture
-Valuation of Sabarmati
-Differences in seeing and understanding the Sabarmati
-Signal character of the behavior of people in relation to Sabarmati (when living close to the river/away from it, talking a walk down the river, reading about it in the papers/TV, speaking or dreaming about it)

3. Formation of Nature
-Constructing a notion of the Sabarmati environment using linguistic, aesthetic forms

Sites of Investigation and method of workshop

Initial discussions on selecting sites of investigation for an ecosemiotic study dealt with understanding the social/ cultural landscape along the Sabarmati in Gujarat. The area we studied were villages on either bank of the Sabarmati River – Agalod, Juna Sanghpur and Mahudi on the west bank, Sadra, Sanpad and Prantij on the east bank.The methodology consisted of collecting oral narratives, mapping the 'space' of the stories, identifying the protagonists and events by looking at the emergence of patterns of meanings that seemed to have strong 'systemic' implications.

Some of the systemic patterns we identified were:

1. The notion of 'cursed' versus 'blessed' land - Mahudi and Sandpar stories

2. More male deities on west bank versus female deities on east bank

3. Ghantakarna Mahavira – one of the important deities in the Mahudi temple - as a warrior protector figure for pilgrimage route –an interpretation based on the history and socio-political dynamics of the Mahudi region

4. The Sabarmati as pavitra(pure)river versus the Hathmati as apavitra (impure), their meeting as not a sangam (confluence) of the two rivers but the Sabarmati as stopping the Hathmati in its course.

5. The presence of local river goddesses unique to a locality - Habelma in Mahudi – rather than a broader conception of the Sabarmati as a venerated figure.

6. The persistence of the motif of the 'large ears' in mythical figures at Mahudi, and the recurrence of the notion of listening to the troubles of people by leaders.

What we would like to highlight from the workshop findings above are two distinct processes by which meaning has been ascribed to the landscape of the Sabarmati –

1. A flattening of a number of layers of history into an iconic religious figure of Ghantakarna Mahavira at Mahudi.

2. Values attributed to complimentary pairs of entities in the landscape such as either bank of a river or two rivers at their confluence.

Mahudi and the story of Ghantakarna Mahavira

Ghantakarna Mahavira is worshipped in a famous Jain temple located in the village of Mahudi by the Sabarmati. The village is separated from the river by a patch of ravines, while the temple is situated near the edge of the village. The temple is a famous pilgrimage spot for both Jain and non – Jain people, and the village is insignificant and not important for the large number of visitors to the temple.

The main deity at Mahudi is Padmaprabhu Swami, a tirthankar or spiritual leader typically worshipped in Jain temples. Ghantakarna Mahavira is a yaksha or protector figure, but incidentally, the shrine of Ghantakarna Mahavira is larger and centrally located. Most visitors themselves are likely to recall Ghantakarna Mahavira as the primary deity. The Mahudi temple is also very famous for sukhdi, a sweet preparation that is first offered to Ghantakarna Mahavira and then must be consumed within the temple premises itself. In short, all indications point to Ghantakarna Mahavira being an important figure at the Mahudi temple.

In documenting the myths and stories of the Mahudi village, we find a number of different influences that have possibly contributed to the mythology and iconography of Ghantakarna Mahavira as a figure of worship. Mahudi is located along a pilgrimage route for ascetics of the Jain community- it is situated between two important Jain centres of Agalod to the north and Ahmedabad to the south. This pilgrimage route goes along the west banks of the river, and has a number of sites where pilgrims could halt; Mahudi is one such location. Historically, the region around Mahudi was occupied by number of small royal households in the area, who were often in conflict with each other. The area was also home to dacoits and was largely unsafe for the Jain ascetics to travel through. It is plausible that sometime in the past, the Jains established a pact with some local royal leader for protection on the pilgrimage route. The presence of Ghantakarna Mahavira as a warrior protector figure in a Jain temple complex is possibly inspired by this history, and maybe even by a particular Rajput leader from the past.

The Motif of the 'Large Ears'

The figure of Ghantakarna Mahavira is portrayed as having large ears. We found three references to the motif of a large ear and the importance of listening in the stories collected, which may possibly be connected to the present day iconography of Ghantakarna Mahavira. First, some Buddhist archeological remains have been found in the region, indicating a Buddhist presence sometime in past. Buddha is usually portrayed as having large ears. Second, the establishment of Ghantakarna Mahavira at the temple is said to have happened because of Buddhisagarji, a venerated man who was performing penance for the betterment of the people of Mahudi. Buddhisagarji saw a divine figure descending from the sky towards Mahudi, but as soon as he opened his eyes, the figure disappeared. He immediately set about trying to capture the image into stone. But he was unable stone

good enough to sculpt, and used a washerman's stone block to carve the image. The image he had seen had large ears, and the figure of Ghantakarna Mahavira as it stands in the temple has the same.

A third reference is to a mythical king – Ghadeshwar - of the Mahudi region who donned the guise of a donkey every night to go out into the streets and listen to the problems of his people. Interestingly, the motif of the large ear appears again in the form of the donkey persona of the mythical king. It is likely that the relationship between the warrior like Ghantakarna Mahavira and the Jain deities in the temple could be rooted in some form of a protection pact between Jain pilgrims and royal figures of the Mahudi region in the past. In the process of deifying through history, the figure of Ghantakarna Mahavira is juxtaposed with images of other important figures in history and mythology such as Buddha and Gadheswar, and that result in the large ear motif seen in Ghantakarna Mahavira today. Snippets of historical events, myths and religious figures have all fused together in Mahudi, and all that stands in evidence of these layers of history is the worship of the warrior like Ghantakarna Mahavira at a Jain temple.

The cursed and blessed banks - stories from Mahudi and Sanpad

The two banks of the Sabarmati at most locations are in stark contrast to each other – one is a highly eroded ravine edge and the other, is a gentler, fertile beach like edge. The name Sabarmati itself comes from Shwabhramati (*shwabhra* – ravine) meaning one who bears ravines. Mahudi lies on a ravine edged bank while the village Sandpar lies on the opposite bank. The story of the mythical king of Mahudi – Gadheswar – who roamed the streets of his kingdom at night in the guise of a donkey, goes on to say that the queen did not approve of the king's night time wandering and ordered the army chief to burn his donkey guise. However, the king's soul resided in the guise, and as the guise burned, the king's body started to burn. As he died, the king cursed the queen that the land in which such a queen hand been born would become rocky and barren. And this is how the Mahudi region came to have the ravines.

Facing Mahudi on the other bank is the village of Sanpad, which is located at the confluence of the Sabarmati and Hathmati rivers. The delta region of the two regions is very fertile and cultivated even today. There are two stories that describe how the land around Sanpad came to green and fertile. A group of basket weavers once came and settled in the village of Sanpad. They were however a troublesome lot, prone to drinking, using foul language and disturbing the peace of the village in general. The villagers tried to convince them to change their ways by saying the Goddess Kali who protected the village would get angry at their vulgar behaviour. The group refused to listen and argued that if Kali really protected the village, then she should make her presence felt, and turn their bamboos green. The villagers prayed to the Goddess and the next day, the basket weavers' bamboos had turned green. Even today, the Kali temple at Sandpad has green bamboo clusters in the compound [3].

These two stories – of Mahudi as a cursed land

[3] *There is another story of an ascetic who correctly answered a king's riddles, and requested the king to build a Kali temple in the Sanpad village as a prize. On being asked the reason, the ascetic replied that the land around Sanpad was barren and with the blessings of Goddess Kali, the two rivers meeting at Sanpad would flood and make the land fertile. The king built the temple and the river flooded bringing fertile silt into the delta region.*

and Sanpad as blessed land – directly correspond to the fertility of the land on either bank of the river. What is interesting is that a geographical feature of ravines and fertile delta land becomes a mythical blessed or cursed space in the minds of the people who inhabit it.

Pure and impure rivers: the metaphor of 'churning'

During the workshop, we deliberated on the confluence of the two rivers in Sanpad – the Sabarmati and the Hathmati, the latter being a small tributary of the former. In talking to the people of Sanpad, we found that their manner of referring to the rivers was entirely different. The two rivers were not simply converging at the point; rather the Sabarmati – a purer river – was stopping the waters of the relatively impure Hathmati and causing the floods in the delta region. This reference to notions of purity comes primarily from the idea of churning as a purifying process (Rosin, 2000). Since the Sabarmati traverses a longer course, it is churns more, and is therefore purer that the shorter Hathmati. This highly distinction between the two rivers only became through conversation with the local people of Sanpad. Their choice of words - that the Hathmati was 'stopped' by the Sabarmati – was in stark contrast to our description of the 'confluence' of the two rivers. This also highlights the difference in perception of the rivers – the nuanced distinction made by the local people and the similarity perceived by us, the outsiders.

Conclusion

This paper asserts in a Heidegger vein that 'people make places'. The complexity of 'place' results on account of its deep entrenchedness in the human existence. The underlying question that this paper addresses is, what are people actually making when they make places? Since the ontology of place is connected to human situatedness, making places means that one is making something with respect to situating one self. There is an equivalence relation between humans and places: no places exist without humans and, vice versa, no humans exist without places. Place is a precondition of human existence, and making places is thus to reinforce their placeness. This view can also be said to correspond with Bill Hillier's interpretation of the physical environment as both the reflection and the conveyer of social structure and interactions, where particular environmental features contribute to, and reflect the particular human worlds manifesting in a particular place.

A fascinating construct of the Indian identity through shared, living landscapes that transcend all its cultural and regional complexities has been well established in academic scholarship. These landscapes referred to as 'storied and mythical' have been studied more for the manner in which they are articulated that reinforce not one, but multiple layers of meaning. This mythology has also been linked to India's geography- its mountains, rivers, forests, shores, villages and cities. Diana Eck (1998) elaborates on a very important aspect to this link in the context of Pilgrimage in Hindu mythology that is the foundation of nationhood on the lines of

Hinduism. She says that this landscape is actually a 'system' of reference in which each of these pilgrimage points functions as a part of a whole fabric of pilgrimages. And in the end, the cumulative value of the landscape lies in all the linkages between the points. She goes on to establish the systemic elements that constitute this landscape that are knit together through repetitions and homologies. This kind of systemic structuring is of course supported by a cosmology in which the entire universe is construed as a system and hence it is flexible enough to allow for a pluralism of interrelated parts.

This kind of conceptualization about imaginations of collective beliefs has been an interesting starting point for specific instances of processes like those in the north Gujarat region where the Sabarmati river was once in great flow, and in which associations with landscape and geography, while connecting with larger notions of 'identities', also help to retain iconic meanings despite a sense of loss of real nature. By unearthing the specificities, localized and, dependent on 'memories' of a river and a river bank the patterns brought out in this paper speak volumes about notions of vernacular architecture that are inhabited at the level of the 'semiotic', which is the cultural unconscious. And it is at this level that no environmental ravaging can penetrate or destroy their habitations strewn with patterns that they weave in accordance to their proximity (both physical and mental) to a nature, that 'once was' and 'continues to be'. It is hoped that this paper will give rise to an alternative perspective on the notions of vernacular architecture in India that needs to be seen as narrative expressions of belief systems and people's understanding of nature around them.

References

1. On Ecosemiotics: Tartu School of Semiotics,

2. Semiotic Ecology by Kalevi Kull, Floyd Merrell etc)

3. Diana L. Eck, 'the imagined landscape: Patterns in the construction of Hindu sacred geography'. Contributions to Indian Sociology (n.s.) 32,2 (1998), Sage Publications.

4. Rosin, R. Thomas, 'Wind, traffic and dust: The recycling of wastes'. Contributions to Indian Sociology, Vol. 34, No. 3, 361-408 (2000), Sage Publications.

BRUNEI KAMPONG AYER : AN ANALYSIS OF THE STRUCTURE AND THE CONDITIONS OF EVOLUTION OF A BORNEO MALAY URBANISM

Remy Leblanc

Abstract

For the past 15 years Kampong Ayer, Brunei's famous water villages and former empire's capital has been left to decay slowly. Debates about its future are held far from its inhabitants and away from Brunei's population that all have their roots in it. This paper attempts to show that this static phase of the village history, with centralized external forces holding its development and planning its redevelopment, has not occurred during 1300 years of history. This does not follow the traditional pattern of urban development of the Vernacular Southeast Asian Coastal Cities [VSEACC], thus any decision made with this new process will dramatically change the face of Kampong Ayer.

I argue that Kampong Ayer is an example of a unique type of city that existed during the historical period from the 7th century to the end of the 20th century. The raison d'être of these cities were to be polities and trading centres, connected with outside world, points of exchange between people, goods, ideas, between seas, rivers and land.

There is no research in the urban discipline about the structure of the VSEACC, I propose to use the anthropological model of urban definition developed by O'Connor(1983) as framework of analysis of its structure and evolution. As he postulates, in Southeast Asia, urban fabrication is a corollary of social structures. To describe the urban form it is then necessary to understand these structures and spatialise them. This will set the background for a brief sketch of the history of Brunei Kampong Ayer.

Keywords: *Water Villages, Kampong Ayer, Southeast Asia, Traditional city*

The Southeast Asian City

The Southeast Asian coastal landscape, "the thinly-populated coastlines of the large insular and peninsular land masses of Malaysia, the Philippines, and western Indonesia" (Bronson, 1977), historically has been the theatre of the construction of trading cities and polities of particular form and purpose. These have been studied in fields such as Ethno-history, archaeology, sociology, anthropology (Brown, 1976, Tagliacozzo, 2007, Reid, 1980, Manguin, 1991a, Colombijn, 2003). Anthology and models of the VSEACC have been produced in the economic and social fields (O'Connor, 1983, Junker, 1994, Winzeler, 1976, Bronson, 1977). This paper aims at explaining and spatialising the structures and the evolution of urban form at the centre of these polities with Brunei Kampong Ayer as a case study.

Bronson (1977;p.51) in a seminal article stated "we are dealing with a social and economic system quite different from those we consider normal in the heartlands of other civilisations."[1] Tagliacozzo (2007;p.912) describes a recurring particular urban pattern in Southeast Asia that follows fours factors: "first, the international orientation of the region; second, the dual functionality of port and political entity; third, urban adaptation as a mechanism of survival; and fourth, a notable balance of centrifugal politics and centripetal economics". He argues that these factors set these cities apart from the great Indian and Chinese cities that are either centres of polities or centres of commerce, often not open to the world and not ready to assimilate changes for their survivals.

The important characteristics of these states, and cities, were their amorphous areas of control and establishment (Manguin, 2002) and their impermanence(O'Connor, 1983, Colombijn, 2003). Manguin (1991b) in his exegesis of ancient Malay texts emphasised the notion that the Sultan / King was the religious but also the physical centre of state, without mentioning the specific location or extent of his dominion.

Khoo (1977) explained that In the Malay world the state was not a territory but an institution of the Sultan / King. The city went where the rulers were. Winstedt (1934) stated that since the cites were mainly composed of buildings made of thatch and bamboos , they were easy to move. Both time and water have washed away the abandoned settlements of these state's centres built with perishable materials.

Along the river of Brunei's capital, Bandar Seri Begawan, Kampong Ayer is the last remaining example of these 'centres of polities'. Over the course of 1300 years, the locations of the villages and the religious and political centres of the state were established in different locations on the same fluvial system(Hughes-Hallett, 1940, Nicholl, 1983). This river ecosystem, deep marshland, swamp, forested hills, and generous fishing grounds are constant along the mile of its course, which allows an undifferentiated location of settlement when the need for relocation occurred. Kampong Ayer is in fact a collection of villages, each of different function: traders, nobility, fishermen, thatch harvester, etc... The location and activities the villages could change over the time(Brown, 1970, Ibrahim, 1971).

The following section will formulate a framework for the analysis of the reason of settlement, evolution of the social structure of the VSEACC and its relationship to the urban

[1] *Bronson's article is the first work to interrogate the forms and reasons for settlement of early Southeast Asian coastal cities.*

[2] *O'Connor developed his theory in opposition of the work of economists, in this context, a definition of the city by an e conomist is proposed as an introduction of this section.*

environment with reference to O'Connor's (1983) theory of indigenous Urbanism.

Theory of Southeast Asian indigenous Urbanism

In this part I define and test the definition O'Connor's Theory of Southeast Asian indigenous Urbanism. First I describe his definition of the Southeast Asia city, second, I describe the items that are important in it, and third, I explain the different sequences he determined in the structure and evolution of the indigenous urbanism. In the last part of this section I offer a revised definition to explain the urban form of Kampong Ayer. This will lead to the final part of this article where it will be use as a framework for the analysis of Brunei's Capital.

O'Connor's definition of the city

A definition of the city could be made accordingly to Weber: "Economically defined the city is settlement of inhabitants of which live primarily off trade and commerce rather than agriculture" (1966; p.66)[2] . Certainly the Southeast Asia city is the perfect example of that definition as suggested in the previous section. However, O'Connor claims that it is not the market or the population density that makes the Southeast Asian city but "it is indigenous historically conditioned symbols that I call Community and Hierarchy"(1983; p.11). Thus his major point is that "Together as idioms[3] and institution, community and hierarchy shape the city's meaning and give meaning to urban life"(1983; p.5).

O'Connor proposes a definition of the Southeast Asian city:

1- How is the city organised? Community and hierarchy are both predominant idioms of social relations and the institutional core of the city.

2- What holds the city together? They share symbols of community and hierarchy create solidarity...

3- How does the city rule the country? People accept that the city is the centre of civilization, the once Indic and now modern way of the world (1983; p.11) .

Elements of the city

What is the idiom of community? For our study it important to recall two specific social aspects of the Southeast Asian world: the bilateral kinship system of social organisation and the mosaic of ethnic groups that occupies a land very sparsely populated. Bilateral kinship means that multiple choices of ties among large number of possibilities could be made[4]. The composition of groups could evolve very fluidly. This creates fluid boundaries and multiple possibilities between groups. Kinship is a form of community. Ethnic diversity also played a very important role in the creation of the city. O'Connor postulated that it had a repercussion for the appearance and the nature of cities. The VSEACC contains many ethnic groups but also in the economic system the city, it relied on many different ethnic groups for its survival. In the city, ethnic idiom could be considered as operating as idiom of

[3] *Idiom:"a coherent way of symbolizing what people think, say, and do." O'CONNOR, R. A. 1983. A theory of indigenous Southeast Asian urbanism, Singapore, Institute of Southeast Asian Studies. P.5*

[4] *This is of course a simplistic definition; refer to Brown for a complete discussion. BROWN, D. E. 1976. Principles of social structure : Southeast Asia, Boulder, Colo., Westview Press.*

community because it gathered groups of people that have the same customs. As a conclusion, ethnicity and family idiom created communities that could live next to one another and so are building the indigenous cities.

These previous discussion sets out the elements for O'Connor theoretical discussion on how the Southeast Asian indigenous city appeared, is constituted and has evolved. Following is a presentation of the different sequences of evolution he defined in his theory.

Stages of evolution

For O'Connor, in the first stage in Southeast Asia settlement, the society follows Durkheim (1964)division of labour, it is of mechanical organisation, it is composed of similar segments that share the same principles. Sameness makes association possible. At this stage, there is no urban centre, just groups of kinship with fluid composition. Later, in the different cultures of Southeast Asia, came a leader of community. This leader acted also symbolically like a fathered figure. A second layer of hierarchy appeared; there were then two layers of communities. This leader had to attract followers and retain them; followers had the possibility of residence. These processes of attraction became ritual, almost religious. The leader became the centre of small urban group, the centre of a community of community. But such groups could not grow too much, since the choices for the followers were open. This was a very fluid notion of belonging to groups. Also these groups were competing for the same constituents.

The next stage of evolution occurred when the society became even more complex. O'Connor(1983) uses Durkheim's theory to define that the society transformed into organic society: "system of different organs each with special role, and which they are formed of differentiated parts. Each part of the society is so specialized that it cannot be split of and lives alone" (Durkheim, 1964; p.181). Complex societies are tied together by the division of labour. In Southeast Asia, this stage occurred when the Indic principles of social organisation spread. They added another hierarchy level at the top of actual system. This added level has to be related to religion, a link to cosmos to be accepted, to unify competing communities. The new leader, the Raja, brought together groups of community. It created a symbolic centre that also translated into a centre for urbanisation. O'Connor stated that communities did not disappear under the influence of Indianization, but became encompassed in this new system. Islam did not disrupt that order. Islam idiom set the Sultan like the Raja at the top of spiritual and terrestrial world, building also on family values one fundamental value of idiom of community.

The following stage was Colonialism:

> It changed Southeast Asian cities profoundly, and yet these changes were set within much deeper continuities. Immigration, pluralism, the primate city and ethnic division of labour were not new to indigenous urbanism. City remained the centre of wealth, power and prestige. As in the past, urban is centred social hierarchy. Idiom of modernity was institutionalized in the educational system and its end product, bureaucracy, it also

[5] *The composition of the villages presented here is a simplification of the reality.*

[6] *There are many debates about Brunei history pre European constant contact. We chose to refer to the work of Father Nicholl unless further notification.*

became a much wider idiom of hierarchy throughout the society (O'Connor, 1983; p.71).

The last stage was modernism and the road to independence. Here the study needs to interpret O'Connor works in Brunei context. The countries studied in 1983 were searching their path into independence but in Brunei the colonial ruler handed the power back to the monarchy. The elite, the traditional nobility is placed at the top of bureaucracy, not by education as elsewhere, but by community and hierarchy levels. In the modern city, community is recreated: to access a type of work, one has to belong to a community, same village, friends... And the need for differentiated hierarchy levels remains the same. Following O'Connor theory, once again community and hierarchy level has returned to the city, Indic idioms again are ruling its development.

The theory in Brunei Context

How do the idioms of hierarchy and community materialise spatially? If we analyse at Kampong Ayer structure, we know that the villages represent a grouping of different families, or kinship, or groups of people having the same economical occupation(Saint John, 1863). We can identify that the city is centred on the "cosmological" layer of hierarchy represented by the Sultan located in its palace. Kampong Ayer is an aggregation of villages of complex composition that are drawn together as followers of the Sultan that makes the trade possible. Clearly then the spatialisation of the idioms of hierarchy and community can be identified in the composition of the villages. They are either the product of a 'head man' (powerful trader, high rank Noble etc.) that has gathered his kin and follower's kin or ethnic groups that are settled in groups [5].
Thus I have outlined O'Connor's theory and established its relevance for the analysis of the structure and condition of evolution of the VSEACC. In the next part I will use it as a framework of the analysis of Brunei's Kampong Ayer.

A short Sketch of Brunei Urban Structure and condition of changes

Many legends of north Borneo relates how Alak Betatar became the legendary founder of Brunei monarchy, Nicholl (1983) estimated the year 692[6] . Saunders (1994) interprets local legend and concluded that a group of people with superior power, almost mystical, had a coherent organisation, and they subjugated the indigenous inhabitant with a combination of power and offering. Previous studies postulate that they were families of high rank escaping the collapse of the indianized Funan empire[7] . For our study this implies: first that from its beginning Brunei's culture included Indic idioms. Secondly, since the direct lineage of Alak Betatar to the current Sultan Hassannal Bolkiah has been established[8], then every successive site of the polity's centre can be seen as a displacement of an urban centre.
The first Brunei thalassocracy was between 692 to 835, the capital's name was known as

[7] *See SAUNDERS, G. E. 1994. A history of Brunei, Kuala Lumpur; New York, Oxford University Press. And BROWN, D. E. 1970. Brunei : the structure and history of a Bornean Malaya sultanate, [Brunei], Printed by The Star Press [for] Brunei Museum.*

8 The official version of the family tree is challenged by scholars. See SAUNDERS (1994)

[9] *Talassocracy is a dominion over the seas, as in exploration, trade, or colonization.*

Shrivajia in Arabic texts and its approximate location was in the mouth of the Lawas river near Brunei's bay. The settlement had a great influence in the region but was of small size(Nicholl, 1983).Brunei's power faded to the rise of the Majapahit Empire but raised again when the latter was about to collapse. The second era of prosperity lasted between 1000 and 1350, its capital, known as Po'Li in the Chinese archives, was located in the Brunei's bay on the mouth of the main river.

The structure of the city can be accounted in the next period of expansion and prosperity that spanned from 1405 to 1650. Brunei adopted Islam as a religion, the capital moved in many places to finally settle in Kampong Ayer around 1660(Brown, 1970). Magellan's chronicler Pigafetta (2007) made a succinct description of Brunei's capital in 1525. There were 25,000 people, on both side of the river. The king was Moor and further upstream a larger settlement was lead by a pagan king. The part of the city that was on land had a wall that protected the Sultan's palace and the families of the noble. The city on the water, the 'Venice of the East' was built on stilts and had four wards on which traders were conducting business. When Harrison(1956) conducted Kota Batu's archaeological excavation, he discovered the remains of a wall protecting a settlement on the hills that date from that period.

This analysis shows that the pattern of settlement corresponds by O'Connor's theory. A capital with a polity centre set on the hills with clear settings of Indianized civilisation, the Mandalay[10] organisation of the King on upper position.

The adoption of Islam did not change the cosmological configuration until the capital moved to Kampong Ayer, when the palace was established on the water and cosmological elements were not used. In the village structure, as stated by Nicholl(1983), the structure of the empire and the culture would not have change from the time which they will be accounted in the 18th century. As previously stated, there were wards held by traders, and certain wards were crafts producer. Reid(1980) described how villages in the 16th century in Southeast Asia were organized around a Head Man with his family and protector of slaves and other families. This configuration certainly applies to our study. A continual pattern of cultural absorption and movement of capital can be observed, but always the idioms of community and hierarchy remained at the centre of urban form and evolution.

Between 1660 to 1910, a long period of decline occurred. In 1904, McAthur saved the monarchy ordering the remains of the empire to become a residency of the British Empire. In 1911, the census counted less than 10.000 souls in a little more than 900 houses in Kampong Ayer(Great Britain. Colonial and Brunei, 1910). For a century now, the successive authority, (the residency then the restored monarchy), pushed for the abandonment of the water settlement. The Istana[11] moved onto land in 1910 then moved again in 1980 in the outskirts of the city. The population really started to leave the settlement in the early 1980's. Surveys from 1930, 1955, 1982 reveal the process of transformation of the urban form. The villages grow within their boundaries, in a clustered manner. Informants[12] detail how and where new houses will be built: the new construction will accommodate the offspring of a kin and will be located in direct connection

[10] *For a definition of the Mandalay concept of settlement see WHEATLEY, P. 1971. The pivot of the four quarters; a preliminary enquiry into the origins and character of the ancient Chinese city, Chicago, Aldine Pub. Co. and WIDODO, J. 2004. The boat and the city : Chinese diaspora and the architecture of Southeast Asian coastal cities, Singapore, Chinese Heritage Centre : Marshall Cavendish Academic.*

with the head of the kinship. The authorisation will be granted by the head of the village. Once again, idiom of community and hierarchy were controlling the growth of the urban development.

This sketch of Brunei history shows that during the 1300 years, the villages were the spatial materialisation of the community idioms and two levels of hierarchy, the third level being the Sultan located in the istana.

This establishes that O'Connor theory can be used as a framework of analysis of the VSEACC in the urban field.

Conclusion

In the first part of this article I have established the specificity of the Southeast Asian city. In the second part I have presented O'Connor theory of indigenous Urbanism and argued in the third part that it could be used to understand the structure and the evolution of the VSEACC.

The finding of this paper is that the VSEACC is an amorphous dynamic urbanism. Its spatial materialisation is a compound of social structures encapsulated in levels of hierarchy that are in continual transformation at regular intervals of time. Physical transformations are due to continual absorption and then hybridation of new political and social structure.

Authorities that presides over the destiny of Kampong Ayer should consider the vernacular pattern of development of the VSEACC. They should consider innovative rules that would preserve the extraordinarily creativity of each community that is at the centre of the creation of their own living environment.

References

BRONSON, B. 1977. Exchange at the upstream and downstream ends: notes toward a functional model of the coastal state in Southeast Asia. *In*: HUTTERER, K. L. (ed.) *Economic Exchange and Social Interaction in Southeast Asia: Perspectives from Prehistory, History and Ethnography*. Ann Arbor: Cent. South Southeast Asian Stud., Univ. Mich.

BROWN, D. E. 1970. *Brunei : the structure and history of a Bornean Malaya sultanate*, [Brunei], Printed by The Star Press [for] Brunei Museum.

BROWN, D. E. 1976. *Principles of social structure : Southeast Asia*, Boulder, Colo., Westview Press.

COLOMBIJN, F. 2003. *The Volatile State in Southeast Asia: Evidence from Sumatra*, 1600-1800. The Journal of Asian Studies, 62, 497-529.

DURKHEIM, É. 1964. *The division of labour in society*, New York, The Free press.

GREAT BRITAIN. COLONIAL, O. & BRUNEI 1910. State of Brunei annual report. *State of Brunei annual report*.

[11] *Istana : Sultan's palace.*

[12] *This information was obtained by interviews during a research trip in Brunei.*

HARISSON, T. & HARRISON, B. 1956. Kota Batu in Brunei. *Sarawak Museum Journal*, VII, 264.

HUGHES-HALLETT, H. R. 1940. *A sketch of the history of Brunei*, [Singapore], Malayan Branch Royal Asiatic Society.

IBRAHIM, A. L. H. 1971. Variations and changes in the name and locations of the wards of Brunei's Kampong Ayer. *Brunei Museum Journal*, 3, 19.

JUNKER, L. L. 1994. The Development of Centralized Craft Production Systems in A.D. 500-1600 Philippine Chiefdoms. *Journal of Southeast Asian Studies*, 25, 1-30.

KHOO, K. K. 1977. traditional malay sultanate: administration. *Workshop on Malay Sultanates and Malay Culture*. Kuala Lumpur.

MANGUIN, P.-Y. 1991a. The Merchant and the King: Political Myths of Southeast Asian Coastal Polities. *Indonesia*, 52, 41-54.

MANGUIN, P.-Y. 1991b. The Merchant and the King: Political Myths of Southeast Asian Coastal Polities. *Indonesia*, 52, 41-54.

MANGUIN, P.-Y. 2002. The amorphous nature of coastal polities insular Southeast Asia: Restricted centers, extended peripheries. *Moussons*, 5, 26.

NICHOLL, R. 1983. Brunei Rediscovered: A Survey of Early Times. *Journal of Southeast Asian Studies*, 14, 32-45.

O'CONNOR, R. A. 1983. *A theory of indigenous Southeast Asian urbanism*, Singapore, Institute of Southeast Asian Studies.

PIGAFETTA, A. & CACHEY, T. J. 2007. *The first voyage around the world*, 1519-1522 : *an account of Magellan's expedition*, Toronto, University of Toronto Press.

REID, A. 1980. The Structure of Cities in Southeast Asia, Fifteenth to Seventeenth Centuries. *Journal of Southeast Asian Studies*, 11, 235-250.

SAINT JOHN, S. B. 1863. *Life in the forests of the far east* 2 [...], London, Smith, Elder u.a.

SAUNDERS, G. E. 1994. *A history of Brunei, Kuala Lumpur*; New York, Oxford University Press.

TAGLIACOZZO, E. 2007. An Urban Ocean: Notes on the Historical Evolution of Coastal Cities in Greater Southeast Asia. *Journal of Urban History*, 33, 911-932.

WEBER, M. 1966. *The city*, Free Press of Glencoe : Collier-Macmillan.

WHEATLEY, P. 1971. *The pivot of the four quarters; a preliminary enquiry into the origins and character of the ancient Chinese city*, Chicago, Aldine Pub. Co.

WIDODO, J. 2004. *The boat and the city : Chinese diaspora and the architecture of Southeast Asian coastal cities*, Singapore, Chinese Heritage Centre : Marshall Cavendish Academic.

WINSTEDT, R. O., MAXWELL, W. E. & WILKINSON, R. J. 1934. A history of Perak. M.B.R.A.S. , 12, 160.

WINZELER, R. L. 1976. Ecology, Culture, Social Organization, and State Formation in Southeast Asia [and Comments and Reply]. *Current Anthropology*, 17, 623-640.

Antonello Monsù Scolaro, Giamila Quattrone

Abstract

The genius loci of vernacular architecture allows one to understand the intimate relationship which folk buildings establish with the site by responding to local environmental conditions[1] . In its numberless expressions, vernacular architecture is strongly characterized by technical aspects, related to the community's material culture and socio-cultural evolution, and typological aspects, which very diverse buildings share in relation to spatial and functional organization and dwelling patterns. It is widely agreed that, to understand vernacular architecture, one must not prescind from the understanding of traditional construction techniques and building materials, and analysis of typological features. Typology, in fact, responds to the environmental and climatic features of place, economy, culture, local availability of resources and construction techniques, which have developed within local craftsmanship (Kelbaugh, 1990).

The present need for preservation of architectural heritage calls for reflection on the dwelling opportunities that some vernacular rural building types could still provide. Once closely related to the agro-pastoral life and economy, they may still be able to provide high-quality life standards.

By focusing on a case study of a "courtyard house" of Southern Sardinia, this paper attempts to test whether, and with which technological and typological adjustments, this typology can meet contemporary dwelling needs as well as current technical and environmental requirements.

The paper presents ongoing research which puts forward a hypothesis for the renovation of "Casa Demurtas", in Escolca, and proposes a methodology that considers construction and typology as possible keys to the reading of the building, in order to re-establish the lost connection between architectural making, materials manufacturing and building techniques development. The final goal is to assess the method's validity for its prospective application to other local contexts.

Keywords: *Construction, Typology, Courtyard house, Environmental and technical performance renovation*

[1] *Norberg-Schulz, C., 2000. Architecture: Presence, Language, Place. Milano: Skira.*

Introduction

Vernacular architecture is characterised by "technical aspects", connected with the technical and material culture of local communities, as well as by "typological configurations", which derive from people's life and work patterns.

Construction and typology of vernacular architecture are almost always consistent with the cultural tradition and the place: a sensitive yet contrasting dialogue, which is always nature and landscape sensitive[2].

Historic dwelling patterns inform our present: elements of the past are transformed and projected towards new dwelling modes.

Traditional buildings of Sardinia meet Caruso's definition of vernacular architecture (1999): they are a product of a construction act, they do not concern appearance but presence, they show themselves as artefacts containing the traces of the social and technological context, slowly but continuously evolving, where they are produced. These are the guiding principles of our research and methodological proposal for the adaptive reuse of traditional buildings. In Sardinia as all over the world they require a sensitive interpretational approach, which does not produce "genetically modified organisms", but rather "genetically evolved organisms".

Traditional rural domestic architecture in Sardinia

Expression of a relationship with the place

In the 12th century, an evolution of the relationship between the lords and the populace determined life and work conditions in the fields. These conditions underlay the settlement and transformation patterns that led to the farming landscape of Sardinia. Gradually, the people settled and constructed houses - initially isolated, later in blocks - which allowed them to inhabit the hinterland and gave birth to villages [3].

The size and typology of the buildings was dependent on the work activities of the family and on the possibility, granted by the lords, to extend the house in order to accommodate agricultural produce and farm animals. For this reason stables, barns, gardens and courtyards have appeared next to domestic spaces. The interplay of these factors produced, in Sardinia, many different architectural typologies, which have responded for decades to a "complex" land (both from a morphological and socio-cultural perspective) by dividing it in "historic regions".

Three main classes of typologies have been identified according to morphological conditions, settlement patterns and availability of raw materials: a) the "courtyard house" of the cereal regions of Southern Sardinia; b) the "multi-storey cellular house" of the mountainous farming regions of Central-Eastern Sardinia; and c) the "basic cellular house" of Northern Sardinia, which features different heights, depths and internal layouts (Sanna et al,2008, p.2).

[2] *Rapoport, A., 1969. House form and culture. Englewood Cliffs, N.J.: Prentice-Hall, Inc.*

Marmilla, the historic region we are focusing on, is confined by Sarcidano's limestone rock to north, Mount Arci to the east, and Mount Trempu and the sloping basalt flow of Giara di Gestori to the west (Baldacci, 1952, p.90).
The entire area, characterised by gentle hilly valleys, alternating with low mountains, lends itself to cereal crops, tree planting and sheep-farming, so favouring the settlement and development of the "cereal courtyard house".
The walls of the building and the courtyard are built out of resistant local stone (limestone, marlstone, basalt, trachyte), allowing for the construction of up to two storeys, and are provided with several windows in order to catch as much sunlight as possible, especially in the uplands.
The building is nearly always located to the north border of the enclosure, of which it is an integral part, in order to allow visual control inside and outside.
The building has usually two courtyards: a "public courtyard" facing the street, surrounded by the different spaces of the house, is a sheltered meeting and work space, where agricultural and sheep-farming products are stored and processed; and a "private courtyard" at the back is used as a garden.
The courtyard's enclosure is a tall wall with a big street door lined with the porch. The door is the only decorated element of the complex, with its construction date engraved on it.
The porch, which is called "sa lolla" in the local dialect, has less and narrower arcades than in Campidano, where it is very common. Sometimes the porch consists of one arch and works as a corridor; sometimes it works as a buffer zone which shades from the southern sunlight and mediates the transition between the building and the courtyard.
The kitchen is the largest and most used space of the house. It is usually located in the right part of the building, which faces east, in order to catch the cold winds coming from Mount Gennargentu. It can be entered from the courtyard and can accommodate different functions, including use as a servants' bedroom.
The upper floor is normally used as a storage, but can also be used as a bedroom if the family is large. A masonry staircase, under the porch, or alternatively a lightweight wood and reed staircase inside leads upstairs.

The case study

Historic, social and cultural aspects

Populated in the past by villages, which today are archaeological ruins, the land still maintains its original morphological characteristics.
Presently, like most of the villages in Central-Southern Sardinia, the municipality of Escolca suffers from continuing depopulation. This is due to a lack of job opportunities and inefficient links to the nearby city of Cagliari[4].
Paradoxically, despite the high living standards provided by the local natural environment and landscape, young people are pushed to look for a job somewhere else. The villagers abandon the country and "take refuge" in the built-up areas.

[3] *For a full understanding of the relationship between settlement cultures, urban development and urban governance refer to F. Clemente's writings and, in particular, to Clemente, F., 1968. Per una metodologia di interpretazione dello spazio fisico come spazio sociale. Città e Società, 3, pp.8-11.*

[4] *Brigaglia, M. & Tola, S. eds., 2007. Dizionario storico-geografico dei Comuni della Sardegna. Volume 2 "E-L". Sassari: Carlo Delfino Editore.*

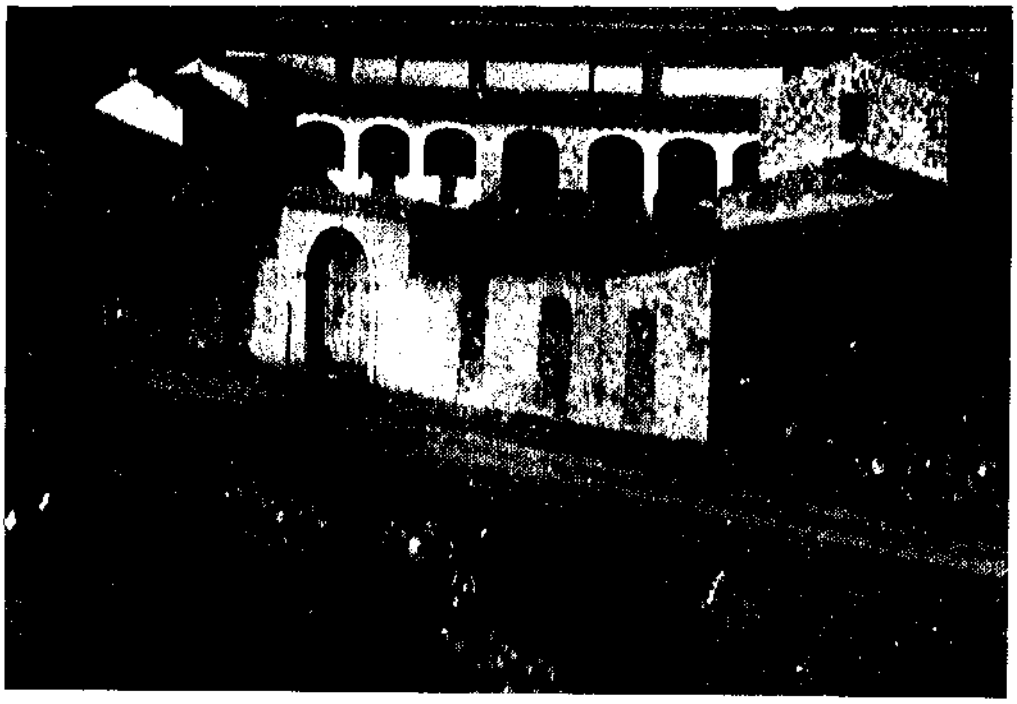


Fig.1: the building complex in the early 20th century (photo: De Murtas archive)

Typomorphological analysis

Casa De Murtas, located in Escolca's historic centre in Southern Sardinia, is a typical example of traditional architecture of the Marmilla-Sarcidano region.

The building was originally built with a "public" courtyard in the main front, which was entered through a big street door in the enclosing wall, and a rural "private" courtyard, at the back, which was reached through a large passageway in the northern part of the enclosure (Figure 1).

The main block, which was the owner's residence and dates back to 1912, occupies the north side of the courtyard. It is a long building with an adjoining porch, which previously acted as a circulation space between the various rooms on the ground floor. The adjacent spaces were used for production, as servants' rooms or as storage for tools and animals (Caniggia, 1979).

During recent years new needs have introduced new uses: after the division, the north block became a stable, while the east block was turned into the living quarters. This preserved the kitchen and the storage on the ground floor (keeping with the original typology) and accommodated the bedrooms on the upper floor[5].

The walling of the courtyard, which reflects the typological definition of the complex as well as the identity and ownership of the family, was erected after the construction of the first building, in 1925, as the street door inscription attests. Later, the courtyard was subdivided into two distinct properties: the eastern block remained unchanged, while the western block was completely demolished and rebuilt in a modern fashion. However, it is still possible to detect traces of the block demolished.

Technological performance analysis: materials and construction techniques

The building elements and materials constitute a framework of technological performance, and should be taken as the starting point for any performance renovation proposal[6]. The arrangement and orientation of the blocks, which are single detached units, respond to sunlight and prevailing winds. The masonry thickness and construction depend on the

[5] *Bertoldini, M., 1996. La cultura materiale e lo spazio costruito. Milano: Franco Angeli.*

[6] *Molinari, C., 2006. Elementi di cultura tecnica. Napoli: Edizioni Sistemi Editoriali.*

materials available on site: stone, timber, lime, clay[7] . The span between opposite walls is constrained by the section of the floor timber beams. The span has imposed the adoption of "Palladian" timber trusses to support the roof (Rondelet, 1831).
Most of the windows open onto the courtyard (to the south) being almost absent from the north-facing wall; on this side, in fact, the building needs to be protected from the cold, and there is no need for visual control of the backyard.
The walls of the house block are rendered in lime and clay.
The courtyard's floor, which extends into the buildings, is made of small stones laid on a soil bed[8] , according to the traditional "*imperdau*" technique.
The buildings' floors are made of timber beams and planks.
The structure coincides with the building envelope and the foundation and walls are built out of different size limestone blocks (with minor content in clay and marl), bonded with lime.
Partitions are made of stone masonry on the ground floor, and of reed mats, reinforced with wool fibres and rendered in lime and earth, on the first floor[9] .
The roof is in timber and consists of rafters and battens, which support a reed mat covered in lime-based screed. Clay tiles are laid on that in the "Sardinian fashion", though some have been replaced by flat "Marseillaise" tiles.
Inside, the space is measured on the dweller's activities and functions; outside, on the contrary, it depends on the building's representation and identification role[10] . The relationship with the *physical environment*, the *material culture* and *the socio-cultural structure* of its regional context is analyzed here according to a methodological framework consisting of a threefold interpretation of architectural regionalism: *Environmental Regionalism, Technological Regionalism, Typomorphological Regionalism*[11] .
Based on the three facets of regionalism is the analysis of the case study (Figure 2), which aims at visualizing its simultaneous *environmental, technological* and *cultural appropriateness* for the context.

The framework of change: issues related to "re-inhabiting"

Inspiring principles

The renovation goal is the "re-inhabiting" of the building, which can only take place if job opportunities are created which are connected

[7] *Achenza, M., Sanna, A., 1999. Abitare la terra. Atti del Convegno Villamassargia-Samassi 12-15 novembre 1998. Cagliari: Edizioni CUEC.*

[8] *See Carbonara, G., 1996. Trattato di restauro architettonico, Volume 2. Torino: Edizioni UTET, p.249).*

[9] *See standard UNI 8290-1:1981, "Edilizia residenziale. Sistema tecnologico. Classificazione e terminologia", and UNI 8290-2:1983 "Edilizia residenziale. Sistema tecnologico. Analisi dei requisiti"*

[10] *Oliver, P. 2006. Built to meet needs. Cultural issues in vernacular architecture. Burlington, Ma: Elsevier.*

[11] *This analytical-interpretational methodology has been proposed by Giamila Quattrone for the investigation of the regionalist features of a building in her PhD Thesis The relationship between dwelling patterns and appropriate technologies for regionalist contemporary architecture. From contemporary Australian design experience to the proposal for a metadesign tool in the Mediterranean area, supervisors Prof. Adriano Paolella, Prof. Consuelo Nava, Prof. Michael J. Ostwald, Università degli Studi Mediterranea di Reggio Calabria, DASTEC Department, 2008.*

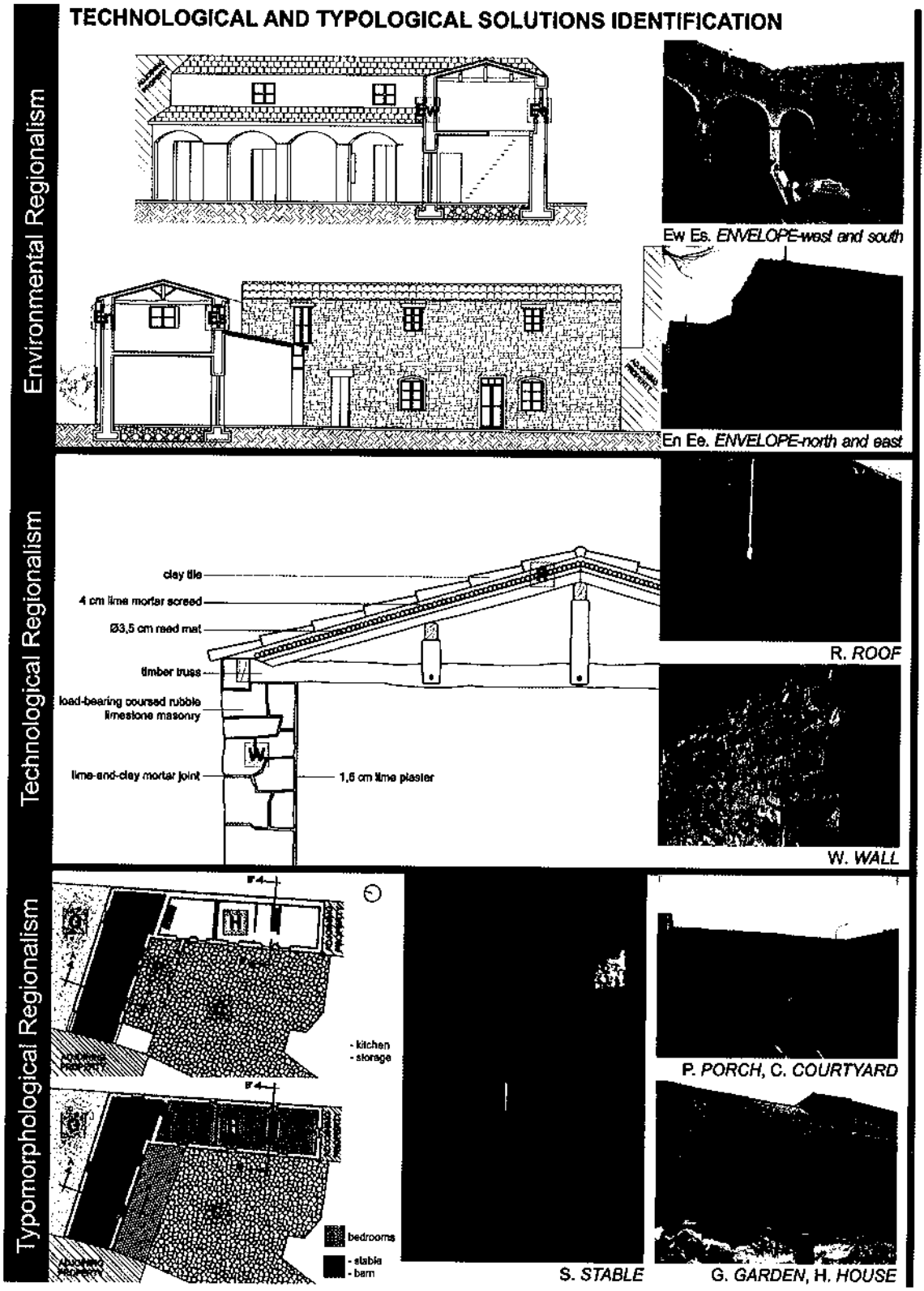


Fig.2: analysis panel of the regionalist features of Casa De Murtas, based on the methodological framework proposed (drawings: G. Quattrone, photos: A. Monsù Scolaro)

[12]See www.sardegnafilieracorta.com.

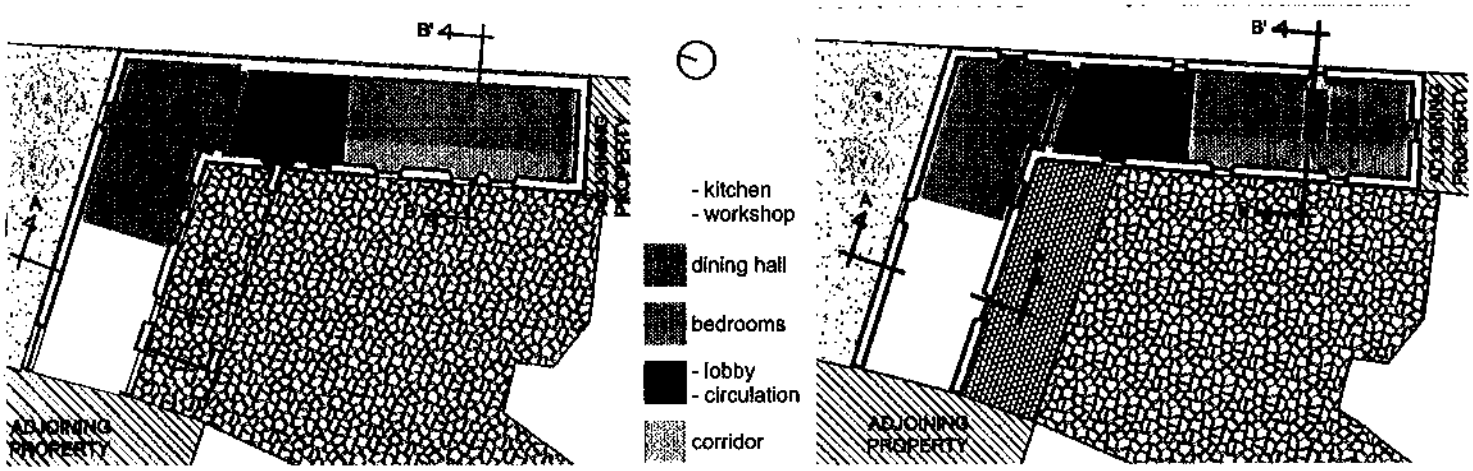


Fig.3: hypothesis of adaptive reuse: layout of the new space arrangement (drawings by G. Quattrone)

with and respectful of the peculiarity of these places: agriculture and produce processing.
Produce could be eaten on site and marketed within a few kilometre radius, which would preserve their basic organoleptic properties[12] .

Typological and climatic issues

The Mediterranean courtyard house has always performed well in relation to thermal comfort, thanks to the natural ventilation which its typological arrangement promotes. As explained by Egyptian architect Hassan Fahty (2000, p.51), with reference to Islamic courtyard houses, the courtyard space works as a temperature regulator: during the night cool air settles on the bottom of the ground floor and enters the surrounding rooms, cooling down the walls, the roof, the floor and the fittings.
Enclosed by the external walls of the building, the courtyard remains cool until late in the afternoon. The cooling effect of the courtyard is maximised by cross ventilation, with air flowing through facing windows and doors.
The thermal mass contained in the stone load-bearing walls helps delay thermal flows and losses, thus keeping the interiors cool and warm when required.
The porch works as a buffer area: it protects the south-facing wall from direct sunlight and provides the dwellers with a sheltered yet open space.

Technological issues

The performance renovation, on the one hand, retains the building's original typological, morphological and technical features, on the other hand, introduces experimental design solutions, which innovate the original construction by employing locally available materials[13] . The renovated building has to meet the demands of present-day living. This implies an assessment of the physical-chemical compatibility of techniques and materials[14] , and of the visual, textural and chromatic integration of the building with the landscape.

Methodological profile for an experimental reuse of Casa De Murtas

Typological adaptation, climatic aspects and new living needs Turning the house into a farm, and offering local produce as well as holiday accommodation, could prove as a feasible way to give the building new life through a modern

[13] *Sinopoli, N. & Tatano, V. eds., 2002. Sulle tracce dell'innovazione. Tra tecniche e architettura. Milano: Franco Angeli.*

[14] *Germanà, M. L., 2002. Significati dell'affidabilità negli interventi conservativi. In: A. Sposito, ed. 2004. La conservazione affidabile per il patrimonio architettonico. Atti della Tavola Rotonda Internazionale, Palermo 27-28 settembre 2002. Palermo: Dario Flaccovio Editore, pp.24-31.*

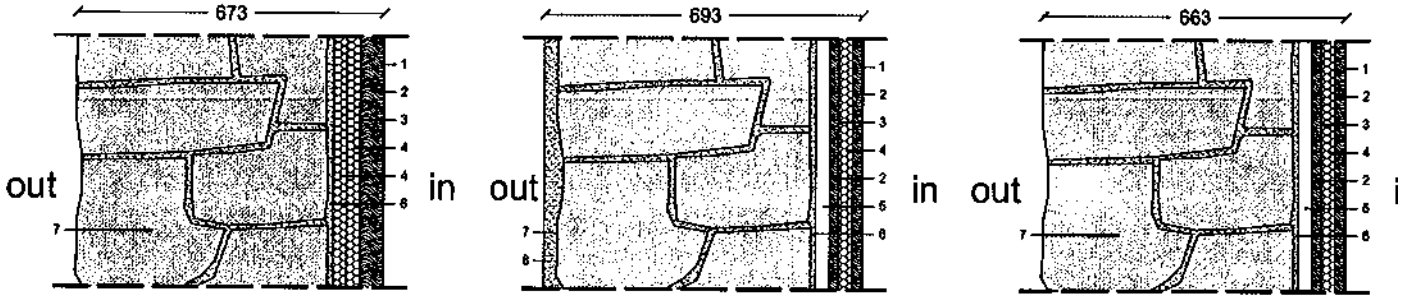


Fig.4: 1:20 section of the north (left), south (middle), west (right) wall
(drawings: G. Quattrone)

1. *3 mm lime-based plaster, specific for humid walls*
2. *20 mm (south wall) and 50 mm (north wall) wool wood board*
3. *30 mm wool mat*
4. *PE vapour barrier*
5. *30 mm air gap obtained by means of a cork oak studwork*
6. *10 mm NHL 3,5 finishing, specific for humid walls*
7. *550 mm limestone existing wall*
8. *30 mm NHL 3,5 finishing, specific for humid walls*

ENERGY PERFORMANCES

(testing done through Termolog Lt)

NORTH WALL: 673 mm
thermal transmittance: 0,3191 W/m²K
interstitial condensation: 0,0234 Kg/m² (max value)
SOUTH WALL: 693 mm
thermal transmittance: 0,2986 W/m²K
interstitial condensation: 0,0376 Kg/m² (max value)
WEST WALL: 663 mm
thermal transmittance: 0,3044 W/m²K
interstitial condensation: 0,0380 Kg/m² (max value)
ROOF: approx. 375 mm

mixed use. The adaptation of the building to the new use involves the development of a visitors' domain and a managers' domain. The former, which would include the sleeping spaces, could be accommodated in the house block; the latter, which would include the cooking and dining spaces, could be accommodated in the stable block. The junction room, which contains the staircase, could become a lobby and circulation space.
The new layout would be based on a climatically correct orientation (Figure 3):

1. the bedrooms would face east, thus benefiting from the morning sun;

2. a west-facing corridor, running along the house block and overlooking the courtyard, would let the sun in during the afternoon;

3. the workshop for produce processing would occupy the west end of the property, on the ground floor, providing access to the garden through the existing arched door, and benefiting from the shade of the attached porch and the adjoining property, thus preserving the produce;

4. the kitchen would be to the same end of the building, on the upper floor, benefiting from the southern sunlight and the view of the courtyard;

5. the dining hall would occupy both floors, at the east end of the stable block, providing access to the courtyard and sunlight.

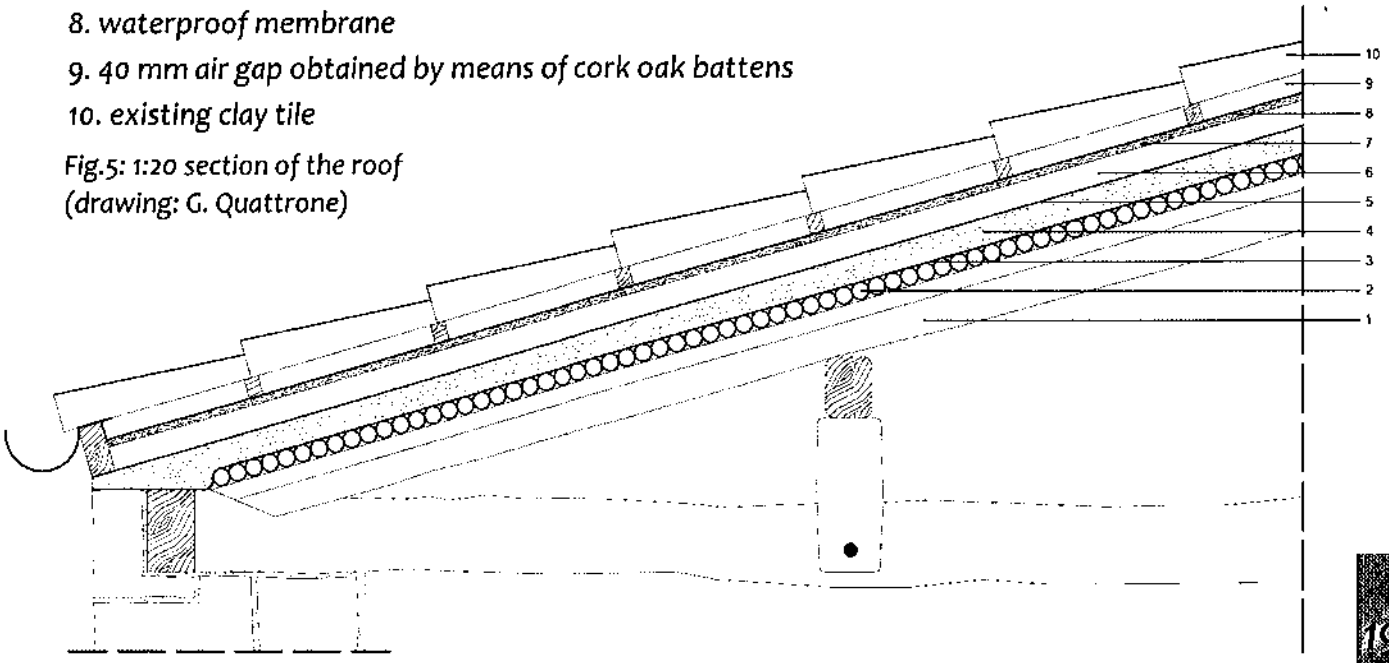
[15] *See the manufacturers' websites www.edilana.com, www.calcidrata.com, www.tassullo.com, www.tettoproject.it.*

Operational technical tools: testing of the building elements' performance

The new space arrangement would require upgrading of the building envelope in accordance with the new interior space orientation.
The design has the goal of making the building envelope more energy efficient, by complying with the requirements provided by the latest Italian regulation on energy efficiency and saving (Dlgs 311/2006 and DPR 59/2009).
The construction of three walls (Figure 4) and the roof (Figure 5) is redesigned by employing local natural, recyclable and recycled materials: wool insulating mats, cork oak studs and battens, natural hydrated lime mortar for plaster and screed, OSB boards and wood wool boards[15].
These materials have been tested using the software Termolog LT and have performed well under the restrictions imposed by the aforementioned regulations. Concerning the walls: the *thermal transmittance* is lower then the maximum value permitted for buildings located, as in our case study, in areas climatically classified as "D" (U max=0,324 W/m²K); the *interstitial condensation*, which reaches its peak in February, has acceptable values, and there is no *superficial condensation*; the *superficial mass* is higher than the minimum value permitted (SM min=230 Kg/m2).
Concerning the roof: the *thermal transmittance* is lower than the maximum value permitted for buildings located (U max=0,228 W/m²K); there is no *interstitial condensation* or *superficial condensation*, and the *superficial mass* is higher than the minimum value permitted (SM

1. *existing timber truss*
2. *35 mm existing reed mat*
3. *PVC vapour barrier*
4. *55 mm NHL 3,5 fibre-reinforced screed*
5. *PE non woven fabric*
6. *50 mm air gap obtained by means of cork oak battens*
7. *15 mm OSB board, lined with reflective aluminium foil*
8. *waterproof membrane*
9. *40 mm air gap obtained by means of cork oak battens*
10. *existing clay tile*

Fig.5: 1:20 section of the roof (drawing: G. Quattrone)



min=230 Kg/m2).

Conclusions

We have described a methodology used to assess the technical feasibility of the adaptive reuse of traditional rural architecture in a low density population region, and have tested to what extent it can be adapted to contemporary uses.

A socio-economic feasibility study, however, should be done to sustain the re-inhabitation plan. This research infers that, on the technological and environmental side, we could realistically apply it, with further adjustments, to other geographic areas and socio-cultural contexts, in an attempt to re-establish the relationship between man and his environment.

Acknowledgements

The paper focuses on issues that are currently being investigated within Laboratorio TRA at DADU Department and ABITAlab at DASTEC Department, where the authors carry out their research activities.

Bibliography

Baldacci, O., 1952. *La casa rurale in Sardegna*. Firenze: Edizioni Centro di Studi per la Geografia Etnologica.

Caniggia, G., Maffei, G. L., 1979. *Composizione architettonica e tipologia edilizia*. Venezia: Marsilio Editori.

Caruso, A., 1999. The feeling of things. A+T, 13, pp.48-51.

Fahty, H., 2000. La casa araba nell'ambiente urbano: passato, presente e futuro. *Casabella*, 680.

Kelbaugh, D., 1990. Verso un'architettura del luogo. In: S. Los, ed. *Regionalismo dell'architettura*. Padova: Franco Muzzio & C. Editore, pp.104-105.

Rapoport, A., 1969. *House form and culture*. Englewood Cliffs, N.J.: Prentice-Hall, Inc.

Rondelet, J., 1831-1835. *Trattato teorico e pratico dell'arte di edificare*. Translated from French by B. Soresina. Mantova: Tip. Caranenti.

Sanna, A. et al., 2008. *Atlante delle culture abitative e costruttive della Sardegna*. Roma: Edizioni DEI.

NEW MACHINE VERNACULAR: REMOTE BUILDING DEVICES, DIGITAL/CULTURAL ACCOMMODATION, AND TECHNOLOGY'S RENEWED HUMANITARIAN AGENDA

Marcus Shaffer

Abstract

Contemporary advancements in mobile technologies and computer-aided fabrication systems have signaled the plausibility of remote construction devices in our near future. Semi-autonomous building-making machines capable of quickly (and continuously) erecting housing, architecturally dependent micro economies, and emergency urbanisms, represent our enormous technological potential to better the lives of an estimated 33 million people currently living in I.D.P. status around the world. In addition to homes and livelihoods, Tectonic Machines, as digital-mechanical extensions of our human sensibilities with regards to building, might also address the cultural and communal alienation of camp-bound I.D.P.s through extreme accommodation in producing vernacular forms and building types. In fact, the success of these humanitarian-centric machines will not be measured through an accounting of their industrial efficiency, but by their variable capabilities towards recreating aesthetically relevant replacement communities to carry functioning cultural systems and temporary economies, rather than mere logistics-based holding camps. These new machine's sensing, "informed", communicative, and freed from subjugation to the assembly line, must be devised to communally design and deliver a great variety of architectural forms that are environmentally fit, culturally accommodating, and spontaneously familiar (not necessarily new), in their appropriateness. In this scenario of techno-environmental mediation, a whole range of future vernaculars might evolve and develop as a comingling of old traditions and state-of-the-art machineries, local materials and global technologies, community-generated instinct and experienced formal practices.

In addition to these topics, this paper will report on the development of a specific Tectonic Machine currently being designed for use in humanitarian relief situations and of the essential role vernacular accommodation plays in that development. This project has evolved from a digitally controlled casting system into something with the character and capabilities of a robotic collaborator or construction probe that learns, informs, and evolves design and construction in dialogue/partnership with architects and displaced communities.

Keywords: *Tectonic Machines, Technology transfer, Remote construction devices, Mechanical vernacular*

Introduction

Current advancements in mobile technologies and computer-aided fabrication systems have signaled the plausibility of remotely operated construction devices in the near future. Semi-autonomous building-making machines capable of quickly erecting and modifying resettlement housing, architecturally dependent micro economies, and perhaps even "emergency cities", represent our enormous technological potential to better the lives of millions of people living in Internally Displaced Person status around the world. In addition to erecting semi permanent housing and the architectural infrastructure of livelihoods, Tectonic Machines, as digital-mechanical extensions of our human sensibilities with regards to building, might also address the cultural and communal alienation of camp-bound IDPs through extreme accommodation in producing vernacular forms and culturally familiar building types. As "humanitarian aid" or SSTR (stability, security, transition, and reconstruction) missions increasingly involve more technologically-capable proponents servicing more technologically adept populations, the success of the architecture machines we design should not be gauged by the standards of old--through an accounting of their efficiency in producing mere logistics-based holding camps. The success and use of these "new machines" should be measured by their variable capabilities towards recreating aesthetically relevant forms and culturally accommodating replacement communities capable of supporting functioning social systems and economies. These new humanitarian machines will take advantage of Information Age technologies—sensing, "informed", and digitally equipped to "remember", transmit and reproduce building information and traditions. They would ideally be devised to communally design and deliver a great variety of vernacular forms that are environmentally resourceful, and spontaneously familiar (not necessarily new) in their appropriateness. In this future scenario of techno-environmental mediation, a whole range of new vernacular developments might evolve as a comingling of old traditions and communal machineries, local materials and global architectural technologies, community-generated building instincts and professionally experienced formal practices.

In addition to these topics, this paper will briefly report on the development of a hypothetical Tectonic Machine currently being designed as a construction process for use in humanitarian relief situations—and of the essential role vernacular accommodation plays in that development. This project has evolved from a digitally controlled form work/false work system into something with the potential of a robotic construction probe that transmits, informs, and evolves design and construction in dialogue with architects and displaced communities.

An Urgent Need for New Mobile/Remote Architectural Technologies

"The only way the new can be created is from deep with precise conditions existing in the

present. The architect must become, more than ever before, a creature of the present, fusing all that is remembered and all that is dreamt within it, as though existence itself were hanging in the balance (Woods, 1997)."

During the Industrial Age, the field of architecture was culturally responsible for making connections between modern society's technology use, and the potential impact of these technologies on/in the built environment (Banham, 1960). In the post-industrialized Information Age, we now live in a heightened techno-cultural climate where the digital dialogue between intelligent human, computational, and mechanical systems provides the basis of routine living and makes extraordinary achievement possible—from the connectivity of the World Wide Web to our extended exploration of distant planets. Even for those living in the so-called "developing world", common handheld technologies—the ubiquitous mobile telephone—can easily transmit and accommodate extended audio and visual experiences that are technologically gathered and beamed home via satellite from the farthest reaches of our planet. Technologically, extreme virtual presence and physical mobility on a global scale through means both digital and mechanical are very advanced and reliable, readily available, and increasingly inexpensive (Tech Mission, 2009).

In contrast with the Machine Age, the Information Age is producing smaller, highly sophisticated "personal" technologies that are finding their way home into mud brick and cadjan houses throughout the developing world. These devices in turn, are creating cross-cultural generations of globally connected and digitally inventive technology users who are less restricted by former economic, political, and social barriers. Professional architecture as practiced in the West is taking advantage of this barrier-free digital know-how in developing nations like India and China, by "outsourcing" drafting, estimations, structural engineering, and 3D modeling responsibilities (O21, 2010). The "remote architects" who provide these services/skills are often returning home to traditionally built houses at the end of the working day. If future scenarios permit us some degree of speculation, perhaps the architectural opportunities of the age lay somewhere in the potent mix of new form-making technologies/hardware, increasingly sophisticated technological skills carried by developing world workers, and the correspondingly "primitive" shelter technologies that constitute their familiar living/working environments?

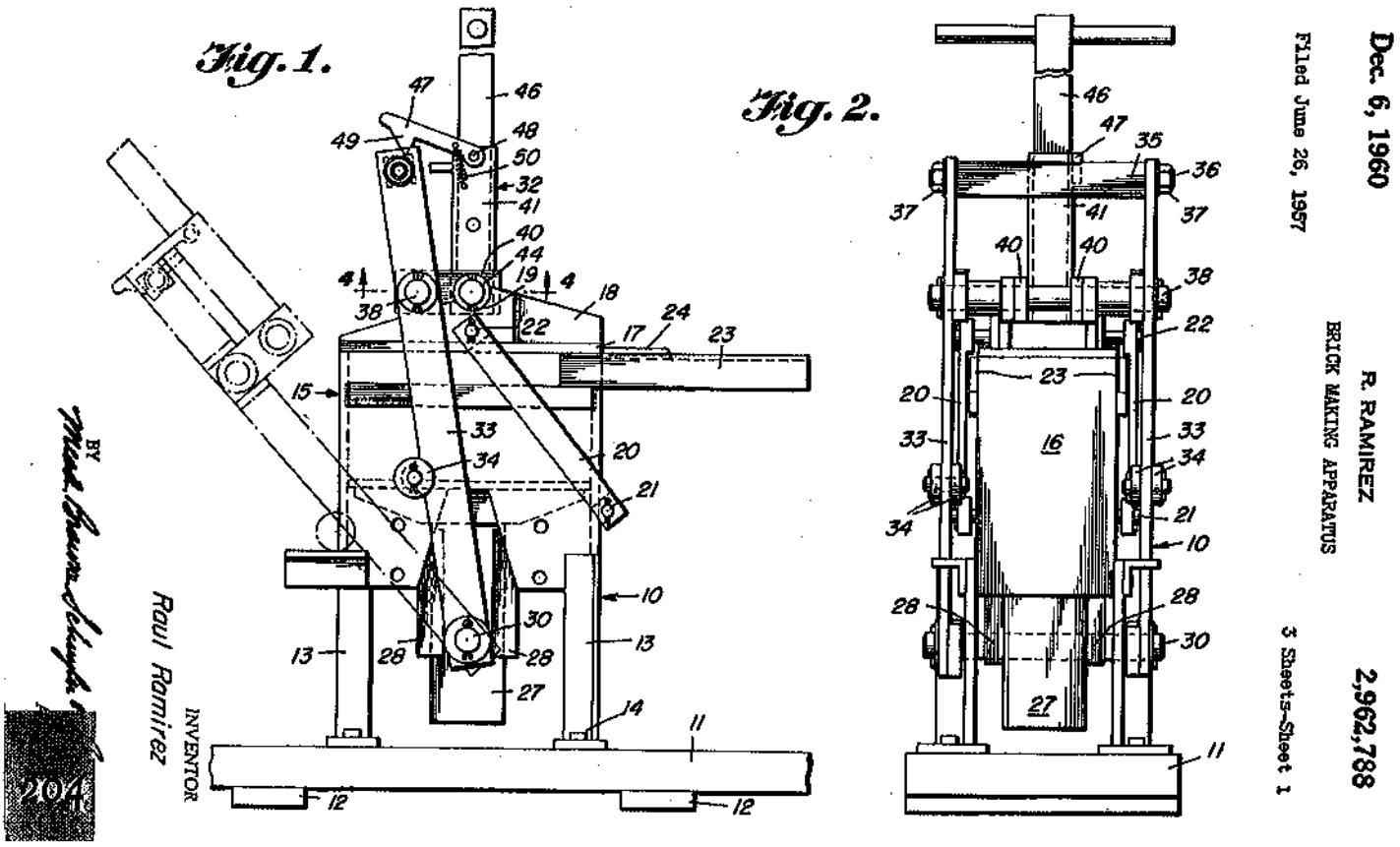
One manner in which we might take advantage of this shifting technological landscape is in confronting the increasing displacement of people around the world due to wars and natural disasters. Despite our technological sophistication, we also live in a world where an estimated 26 million people (according to the IDCM: The Internal Displacement Monitoring Centre) exist in a desperate state of forced physical, cultural, and political instability as refugees or Internally Displaced Persons. One need only imagine a dispersed and/or homeless population greater than that of present day Metro-Tokyo living without the physical provisions (protection, storage, intimacy, privacy, etc.) and cultural benefits of architecture (public safety, addresses for social/economic functions) in order to understand the severity of this situation. This growing population, in both developed and

developing nations (think educated professionals, not farmers), and the unacceptable nature of their living conditions demands our attention... their displacement is a global humanitarian emergency that will easily employ a multitude of new/improved methods of intervention working towards a variety of solutions.

Addressing the complexities of post-disaster relief and/or forced mass migration with user-friendly, cross-cultural, "high" technologies can be critiqued as a lofty, expensive, and time-consuming goal—but generations of people born, raised, and "confined" in deplorable permanent/temporary conditions literally constructed of half-measures truly deserve a greater variety of attempted solutions (the average length of stay for IDP camp residents is 17 years—roughly the same amount of time it took industries to make cell phones and personal computers ubiquitous around the world). Presently, one thing is certain—neither the sheltering methods and efficiency-related technologies associated with Government or N.G.O. (Non-government Organization) relief, nor the relatively slow pace of conventionally practiced "professional" architecture can adequately respond to an urgent need for architecture on the scale of city-making (Lewis, 2008).

If we are to offer IDPs sustainable lives and livelihoods through sensitive resettlement rather than logistical holding and external organizational dependency, potential solutions to "well articulated needs" lay in taking advantage of both new technologies and familiar traditions/vernacular (Davis, 2006). The reality of creating the required "Exigent Cities" for these IDP populations practically exists in novel hybrids of the best forms of organizational deployment

Figure.1: US Patent drawings for CINVA RAM Block Press.



capabilities and hardware, information age construction processes, and local building traditions and material employment (Lewis, 2008). Perhaps one way of placing this discussion (and expectations) on a more fundamental level is to begin by talking about Industrial Age Tectonic Machines and form-making processes already in use in resettlement environments, in order to learn how they might better inform the Tectonic Machines of the Information Age.

New Architecture Machines *for the* People

A critical factor in devising deployable construction technologies that are capable of re/creating vernacular forms lies in engaging and serving the "recipient" of these machines/technologies. In his 2003 essay entitled "Technology Transfer: A Vernacular View", Paul Oliver advises,

> Technology transfer that facilitates the solution of a problem confronting a culture could be undertaken, but not with the intention of achieving an objective that satisfies, favours, or benefits the transmitting technologists rather than the recipients. The need for technological change or modification must be recognized and preferably expressed by the recipient culture with whom, and with whose indigenous knowledge, any changes may be introduced.

The fact that these technologies must be developed with IDPs in mind, and then given over to the populations who will use them is critical to their success, with autonomy and control being especially important in evolving camps into resettlement communities (Hailey 2009). In his 2006 article, Sheltering from Extreme Hazards, Ian Davis suggests that designers focus on process-based strategies for rebuilding that involve and employ recipient's skills/traditions/desires, rather than product-based solutions (instant houses, pods, etc.). One example of a technological transfer success from the Industrial Age that is of particular interest to me is the manual block press. Attributed to Francois Cointeraux in the 18th Century, this Tectonic Machine and its various incarnations, including the CINVA RAM Press (Fig. 01), is still being used, adapted/altered, and manufactured in developing nations today. What is noteworthy about this technology is that these presses have truly become of and for the people. They are easy to fabricate, relatively mobile, widely available (employed in Asia, Africa, and the Americas), and they can be used at various economies to make both earthen and concrete block. Additionally, the block, as a basic construction unit, allows for all manner of construction—practical and expressive, new, emulative and/or traditional. This packaged/deliverable process, with construction quality block rather than finished structures/shelters as the end product, relies upon user needs, input, and work ethic to realize actual constructions. In this manner, these Tectonic Machines engage the recipient and are capable of all variety of architectures based upon the user's manual skills and desires. On a recent trip through northern Sri Lanka, I met a tuk-tuk driver who was using a communally owned block press to build a house for his family (Fig. 02). When I asked

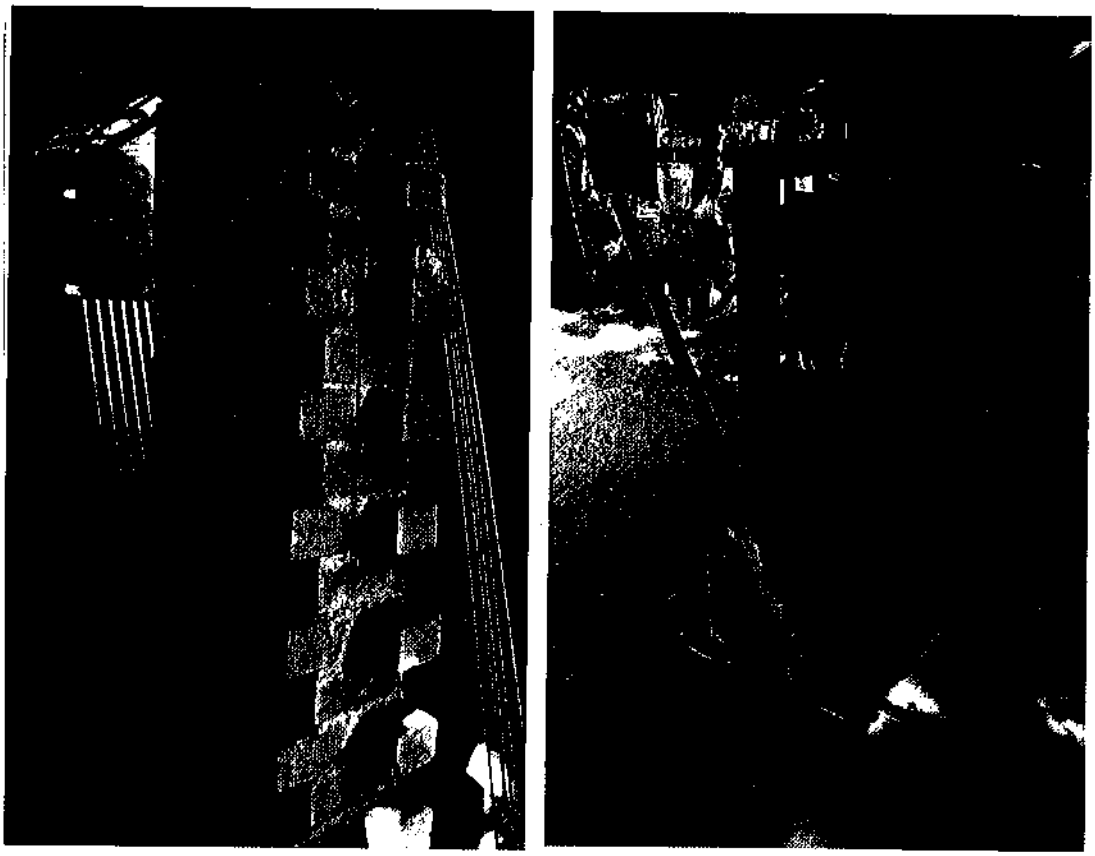


Figure 2: Manual concrete block press communally used in Puttalam, Sri Lanka, and resultant construction. Photographs by the author.

why he had chosen this material (concrete) and technology (the block press) from the wide variety of traditions common to this area—including cadjan, mud brick, wattle and daub—he replied that his social status would be effected by employing "Westernized" technologies and materials, and adopting a "Westernized" house type/plan. In fact my acquaintance, Mr. Kumar, had rejected local low-tech traditions in favor of Western emulation and machine technology related to his three years of experience in Dubai working in a high-rise modernist hotel. What I consider to be most informative with regards to my research is his acceptance and inventive use of the block press as a piece of interventionist architectural technology, and the fact that the press was communally owned, housed, and maintained by the population who used it. As far as shortcomings are concerned, this Tectonic Machine has several that might be improved upon with Information Age enhancements or alternatives. While all types and shape of block have been developed using the manual block press: interlocking blocks, hollow-core blocks, gutter blocks, pavers, etc., it is less obvious that the block press automatically or intuitively contributes to the sustenance of vernacular traditions (especially those that do not employ block). Extending this critique, there is very little that is automatic about the press—one needs to employ oneself physically at making many blocks before building a structure, and neither machine/press nor the blocks themselves transmit specific buildings or building traditions to the next or future user. In addition to being laborious, the process of making houses using the press-made blocks is also relatively slow, requiring significant time commitment and material investment. In conclusion, speed, automation, and transmittable "memory" are all qualities that might better adapt Tectonic Machines of the Information Age to the task of constructing culturally sensitive resettlement communities. Transmittable "memory" connected to the workings of the machine might also giving recipients who are ill, weak, hurt, or unskilled a means of choice in rebuilding.

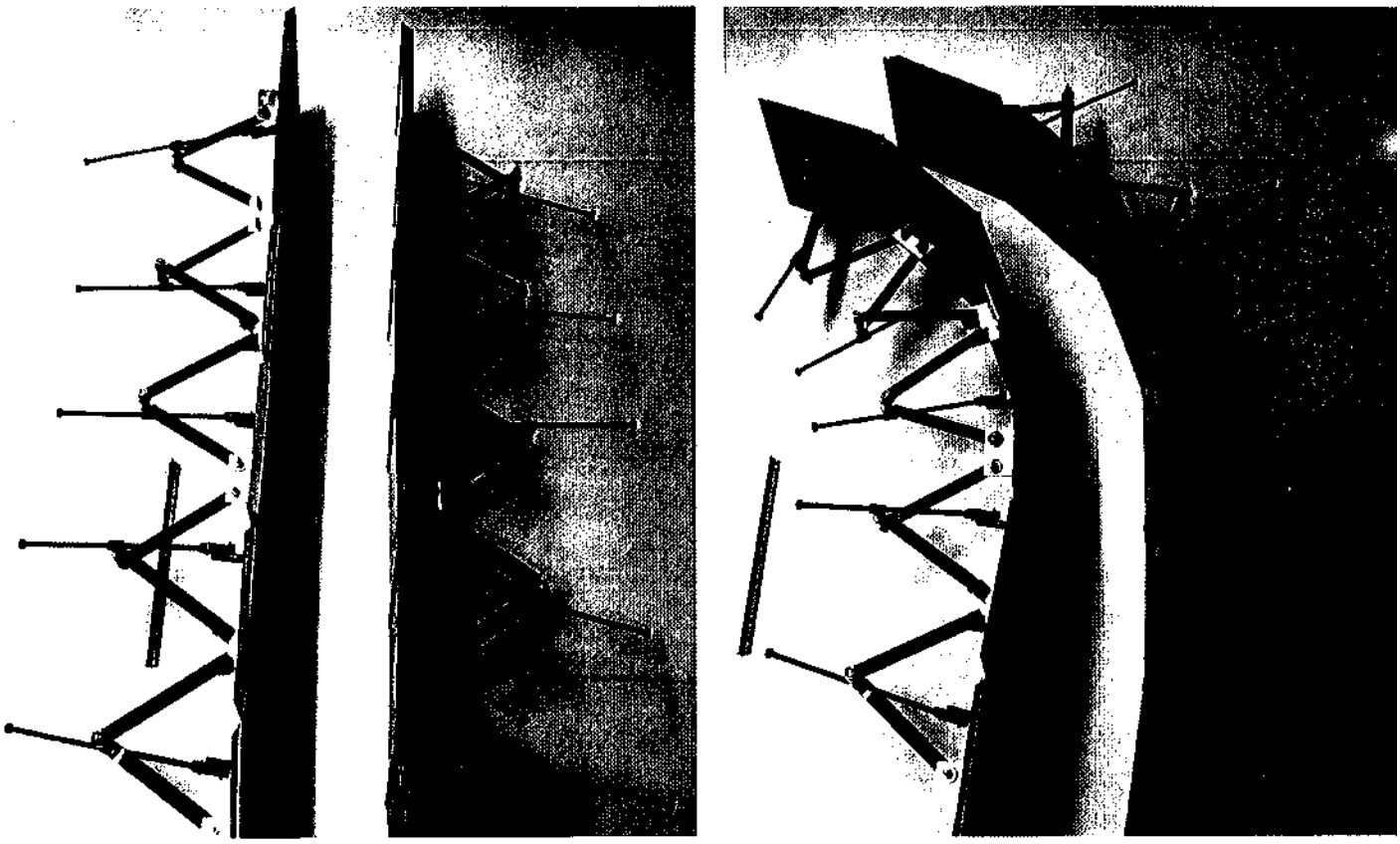


Figure 3: Full-scale prototype of a mechanically adjustable form work/false work. Prototype and photographs by the author.

Vernacular Machines: Digital/Mechanical Formwork

In 2007 I began working on a mechanically adjustable formwork for low-fire ceramic constructions as a graduate student at Virginia Polytechnic Institute and State University (Shaffer, 2008). What began as a series of digitally controlled mechanical casting plates (Fig. 03) that could be reconfigured to create structures (Fig. 04) has evolved into a type of semi-autonomous robotic form work/false work to be developed and programmed in concert with N.G.O.s and the displaced populations they serve (Fig. 05). The principle mechanical "advantage" these Tectonic Machines will offer their IDP recipients is the ability to construct a greater

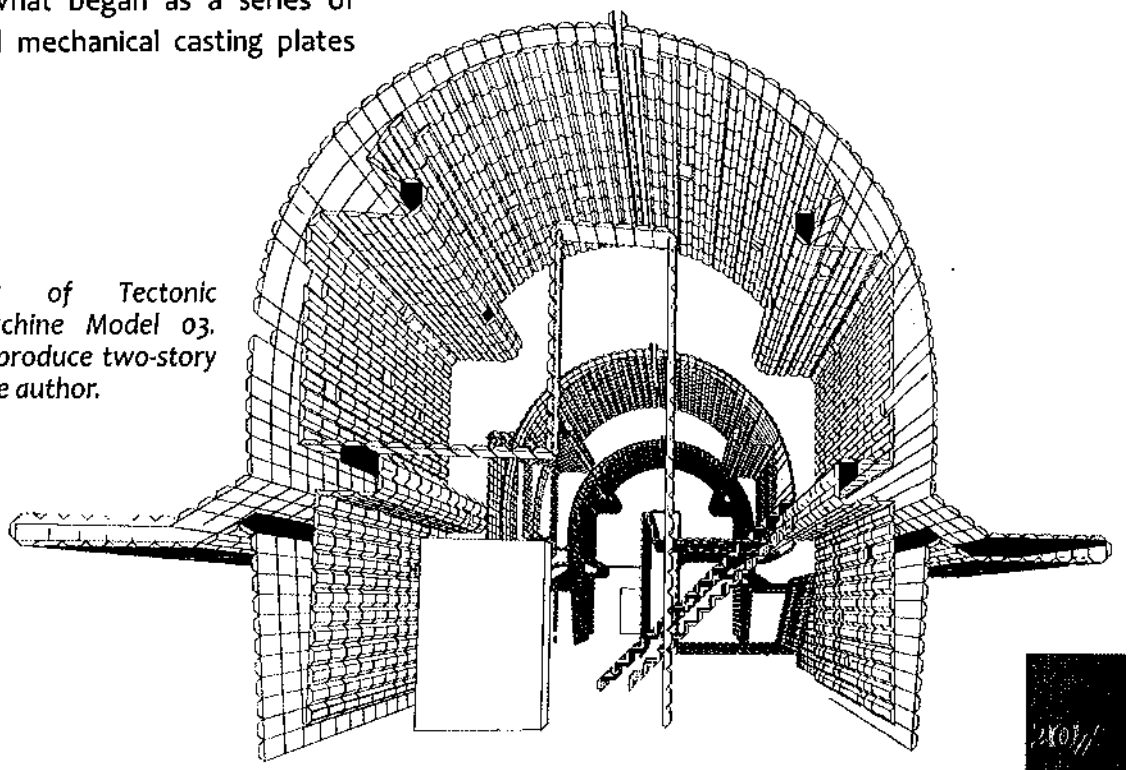
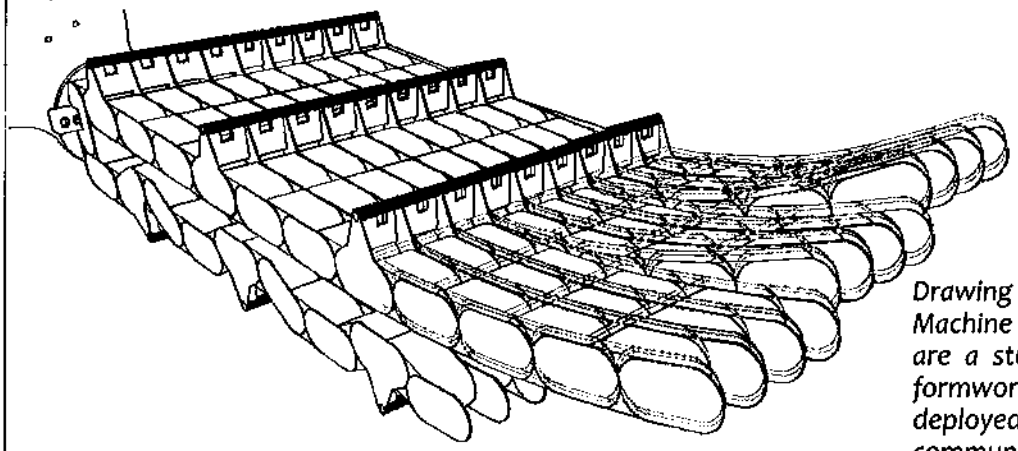


Figure 4: Drawing of Tectonic Machine--Shokushu Machine Model 03. Machine configured to produce two-story house shell. Image by the author.



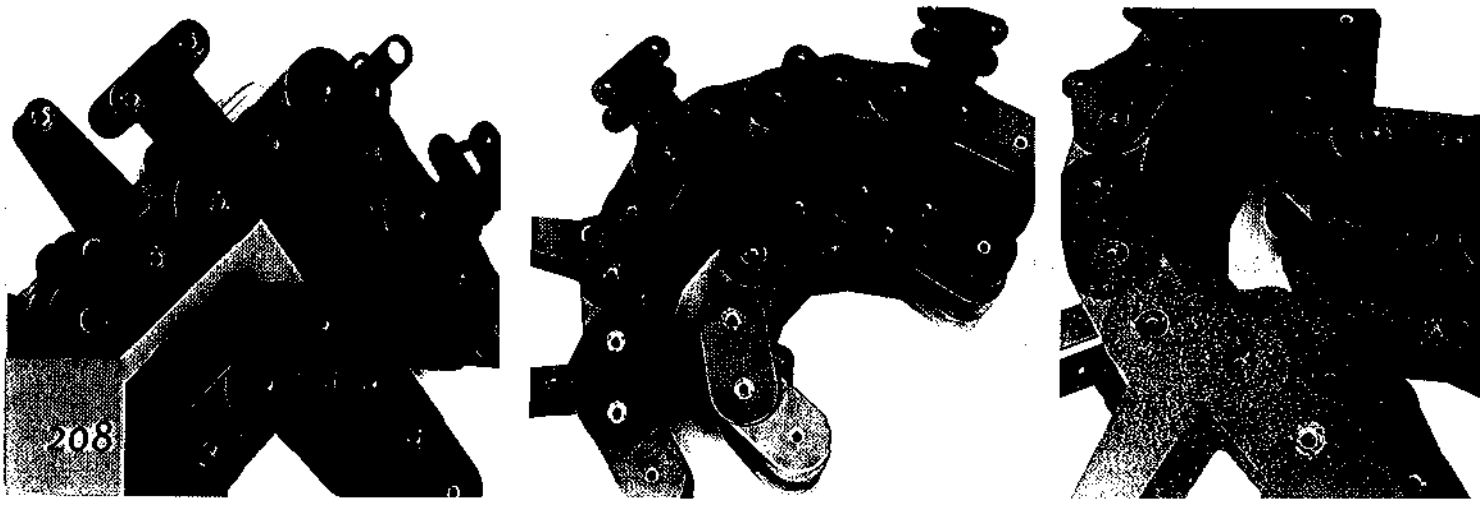
Drawing of Tectonic Machine--Shokushu Machine Model 05. The Shokushu Machines are a study in robotic digital/mechanical formwork that can be programmed and deployed in partnership with "recipient" communities. Image by the author.

variety of architectural and/or cultural forms using readily available plastic materials—liquid earth, adobe, and cement-mud mix (Fig. 05). The primary technological "advantage" of these machines will be in their capability to digitally dialogue or engage with users through communications technology interface, and to remember/reconstruct previous works employing computational memory. Rather than maintaining an overreliance on the changing priorities of the distractible human artisan, the "informed" transmissive tool/machine/technology itself has the capacity to become a repository for the history and traditions of its past use/users (as tools have always done to a certain degree). Just as one might have looked to forms of communal transmission (oral and tactile) and ethnographic recording (drawings and photographs), in the past for information regarding vernacular constructions, these digitally equipped Tectonic Machines will carry like information in their virtual memories. In this manner digitally equipped tools become instrumental to the resettlement of displaced communities and to the sustenance of their vernacular traditions.

Conclusions

As this work progresses and my research has begun to include scholarship regarding the complexities surrounding resettlement camps (logistical, political, social) and the great breadth of issues related to vernacular construction, the solidity of these Tectonic Machines shift between projects that can/might actually be realized, and hypothetical "agendas" or lists of functions/capabilities that a Tectonic Machine might perform. Vernacular traditions certainly

Figure 05: A quarter-scale model of the Shok-Mod 05S, digital/mechanical formwork. Right-angle configuration (right), radius/curvilinear (middle), and free-form/open. Models and photographs by the author.



have an important role in their development, and in humanizing the momentous forces of globalization, Information Age technologies, and our ever-shifting relationship with the natural world. They also represent a critical familiarity, which can be used to counter humanitarian crisis situations that are too often the byproducts of these disruptive forces. On the other hand, Crembil & Lynch (2009) suggest that we have a unique opportunity in turning our developing architectural technologies (along with our architectural values) towards reinvigorating the vernacular, in adopting/recording, employing and evolving various construction arts, crafts, and traditions to house and comfort displaced people in the Information Age.

> No one can deny the realities of global trade, digital tools, capital-intensive fabrication methods, or mass markets. Just the opposite: we suspect that these economic forces might be capable of bringing craft forward in a new way. The spread of the Internet and cellular communication, global sourcing networks, appropriate technology, and intellectual property rights may lead to a resurgence of craft.

One can imagine a future where Tectonic Machines for humanitarian purposes are as common to IDP relief and assistance as the helicopter or cargo plane are today—particularly as militaries have given SSTR missions equal footing with invasions and defensive campaigns. The technical capabilities of these new vernacular construction technologies should extend to designing machines that function semi-autonomously and that are highly mobile so that they might be "assigned" to move with and continuously provide for targeted or seasonally displaced populations (Shaffer, 2009). As tempting as it is to regulate or preserve architectural traditions and technologies within specific geographic places and historical periods, the principle benefits of a vernacular are in sustaining, uniting, and ultimately distinguishing people.

Bibliography/References

Asquith, L & Vellinga, M (eds) *Vernacular Architecture in the Twenty-first Century*, Taylor &Francis, London.

Banham, R. 1960, *Theory and Design in the First Machine Age*, F. A. Praeger, Inc., New York.

Crembil, G & Lynch, P 2009, 'No Resistance', *Journal of Architectural Education*, vol.62, no. 4, pp 49 – 55.

Hailey, C 2009, *Camps* The MIT Press, Cambridge.

Lewis, J 2008, 'The Exigent City', *The New York Times Sunday Magazine*, 8 June

Oliver, P 2006, *Built to Meet Needs*, Architectural Press/Elsevier, Oxford.

O2I (Outsource to India) 2010, Outsource2india.com, viewed 10 April, 2010, < http://www.outsource2india.com/services/architectural_design.asp

Shaffer, M 2008, 'Rise Tectonic Machines', Masters Thesis, Virginia Polytechnic institute and State University

Shaffer, M 'Mobile, Immediate, and Adaptable for the People' Proceedings of Chang[e]ing Identities, Fall 2009 ACSA Regional Conference, Albuquerque New Mexico, p. 172 – 180.

Tech Mission, 2009, UrbanMinistry.org, viewed 22 April 2010, <http://www.urbanministry.org/wiki/international-digital-divide-statistics

Internet use in the Asia/Pacific, Africa, and Middle East regions accounts for approximately 40% of internet usage worldwide, with India representing the largest growing population of internet users according to 2008 International Digital Divide statistics. Similar statistics for cell phone usage from 2007 record nearly 8 million cell phones used in Sri Lanka, and nearly 600 million in China.

Woods, R. 1997, *Radical Reconstruction*, Princeton Architectural Press, New York

VERNACULAR ARCHITECTURE INNER BADUY COMMUNITY IN CIBEO VILLAGE AS REPRESENTATION OF CREATIVITY AND INNOVATION RESPONDING TO THE NATURE

Henry H Loupias

Abstract

Baduy traditional community consists of two groups, namely Inner Baduy and Outer Baduy. Inner Baduy people live in the restricted villages Cibeo, Cikertawana and Cikeusik, Banten province, Indonesia. They have a mystical belief and strong tradition, including the concept of building house and settlement. They believe in supra natural power.

One important rules is not allowed to build buildings using materials and tools of modern technology products. Their building stand on some wooden stilts. The stilts stand on stones as function to support the weight of the building and set the building floor flat. They also forbidden to change the building site conditions, such as by way of flattened or excavated of ground. Buildings should adjust to the conditions of its site.

The building made from natural materials such as wood, bamboo, palm fiber and so on. They use wood and bamboo construction, using bamboo pegs and wooden and palm-fiber rope. Construction techniques that make buildings resistant earthquake because construction is not rigid, flexible and able to absorb the shocks of the earthquake. Bamboo pegs use when two woods or construction in wet condition, when they are dried the joins becomes stronger.

Another important building is leuit that serves as a place to store rice. Leuit stand on some stilts but its size smaller than dwelling house. Leuit located separately from the location of the settlement. To prevent the rats entered the leuit, at the top of the pillars mounted horizontally circular board.

In general, the techniques used by traditional Inner Baduy community showed their creativity and innovation, responding to the material and the nature.

Keywords: *Bamboo pegs, Leuit, Circular board*

Introduction

Baduy traditional community in Lebak district, Banten province, West Java, is one among the traditional communities in Indonesia who still hold beliefs and traditions firmly. According to the history, Baduy people is the ancestor of Sundanese who refuse to convert to Islam faith. Therefore, they broke away into the forest until now.

Baduy traditional community consists of two groups, namely Inner Baduy and Outer Baduy. Inner Baduy still has mystical belief and strong tradition which maintained until now. They live in restricted area which separated from the other community in Cibeo, Cikeusik and Cikertawana villages located in the hills of Kendeng mountain. They refuse anything modern, such as electricity, radio, soap,long trousers and the like. Visitor do not allow taking picture of them and their village. But one could take a picture of Inner Baduy people when he outside of his village. Therefore, documentation of Inner Baduy, particulatly in architecture still rarely.

Any of Inner Baduy people live in the remote village Cibeo. It is situated in an enclave area which isolated from the outside world. The distance of Cibeo village is about 15 kilometers far from the nearest border of a modern village called Ciboleger. It takes up to approximately 3 - 4 hours to get there on foot across hills and forests.

Generally, Outer Baduy people more receptive to other civilization, many of them interact with modern society, adopting some lifestyle of modern society, including the use of some modern technology products, such as radio, mobile phone, long trousers jeans and the like. Some parts of Outer Baduy buildings influenced by modern architectural styles, such as using smooth and decorative bamboo walls, glass window, wooden door and the like. Most of Outer Baduy house has two wooden doors and its interior have been modifiedor divided into several rooms.

Inner Baduy house made of rough bamboo walls, no windows and have one bamboo door only. The house consists of two rooms, called Imah and Sosoro and Tepas. Imah is

Figure 1: Inner Baduy house

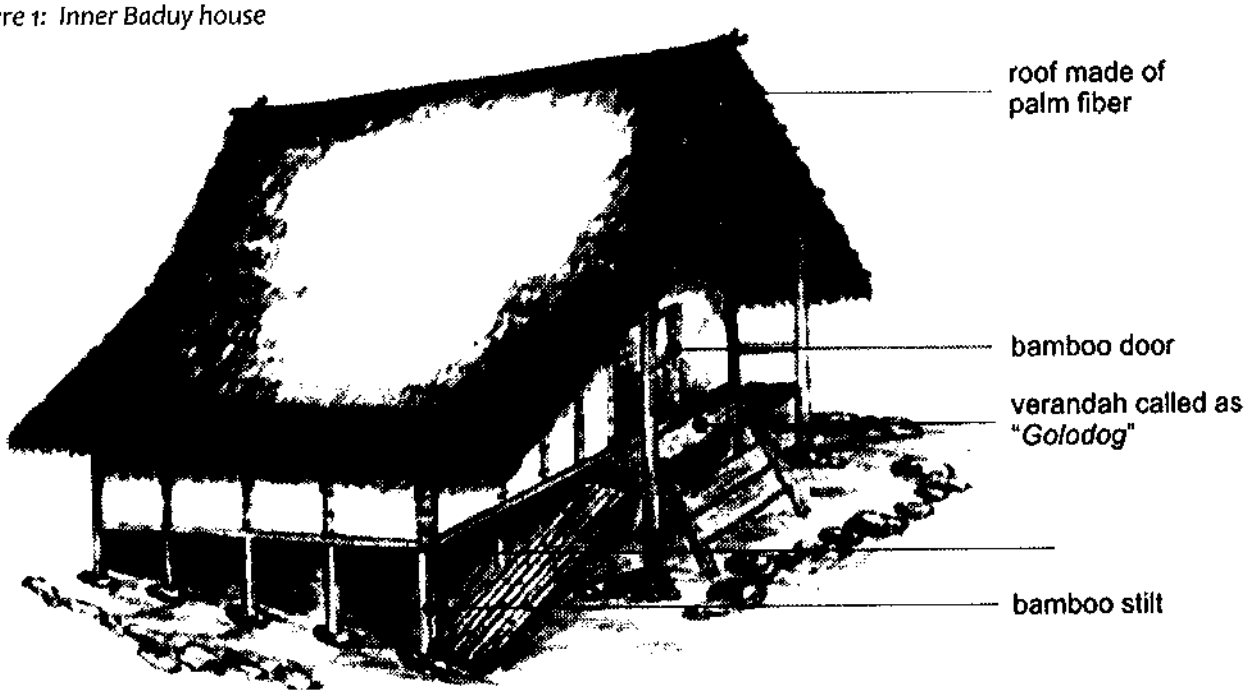
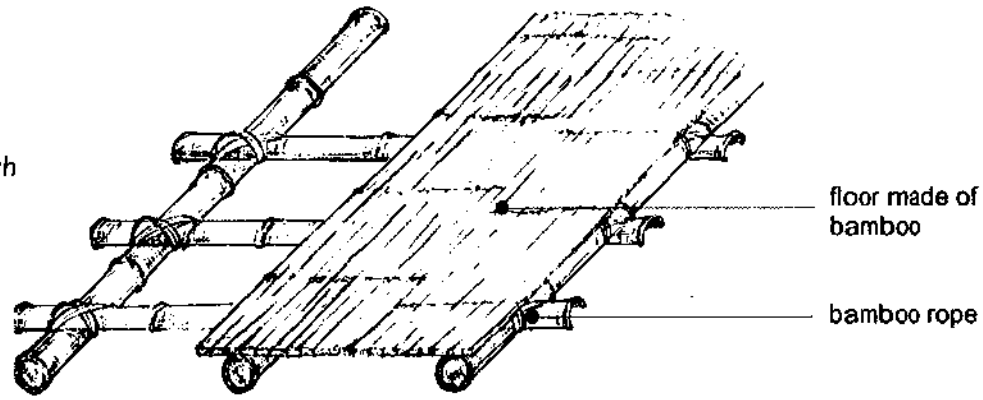


Figure 2: bamboo floor called Palupuh



the main room which have multi function such as sleeping room of the owners, cooking room and storage for household utensils. It is a closed and special room covered by bamboo wall. The Sosoro and Tepas are L shaped room its size bigger than Imah. It has multi function, such as family gathering, eating and sleeping place for children and guest.

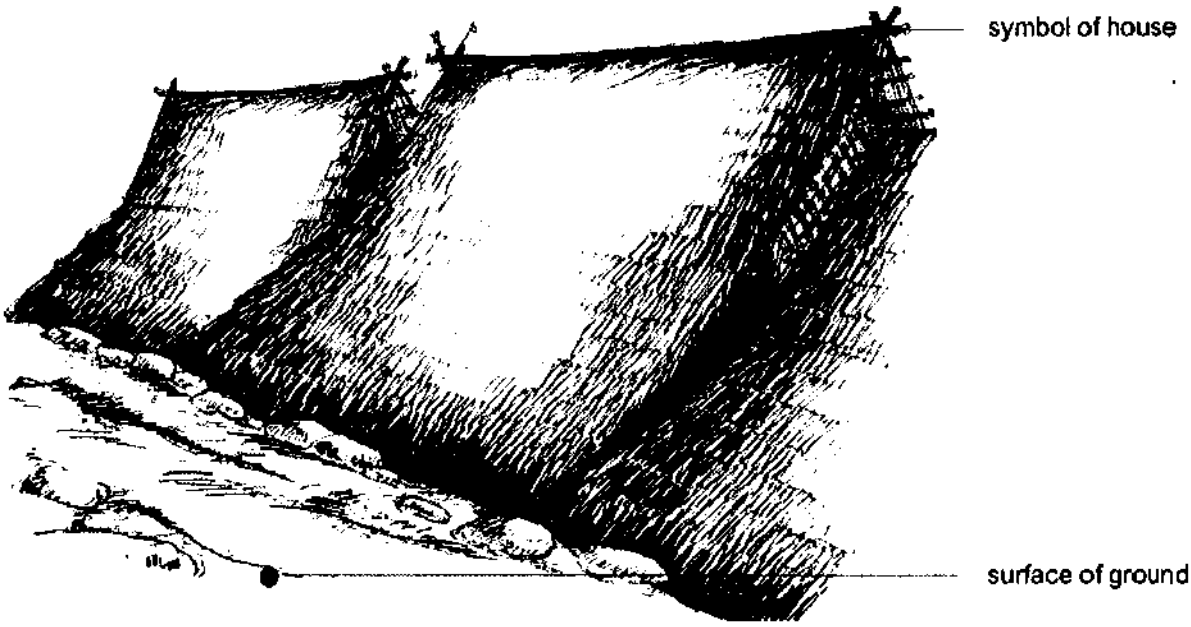
Stilts House Vernacular Architecture of Baduy

All of Baduy buildings stand on wooden stilts. The floor is high and there is a void beneath the floor. The floors are made of bamboo splited and flattened called as "*Palupuh*". Bamboo floor are widely used in traditional Sundanese buildings till now. Generally, it was used as a place to save the fire wood. A raised bamboo floor also serves a number of purposes, such as keeps people from dampness and moisture and make rooms freshly. Stilt house is Sundanese traditional architecture since several hundred years ago.

Inner Baduy traditional community has some beliefs and taboos, among others, is prohibited to build houses using modern tools or products produced by modern technology such as using iron nails, iron wire, clay roof tiles, glass, plastics and the like. The surface of wood construction must not be crushed but rough. Similarly, Baduy building - either inner or outer community - should not be painted.

In addition, they are prohibited from changing or leveling of land for building houses. They are

Figure 3: Inner Baduy of Cibeo village



not allowed to pave the ground for their house. The position of land or earth, they called "Bumi", highly respected by the Inner Baduy community. They believe that nature has supra-natural power. The position of the building must conform with existing land conditions. Not allowed to alter or flatten the land. Meanwhile, most of condition the village of Cibeo is slope area and has diference surface.

Generally speaking, in Baduy community the management of land and sites for building purposes has been an essential part of the way of life of its Baduy inhabitans for many thousands of year.

Living with some prohibitions or taboos and limitations of materials and techniques , it has been encouraging Inner Baduy people creative and innovative. Trying to respond to natural challenges with wisdom and smart solution. Because of technological limitations, changes and development of traditional Inner Baduy settlement tended to be slower incremental.

All the buildings in the village are made of Inner Baduy - natural ingredients contained in the vicinity, such as wood, bamboo, palm fiber, thatch grass, rattan, stone and the like. In addition, these are easily obtained and ease to use. The tradition of traditional settlements meant that building materials were derived directly from the area in which they were used. (Skidmore:157)

Using simple techniques, a technique that resulted from trial –error process and experiments over the years. Inner Baduy buildings have developed to respond to environmental sources and natural conditions, particularly weather and land condition. The position of the building must conform with existing land conditions. They do not allowed to alter or flatten the land. Mostly condition of land of the village Cibeo is slopes with different surface. "Traditional societies did not have the means to make large-scale alterations to the landscape, so their urban developments were subservient to and fitted into and around major natural features". (Skidmore:156)

Inner Baduy people have some simple but functional construction techniques. Techniques and knowledges are comes from some experiments and it is hereditary in a few generations. Although its development and innovation rather static but very useful for their daily life.

In general, the technique used by Inner Baduy are the techniques of tie and peg constructions. Using both techniques to build simple building design and earthquake-resistant building. In addition, Baduy buildings is environmentally friendly design because all of the building materials come from nature. Environmentally sensitive and sustainable landscape design has become an important goal of Baduy societies seeking to achieve sustainable development.

Inner Baduy house made of woven bamboo walls called a *Sase* or *Bilik* (Sundanese). The woven techniques create small holes, such as "pores". These small holes also function as air circulation and sources of light. Inner Baduy house not allowed to use electric lamp. Generally, inside condition of Inner Baduy houses are dark for all day long because has no windows. Therefore, these "pores" could help lighting the room.

For the purpose of looking outside – in Outer Baduy house through a glass window - they make small holes in the bamboo wall, eyes sized hole called "*Lolongok*". They do this by punching holes in bamboo walls of their house.

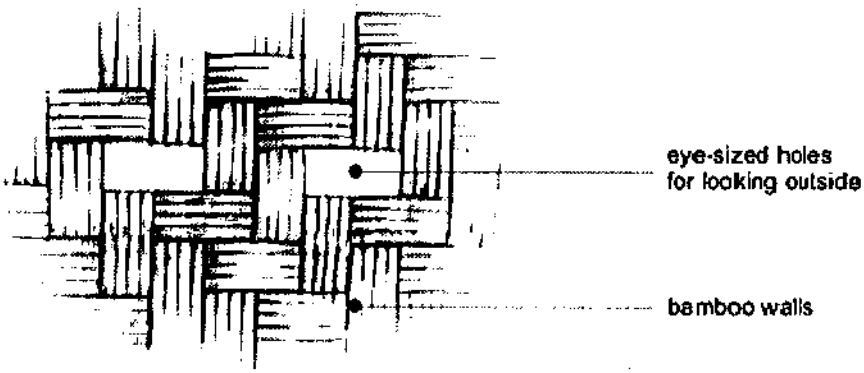


Figure 4: holes to look outside called as Lolongok

Placement "*Lolongok*" placed anywhere, in accordance with the wishes and needs of the house owners.

The main entrance to the Inner Baduy house made of a plaited bamboo door. It is without a hinge, but it is tied by ropes on a bamboo pole. Most of door do not lock when the owner go out or working in the rice field. Most of theirs time spend outside, such as rice field and plantation.

In addition, they do not know the size or measurement of meter. They measured an object by comparing its object with another object. For example, for the size of the door measured with an instrument called a winnow tray, a household utensil which function is cleaning the grain. Therefore, door size should match to the size of these winnow tray. Baduy roof made of thatch grass and palm fiber. The first layer of roof is thatch grass and then covered by palm fiber on outer side. Palm fiber is impervious to water, but it was rarely and make its price expensive.

The roof ridge as meeting point between the two roofs covered by splited bamboo which put in face down position. Its function and position are to keep water from entering the house. Then, on top of the splited bamboo is covered with palm fiber. The construction of bamboo roof frame tied by bamboo ropes only. It consider as light weight construction.

Crops Storage Building "Leuit"

Baduy people is agricultural community who live by farming and cultivation. They grow rice

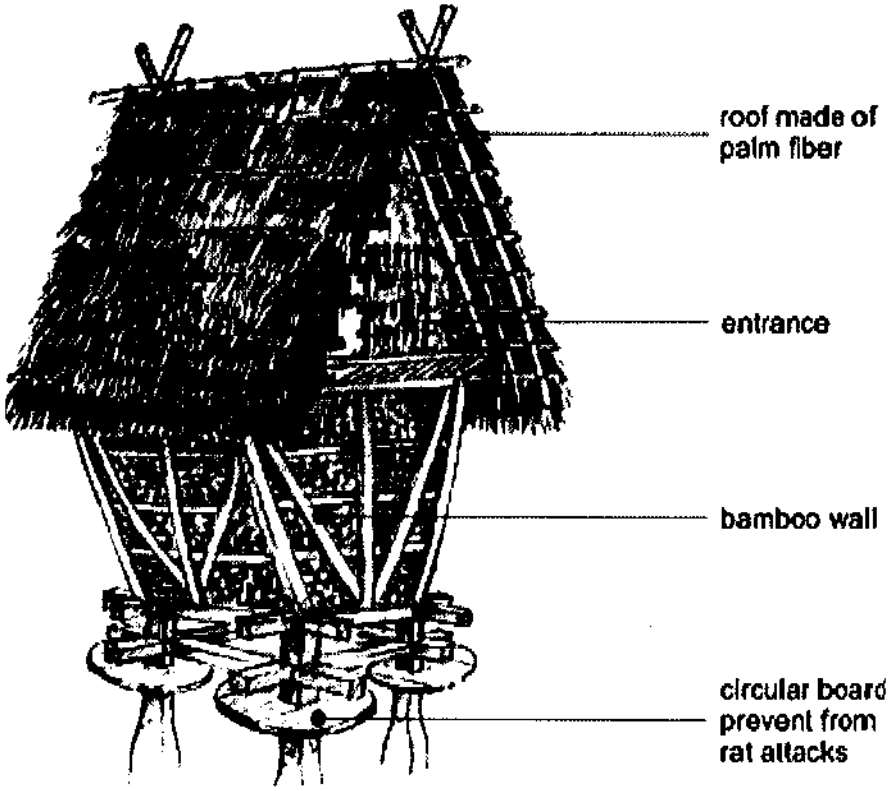


Figure 5: crops storage building Leuit

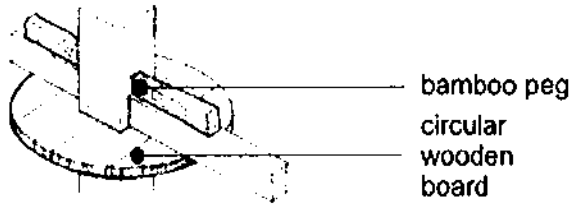
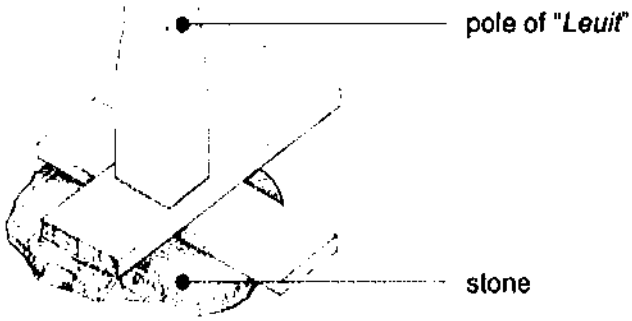


Figure 6 : circular wooden boards to prevent rats



in the slopes of hills or in the dry rice field called "*Huma*". Crops, especially rice, stored in small stilts building called as "*Leuit*". Locations of "*Leuit*" in the outside of the village but not far away from the village. The aim to put it in separate location is to protect it from fire.

Because it is placed outside the home, then the crop should be protected from attacks by animals, particularly rats. To avoid attacks by putting in each pillar circular wooden board that prevent rats could not enter into it. It is a creative solution of traditional people who do not interact with people from outside world.

Indeed, all of Baduy villages susceptible to fire because of all building materials made from natural materials are flammable. Most fires occur due to the stove to cook who forgot to turn off. Because of place of the kitchen is inside the house and the stove is placed on bamboo floor.

In general, construction of buildings of Inner Baduy people using simple construction techniques, particularly pegs and ties. The use of wood and bamboo pegs function to lock and tighten construction. Usually the pegs are used for major construction and connection to withstand heavy loads of wood. For example the construction of vertical poles connection with horizontal truss.

The process of connecting or joining woods is made when wood is still wet. Connection or joint will be stronger when the wood dries up because the hole became narrows. Using wooden or bamboo pegs made of wood construction is more powerful because they come from similar materials. Installation mode when connections or construction done in wet conditions, when drying shrinkage will occur so that the peg could be fit or strong. Peg is elastic part which could adjust existing condition.

Mostly, tie techniques used to connect light constructions, serves to attach and hold the bamboo walls, palm roof and bamboo floor. Like pegs, ropes or bamboo and rattan cords are also becomes stronger over time. Generally, tie technique used to install the light parts of building. Stilts house of Inner Baduy supported by some wooden pillars. Because of the condition of uneven land, should not be in if, then the building must conform with

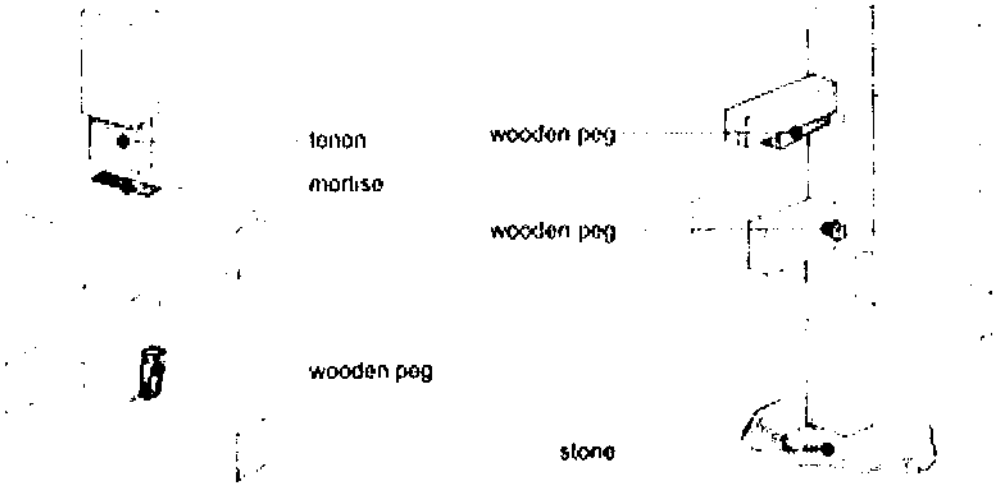


Figure 7: wooden pillars construction

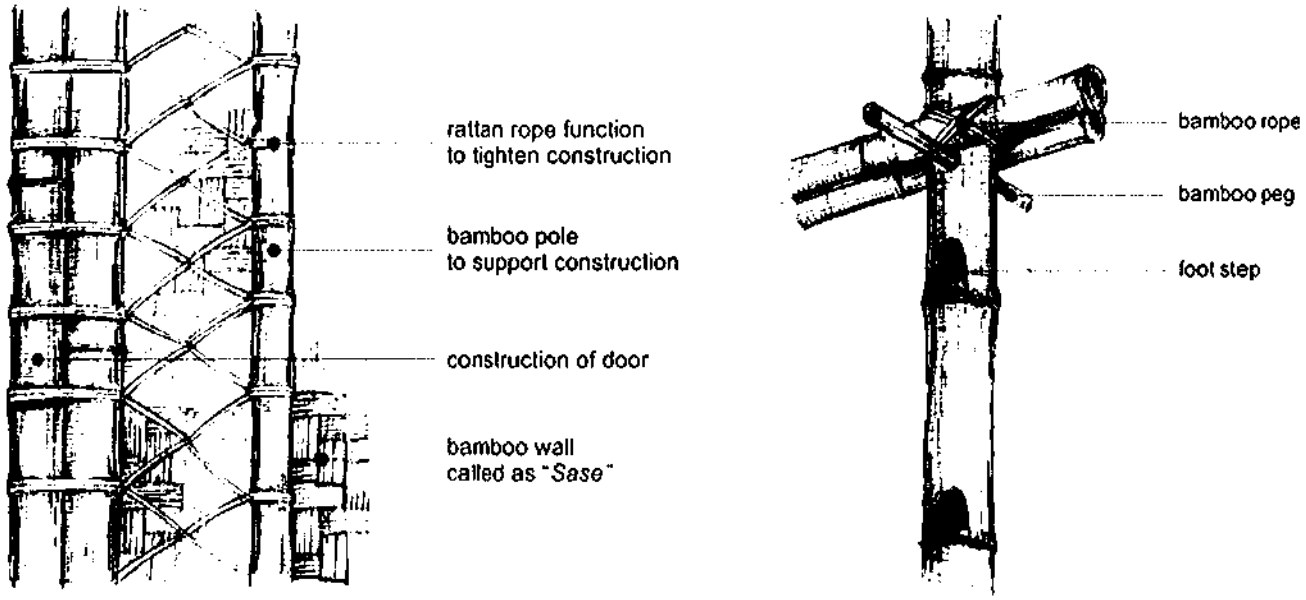


Figure 8: Wooden constructions

state of the land.

To be flat or a flat floor surface, the height of the pillars should be set. These stilts stand on stones so you can easily adjust the surface of floor. Besides, such stones serves to hold the load of main construction.

Because of sloping land surfaces cause high of stilt in every house is differently, depend on its site condition. Some houses have a long stilt in front and higher than the back. Conversely, some stilts in front house shorter than the rear stilts. The purpose of difference kind of size of stilts is to make the surface of the floor is flat but not disturbing the site.

Inner Baduy buildings using knock down system that consists of several separate parts. This system makes it easy to work and fix it because it can be done separately. Building materials derived from the natural surroundings, i.e. bamboo, wood, stone, palm fiber, thatch grass and the like.

They live in nature, therefore, they are trying how to maintain and preserve nature properly because nature is believed to have supernatural powers. They use the wood sufficiently, large timbers for the main construction building only. They cook using a stove and firewood which obtained from dry twigs from the old tree which is not productive. They have to choose old tree before they cut it for building.

To design building for inner Baduy people, they must not only consider the function, the climate and the topography but they must understand the beliefs and taboo. Both aspects are two main consideration for Inner Baduy people in build a building.

Inner Baduy building design relies on an understanding of the social, beliefs and environment which influence the structure and form of building and settlement. Their building represent a simple design based on simple structure and natural materials. All of Inner Baduy building design is primarily concerned with function of a simple home and responding to the nature.

References

Skidmore, Rebecca. *The Importance of Place or Why Place is Not in Danger of Technological Obsolence* ,in: Design for the Community, V Popovic, P Whitman, B Hudson. editor. 1995. Australia:QUT Publications.

Walker, John A.1989. *Design History and The History of Design*. London: Pluto Press

INFORMAL STRUCTURES: VERNACULAR SPATIAL RESPONSES TO THE INDUSTRIAL CORRIDOR IN INDONESIA'S MAIN RICE PRODUCER REGENCY, KARAWANG WEST JAVA

Kemas Ridwan Kurniawan

Abstract

Karawang Regency in West Java is one of Indonesian main rice producer regions whose economic activities growth rapidly. However, the concern of many people is that the development failed to anticipate the gap between traditional vernacular communities who conduct agricultural activities and the new industrial corridor that is formed along the southern part of Cikampek Toll-road that creates environmental and social problems in recent years. The southern industrial sites where national and international manufactured brandings are produced, imported, and distributed are more developed than the northern area. This unequal development creates a disparity inside the regency.

Not only industrial estates threaten agricultural land-uses, but also flooding is now a regular disaster in Karawang and endangers the historic settlements and production of paddy-fields. Vast areas lack proper planning and human resources development. These factors race in parallel with social issues like migration and unbalance opportunities between native and newcomers from outside. Also the impact of modern lifestyles and mechanization are additional threats.

The intention of this paper is to raise peoples' concern about the sustainability of the vernacular settlement in Karawang which is encroached step by step by industrial estate and modern capitalist developments. 'Informal structures' is a title given to the Karawang Native spatial responses which are created from Native informal economic activities like small eateries, simple boarding houses for laborers, and motorcycles used for public transport. To investigate the phenomena of informal structures in Karawang, this paper will look at from aspects of vernacular communities, urban-architectural structures, authoritarian systems and industrial capitalism through the fourfold intersection of people, place, power and money. The absence of local community involvement in the mainstream development has denied the importance of local initiative and knowledge capacity. Vernacularity, in this case, is transformed into an informal social system that is developed through resistance of kampongs culture against urban capitalist development.

Keywords: *Informal Structures, Urban-Capitalism, Agriculture*

Introduction

Karawang Regency in West Java[1], located about 60 km east of Jakarta (via the toll road), is one of the Indonesian main rice barns. In the 1980s, the central government in Jakarta endorsed a policy to develop Karawang as one of the main concentrations for industrial areas in the country by utilizing the empty lands on the south of Karawang that were mistakenly identified as infertile. In the present local government autonomy era, many new local authorities face challenges in urbanization especially from increased population and migration. Local incomes from industrial investments become more important than the income from traditional agriculture. As the consequence, many industrial development schemes become the main focus in many developed regions such as Karawang.

There is a disparity between the northern area and the southern area. Cikampek toll road divides Karawang into two areas: the northern area which is dominated by large paddy-fields and vernacular settlements, and the southern area which is allocated for heavy industries. These heavy industries actually are very influential in changing land maps and cultural attitudes of local people. As a result, rice production in Karawang now is threatened by the decrease of potential lands for paddy-fields, adding to the problem of a lack of the younger generation's willingness to be involved in sustaining rice production[2]. Flooding routinely also strikes Karawang every year, creating huge losses in community incomes.

The growth of informal structures inside crowded settlements indicates an imbalanced system in an environmental structure. There is a concern about these informal structures as this development can disturb the sustainability and quality of environment in this region. The objective of this research is to analyze the influence of the Industrial Corridor and urbanization on vernacular settlements in Karawang, and to identify the local community's spatial responses in the form of informal structures.

Figure 1: Map of Karawang districts.

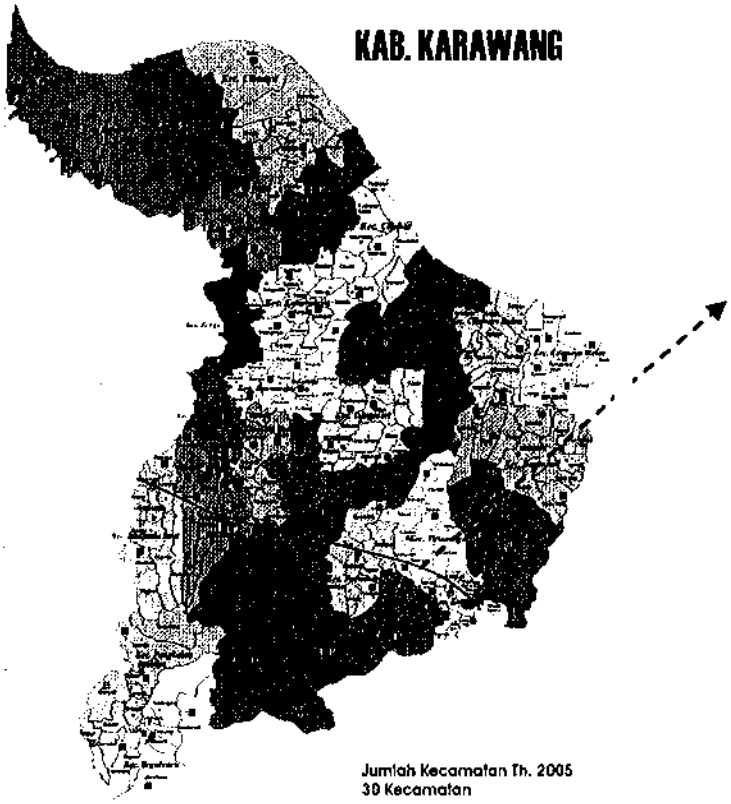


Figure 2: Citarum River, that creates annual floodings in Karawang. (2008)

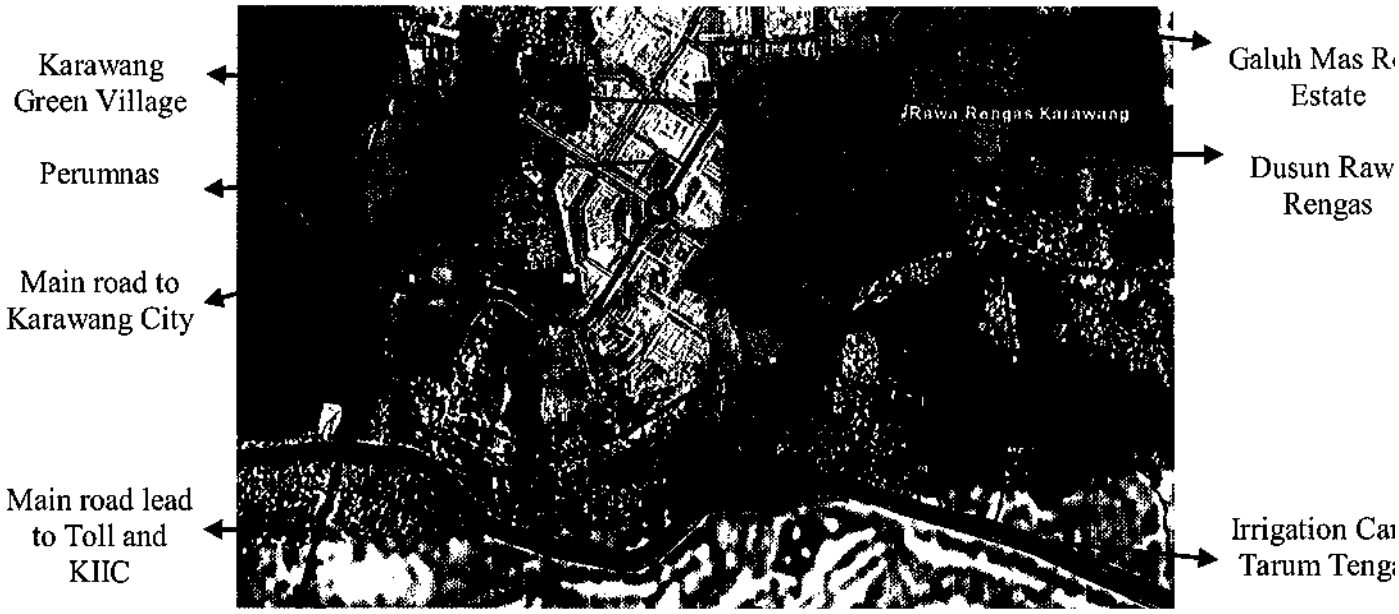


Figure 3: Location of Dusun Rawa Rengas in Sukaluyu Village, Tangerang.

As a case study, this research takes one of small villages (*dusun*) located on the border of Karawang Integrated Industrial Corridor namely Rawa Rengas in Sukaluyu Village which experiences degradation of vernacular qualities caused by urbanization and industrialization. The method of the research is through analysis of the socio-political aspects of vernacular places in relation to the impact of Karawang's regional planning to the emergence of unplanned informal structures. This paper criticizes asymmetrical power relations between capitalists (industrial corridor), authorities (local government) and vernacular people (community's informal sectors). This paper looks at two ambiguous roles of these informal structures. At first, it criticizes how these informal structures have created discomfort to the environment; secondly, how the beneficial aspects of informal structures do not obtain serious attention from government and are still missing from the mainstream development of Karawang's regional planning. As a strategy, this paper analyzes the fourfold intersection of people, place, power and money through various data collection methods (photographs, statistics, drawings etc) from field investigations and interviews with three parties: government, industry and local communities.

Vernacular settlement as rice barns

The model of Karawang's vernacular settlement adopts an agrarian system based on a group of familial farming clusters which are located close to a water source. Its arrangement follows a linearity of a *dusun* road and is surrounded by large paddy-fields and plantations. Between these clusters, which are separated by trees, plantation or small ponds for fishery, there are narrow passages connecting public roads to paddy-field and to other nearby neighboring *dusuns*. Each cluster consists of a communal yard, houses, and rice barns. This communal yard is used collectively to dry paddy or for other community activities. This vernacular *dusun's* structure consists of a long row of houses, built surrounding paddy-fields, with some regularity as to its longitudinal extent, on a narrow fertile plain.

Figure 4: Paddy-field in Karawang (2009). Source: Private Photograph

Figure 5: Local Rice Barn with Mill inside and its yard for drying (2010). Photo Meygie L.

The houses stand in a row and face the road. The houses of the chief of village and several others belonging to the principal inhabitants are built on the front. From the road the whole range of dwellings, which forms the *dusun* can not be taken from one viewpoint without interruption since large clusters of trees are spread through it, which conceal the houses in various situations.

Dusun Rawa Rengas in Sukaluyu Village was firstly formed in colonial times in the early 1900s by five families namely Saidah, Sadenan, Entam, Pulung and Armena[3]. This area was initially swamps and forests that were located on the western border of large paddy-fields owned by a Dutch *Tuan Tanah* (Land-owner). These local people opened new paddy-fields on the western part of the *dusun*. The name of *Rawa Rengas* was derived from original characteristics of the area which was *rawa-rawa* (swamp area) where there were many *Rengas* trees.

There are some communal working groups such as farming, fishery and goat breeding communities that operate in each *dusun* and consist of native peoples who own land, stables or fishery ponds. These community's groups assist, mediate, and protect the

Figure 6: Village main road. There is a small stream of village canal for paddy-field on the side of the road (2010). Photographed by Ristia K.

Figure 7: A passage lead to housing clusters and paddy-field (2010). Photographed by Meygie L.

interests of the local people and their resources. In this *dusun* there are also one or more *surau* or *mushalla*, *warung* (small kiosk), *dukun beranak* (midwife), small cemetery, and a village school.

This *dusun* is usually led by a Dusun Chief who is responsible to the Head of the Village. The present *Dusun* Chief is a person namely H. Kasman (born in Bekasi), the son-in-law of a rich native farmer namely H.Akbar who owns a paddy-mill. Akbar owned the largest paddy-field in the area which now has been partially sold to developers. He then bought new paddy-fields in the coastal areas. Another rich farmer, namely H. Syarbini who owns a paddy-mill, operates the most numbers of simple boarding houses for laborers in the area. The total population in a *dusun* is usually not so large and the social system in the *dusun* has been agro-based. This *dusun* has a total population of about 1184 inhabitants (2009) which consists of 297 Kepala Keluarga (family units) and the majority are Moslems (98%). Presently it is bordered on the north by Galuh Mas Real Estate (formerly name as Rawa Keong), on the east by Pasirjaya Village, on the south by Dusun Kalipandan, and on the west by National Housing Compound Bumi Teluk Jambe. There are two sacred graves (*keramat*) in this Dusun, namely *Keramat Saidah* and *Keramat Sadenan*. These two graves represent the spirit of the place and give a sense of place to the people in Rawa Rengas.

Figure 8: Map of Dusun Rawa Rengas (2010). Source: Private Collection

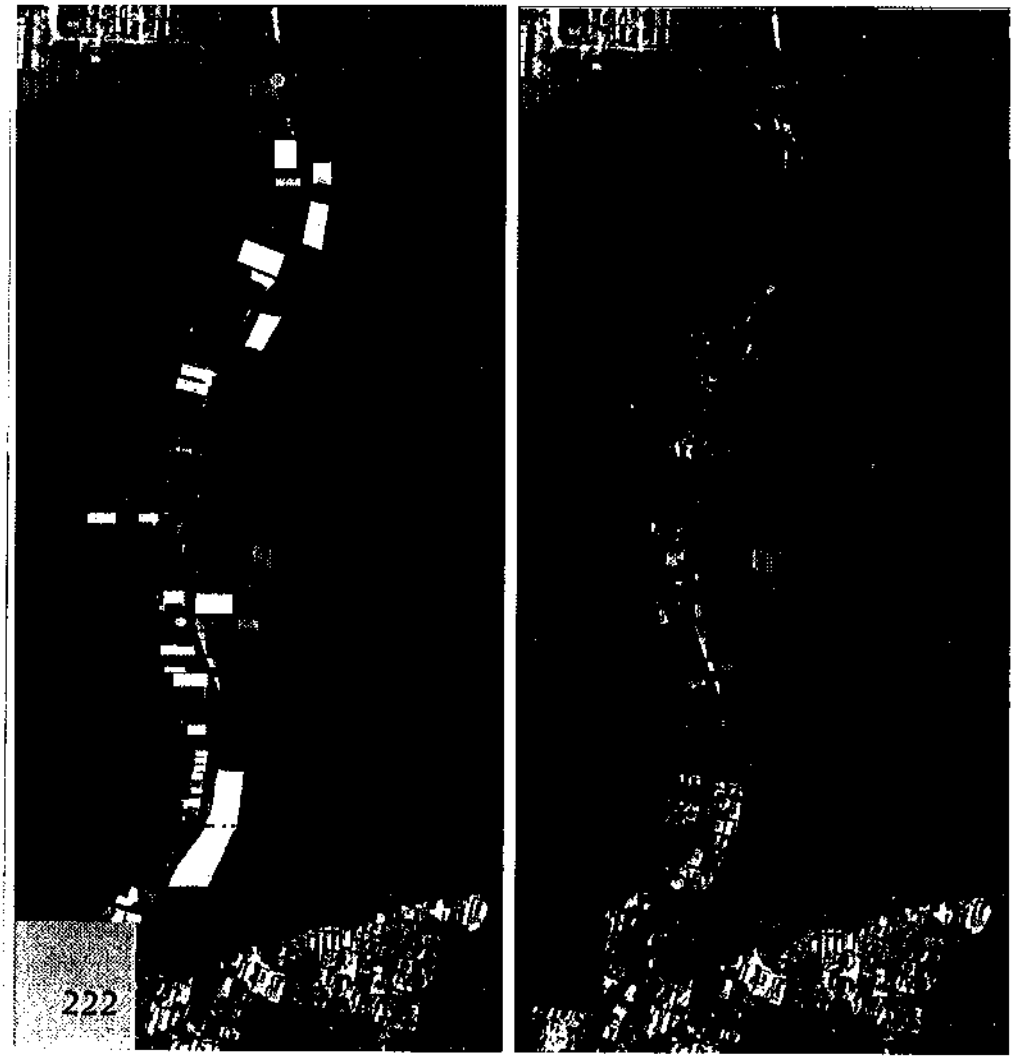


Figure 9: Settlement pattern, following a linear main road. There are several clusters of familial housing units consisted of houses, rice-barn, and large yards for drying padi (2010). Source: Private Collection

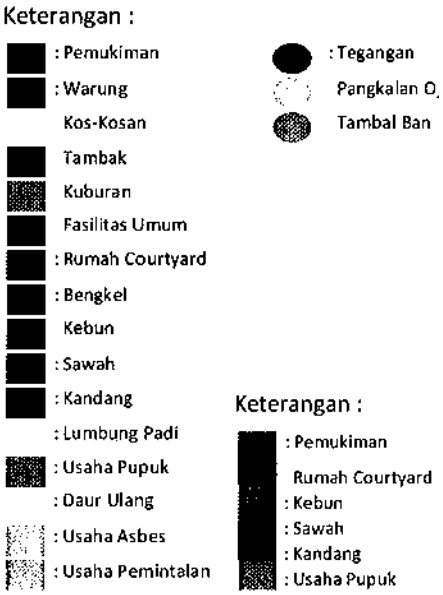


Figure 10: Keramat Saidah burial shelter (2010). Source: Private Collection

Figure 11: Dusun cemetery (2010). Source: Private Collection

There are no impressive structures in the *dusun*. To enter this *dusun*, visitors have to enter a T-junction from Kalipandan Dusun on the south and Galuh Mas main road on the north. Presently, Dusun Rawa Rengas is part of the Kelurahan Sukaluyu area, Teluk Jambe East. Situated in an area of 14.24 ha in size, this dusun consists of 1 RW (*Rukun Warga*) and 3 RT (*Rukun Tetangga*). The largest is RT 09, where the main Mosque is located. This mosque namely Darut Taqwa serves the community and was rebuilt in a modern style. The size of paddy-fields left in Rawa Rengas is about 5 ha. For the people who had lived for decades in Dusun Rawa Rengas, the mosque became a spiritual centre that gives religious characteristics to the site. However, in fact, there is no centre, because people chat, gossip, perform events, and play on the street, *warungs*, yards and everywhere. Here, people are more active in the exterior rather than interior space. Streets, *warungs*, and yards become the main social spaces. The provision of public facilities, beside the Mosque and Mushalla, is almost nothing, and people sometimes gather in house of Dusun

Figure 12: The new re-design Village Mosque, namely Darut-Taqwa (2010). Photographed by Meygie L.

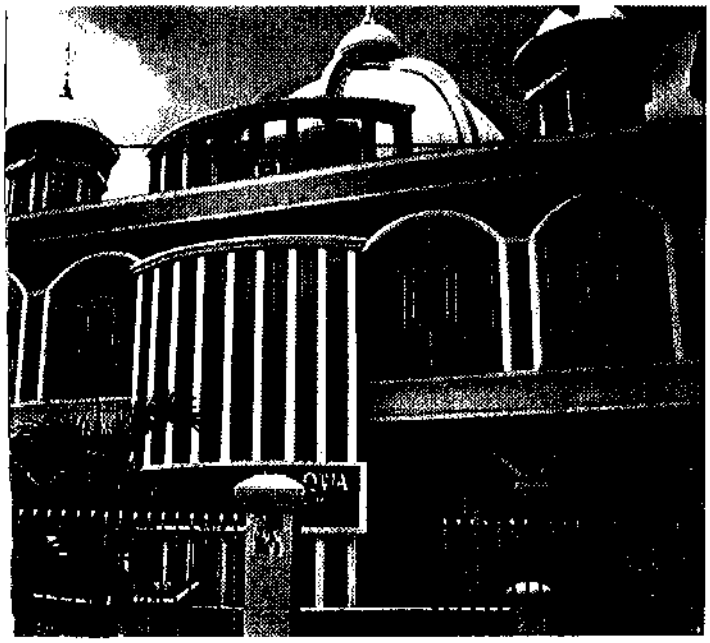


Figure 13: Village mushalla is located inside H. Oman's land (2010). Photographed by Meygie L.

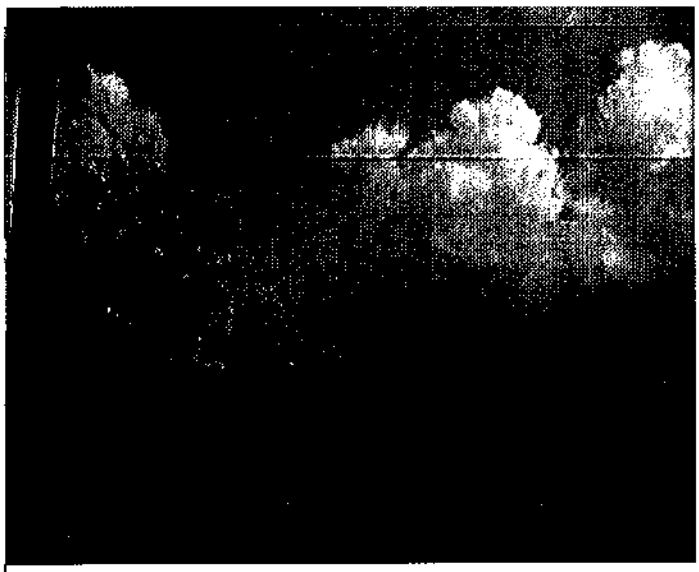
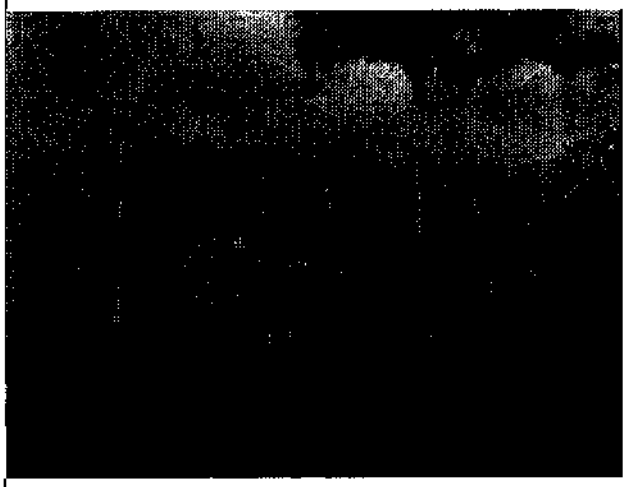


Figure 19: Some industrial compounds in Karawang Integrated Industrial Corridor showing order and exclusivity (2010). Private Collection.



peoples' perception, especially for local younger generation, as they do not place their future priorities on agriculture fieldwork. As a result, the growth of informal structures, which are generated by informal economic sectors such as small eateries, simple boarding houses for laborers, motorcycles used for public transport and waste collection points, is very high. Some of these structures are freestanding, and there are some others which are attached to peoples' houses which sometimes create discomfort to the environment.

The power of capitalism is clearly felt in this area. Some big investors have ever so often glanced at this area, and there is a concern that other urban housing estates will soon be built in the area. The formal powers in this urban kampong scene actually consist of several parties. These parties are very influential in running day-to-day social life. The first one is native land-owners, the second one is local government authorities who play at the

Figure 20: Transformation of paddy-field into un-used land for new housing estate (at the background) (2010). Private Collection

Figure 21:The destruction of paddy-field, by new urban and industrial structures (2010). Private Collection

Figure 22: Name board for goat breeding community (2010). Photo Meygie L

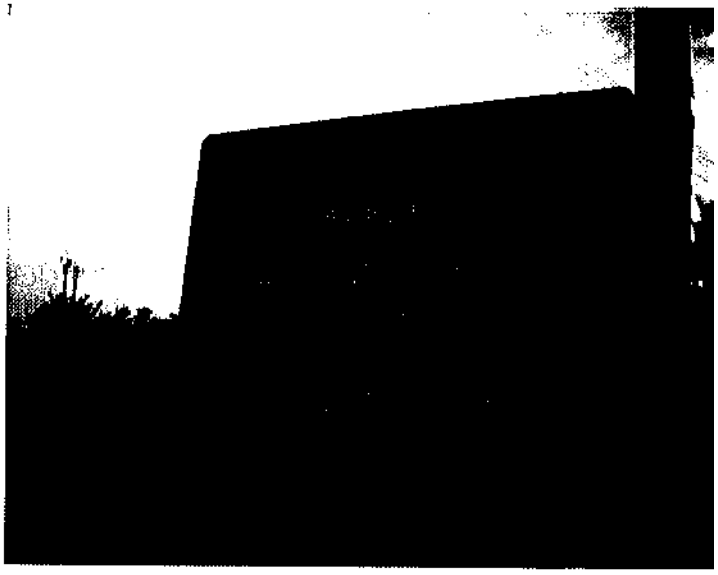


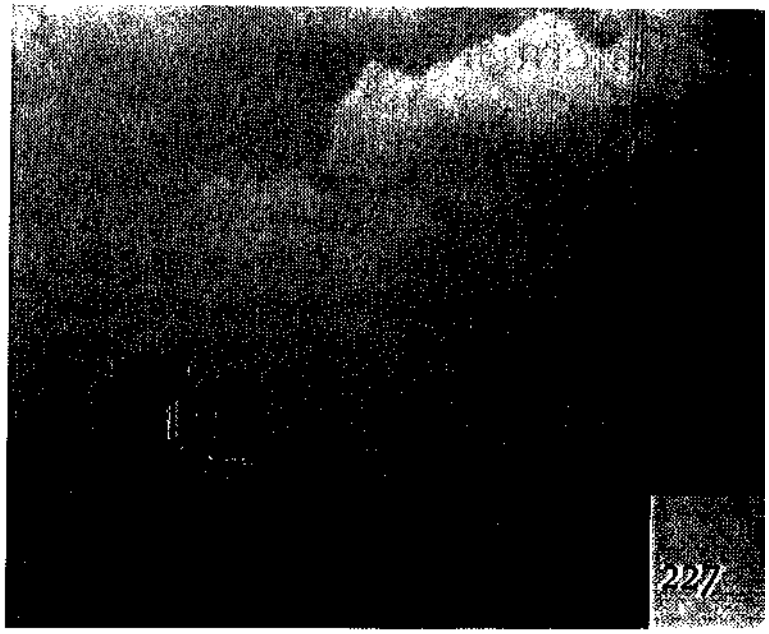
Figure 23. Name board for farmer and fishery community (2010). Photo Meygie L

political level, and the third one is rich private businessmen who own the money. Local people who are represented under community social groups have been influenced by the existence of these powers.

In less than 20 years, many of these Dusuns have transformed their agricultural-social maps from feudal landownership towards attempts at capitalist privatization that alter the geography of vernacular settlements. The breathing in and out of individual lives has been set in counterpoint with un-planned spatial programs as a response to wider social problems influenced by the transfer of land-ownership from local people to outsiders that has greater capital investment capabilities. Bribing practices to local leaders often accompany the process of these land-right transfers, sometimes illegally and unlawfully done by big investors that have victimized native peoples who did not realize these unfair games. The case study in Dusun Rawa Rengas shows that there are two new modern real estate developments namely Galuh Mas and Karawang Green Village that flank Dusun Rawa Rengas. These two new urban housing settlements are located in former large paddy-field areas and create instant simple business activities conducted spontaneously by the local people.

As a result, several past conflicts involved the local people's resistance when their rights to

Figure 24: Karawang Green Village Estate (left) and Galuh Mas Housing Estate (right) are located next to Dusun Rawa Rengas, and occupy former padi-fields sold by local landowners (2010). Private Collection.



obtain access to settlements or paddy-fields were blocked by fences or by wide roads of the big projects. A sense of social discontinuity is created by the estate gates, wide urban roads and industrial estate strongholds occurring side-by-side with traditional settlements. Other conflicts are created by unequal opportunities to work in factories and companies thus resulting in attitudes that are undermining the important involvement of the local people. In fact, many migrants from other regions worked in new projects and industries, thus creating an imbalanced competition with local people. This condition results in local people's position as subordinates to the outsiders in that they only provide or serve the needs of these outsiders.

Moreover, there is also a new practice provided by the local people to collect industrial wastes which are managed by Madurese people. Therefore, villages on the border of KIIC become waste collecting points whose output is sold for recycling purposes to waste management businessmen. These waste businesses have hundred millions of rupiahs turnover; however, again, the local people are not main actors or beneficiaries of this environmental scenario.

Informal Structures

Informal structures mean vernacular spatial responses represented through non-permanent, un-planned architecture created by ordinary people. One of Indonesia's urban problems is landownership, which is still under customary laws. Gareth Hardin (1968:1244) said that *'over utilization of common property by all member of the community has led to a tragedy where nobody gets any benefits but tragedy.'* Hardin's idea can be applied in an Indonesian urban context where local settlement leads towards 'urban tragedy'[4]. This condition is represented, amongst others by the appearance of informal structures, which sometimes fill in empty places or are attached to one particular local community, which then gradually grows uncontrollable, disturbing existing original settlements. Informal structures enlarge and spread because of the increase of informal economic activities as a response to pressures of economic pragmatism while the formal system can not accommodate the spectrum of entire community's needs. These informal structures have temporary physical appearances, locate outside of the formal system and sometimes are illegal, but nonetheless generate part of the big economic matrix.

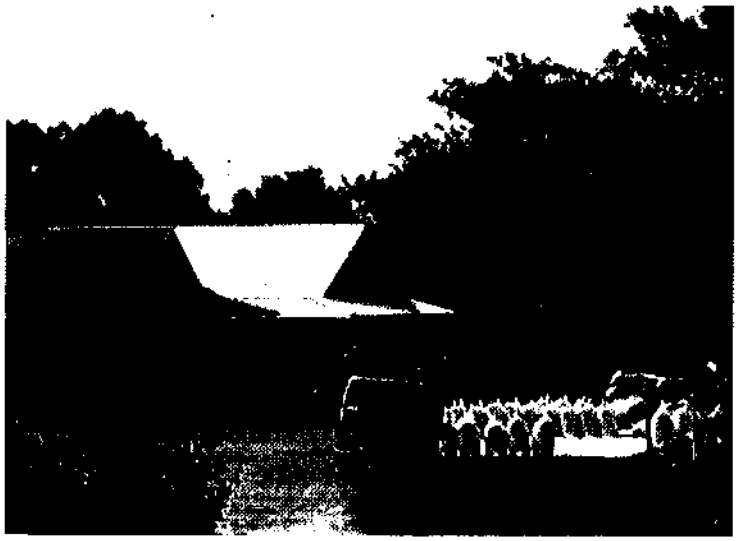
There are several types of new simple businesses which are located inside vernacular settlements, close to a *Dusun* and are attached to new industrial urban housing that are conducted by local people, such as: *warung makan* (Small eateries), simple boarding houses/rooms for laborers, *pangkalan ojeg* (Basecamp for motorcycles used for public transport), waste recycling and collecting points, *tambal ban* (wheel repair), car workshops and wash, *kusen* (Window/Door frames) craftsmen. These kinds of spontaneous activities basically also represent the appearance of new informal social systems involving power that is operating through asymmetrical power relations. There are always parties who possess the economic system and thus dominate local initiatives

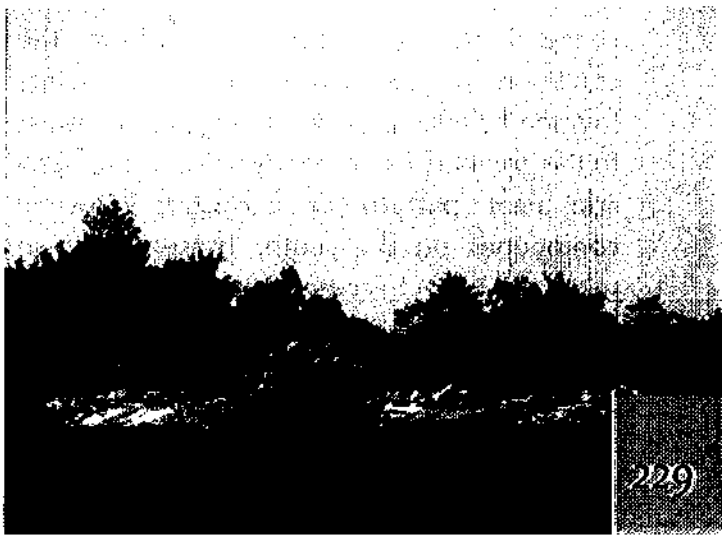
Figure 25: Pangkalan Becak (left) and Ojeg (right) are located on each entry to Dusun (2010). Private Collection.

under the power of their authority.

A walk through the roads and 'gangs' (pedestrian walkways) of Dusun Rawa Rengas gives the sense of a traditional agricultural place combined with un-planned development. Lippard (1997: 172) says , '*Land use is at the heart of the most controversial aspects of Native culture today.*'[5] The creation of informal structures seems to be the only way for some local people to survive after they sold their grandparent's heritage lands for cheap prices to private parties. For instance, pangkalan ojeg (base-camp for motorcycle used for public transport) that serve local inhabitants and migrant workers are easily found at every entry points to the new urban settlements, since it is not easy for local members of younger generation to work in industrial estates for certain reasons such as educational levels and stereotypes of local people's working attitudes which can not compete with outsiders. This perception is held by the authorities of big

Figure 26: A waste collection station locates near local settlements. This business, run by people from Madura, creates hundreds of millions of rupiahs turnover (2010). Private Collection.





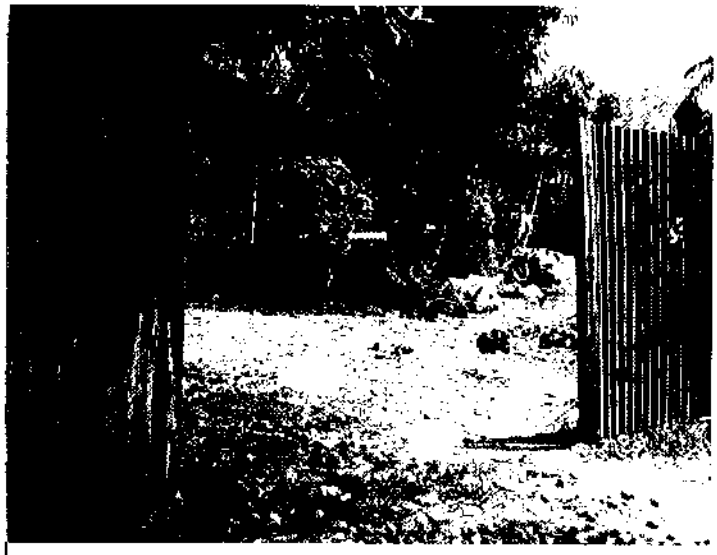


Figure 27: A waste collection point locates inside Native settlement own by local people (2010). Private Collection.

private companies and has marginalized local people from the mainstream of economic activities.

The industrial corridor on the south and new urban housing estates has produced huge amounts of waste which are creating environmental problems to the area. However, there is a small number of Madurese businessmen who obtain benefit from this waste. They collect these wastes and sell these wastes for recycling. This business has changed the local landscape where the condition of the waste collection points (owned by local people) are in great contrast to the greenery of the paddy-fields or the clean and neat pattern of exclusive industrial compounds on the south. These Madurese migrants have become a new power base within the informal economic system as they dominate the waste business and local people work under their hands.

Present space is not a multiplicity from old space rather it is a reinvention from economic demands. People here produce their own space, based on their needs, without assistance from professionals such as architects. The old 'Karawang' traditional houses with large yards no longer exist because the connection to the past has been lost and displaced by more dynamic social space where land values have increased sharply. For instance, the descendants of the elder generations sold and divided their lands into smaller blocks which produced disorderly land-use mosaics.

Moreover, the working class migrants attracted to industrial and urban estates become part of a new social fabric in Karawang map, as they bring money to the village and generate new formations of informal structures. The creation of new un-planned /kos-kosan/ (simple boarding houses/rooms for laborers) by native landowners who intensively fill their own green lands with informal structures has destroyed the scenic images of green villages in the past. These new informal structures were built without formal planning permission from the state and displace

Figure 28: Variety of cheap small boarding houses/rooms for laborers inside Dusun (2010). Private Collection

greenery land-use with solid brick structures. De-territorialization of traditional agricultural settlements into new urban territory is occurring step-by-step as pressure on local peoples' economical practices indirectly removes local peoples' initiatives and existence from the memory of their homeland.
However, we cannot deny the benefit of these informal structures to the communities and to the formal economic system in general.

Some money resulting from these businesses has been used to develop some kampong infrastructures and facilities such as rebuilding of the mosque and repairing

Keterangan :

: Kos-Kosan

Keterangan :

Waste collection point

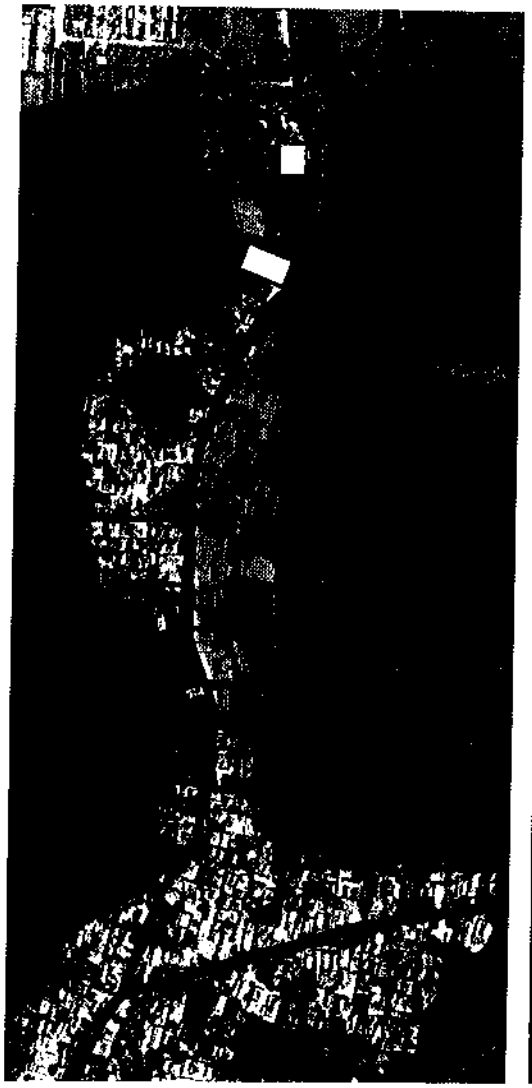


Figure 29: Map of Simple boarding houses/rooms for laborers (2010). Private collection. Fig. 30. Map of Waste Collection Points (2010). Private Collection.

village roads. Some people obtain direct benefits from these activities such as those who repaired or changed their houses into more permanent ones or some embark on the pilgrimage to Mecca. Informal structures have become a new powerful system in the cultural evolution of community, which transformed an agriculture based community in the past to modern capitalist society. These informal businesses have provided new fields of work for the local community and should be accommodated and prioritized by the local government in order to avoid worsening urban tragedies.

Conclusion

There is a disadvantage impact on regional planning of Karawang, especially with imbalanced development between industrial corridor and the growth of informal structures which are represented through unplanned or disorderly patterns encroaching on paddy-fields and Native settlements. Lack of attention and response from the government in managing the appearance (or qualities) of these informal structures are caused by the inability of government to formulate strategies for social-cultural development. Many would argue that social cultural developments do result in physical structures and as such they are more important. Therefore, the government needs to review its development strategies in its entirety and try to integrate and coordinate its development practices by avoiding sectoral approaches that only create partial or short-term solutions. Local people socially need to be empowered through certain educational capabilities in facing the forces of capitalist power which presently have changed Karawang landscape dramatically. Therefore, a new concept to accommodate and develop these informal structures must be based on socio-cultural approaches and community development. It is hoped that community can be self-motivated to make these changes and can creatively find solutions to survive from the pressures of modern industrial capitalism.

End notes

[1] Karawang history can be traced back to a long time ago from Tarumanegara Kingdom (358-669 AC) which was predictably located in Karawang. The area is 1,753.27 sq.km. in size and consists of 30 districts and 309 villages that are edged by Bogor and Cianjur Regencies in the south, Java Sea in the north, Bekasi Regency in the west, Subang Regency in the east and Purwakarta Regency in the southeast. The total population of Karawang is 2,055,469 inhabitants (according to national census 2007), and during 2007 industrial sectors absorbed laborers of almost 5,746 people.

[2] Geographically, most of Karawang is on flat land and only the southern areas are slightly hilly. Two rivers flow through this area. The biggest one is Citarum River which flows from south to

the Java Sea on the north and separates Karawang from Bekasi, while other river ,namely the Cilamaya River, separates Karawang from Subang. In order to support its entire farm lands that spread across the region, there are three main irrigation canals: North Tarum, Central Tarum and West Tarum which are utilized for padi-fields, fishery, industry, electrical plants and people's daily lives.

[3] There is no exact data, where these people came from. The information of these names is obtained from H. Oma and H. Khasim who live in Rawa Rengas and are descendants of these people.

[4] ....., Initial Report of Environment, Planning, and Development Guidelines for the Karawang Integrated Industrial Corridor (Depok: Department Architecture University of Indonesia, 2009).

[5] Lippard (1997: 172).

Bibliography

....., 1987. *Data Pokok Pembangunan Daerah Kabupaten DT.II Karawang 1987.* Karawang: Pemda Kabupaten DT.II Karawang.

....., 2005. *Data Sosial Ekonomi Masyarakat Jawa Barat Tahun 2005 – Hasil Susenas 2005.* Bandung: BPS Propinsi Jawa Barat.

....., 2006. *Data Sosial Ekonomi Masyarakat Jawa Barat Tahun 2006 – Hasil Susenas 2006.* Bandung: BPS Propinsi Jawa Barat.

....., 2009. *Interim Report of Environment, Planning, and Development Guidelines for the Karawang Integrated Industrial Corridor.* Depok: Department of Architecture University of Indonesia.

....., 2008. *Karawang Dalam Angka 2008 – Karawang in Figures 2008.* Karawang: BPS Kab. Karawang.

....., 2006. *Produk Domestik Regional Bruto Kabupaten Karawang Menurut Lapangan Usaha – Gross Regional Domestic Product of Karawang Regency by Industrial Origin 2006.* Karawang: BPS Kabupaten Karawang & Bapeda Kabupaten Karawang.

....., 2007. *Seri Kependudukan Tahun 1920-2007.* Bandung: BPS Provinsi Jawa Barat.

Angel, Shlomo, dkk (ed)., 1983. *Land for Housing the Poor.* Thailand: Select Books.

Borden, Iain; Kerr, Joe; Rendell, Jane; & Pivaro, Alicia (Eds.)., 2001. *The Unknown City; Contesting Architecture and Social Space.* London: The MIT Press.

Castells, Manuel, translated by Lebas, Elizabeth., 1980 *City, Class and Power.* London: The Macmillan Press.

Cater, John, & Jones, Trevor., 1989. *Social Geography.* London: Edward Arnold.
Cloke, Paul and Little, Jo (eds.), 1997. *Contested Countryside Cultures: Otherness, Marginalisation and Rurality.* London and New York: Routledge.

Graham, S. and S. Marvin, 2001. *Splintering Urbanism: Networked Infrastructures, technological mobilities and the urban condition*. London & New York: Routledge.

Hardin, Garrett, 1968. "The Tragedy of the Commons," *Science* 162 :1243-1248

Jameson, Fredric, 1991. *Postmodernism or The Cultural Logic of Late Capitalism* London and New York: Verso.

Keith, Michael & Pile, Steve (eds.)., 1993. *Place and the Politics of Identity*. London: Routledge.

Lefebvre, Henri, 1999. *The Production of Space*. Oxford: Blackwell Publisher.

Lippard, Lucy R., 1997. *The Lure of the Local, Senses of Place in A Multicentered Society*. New York: The New Press.

Pile, Steve & Keith, Michael (eds.)., 1997. *Geographies of Resistance*. London: Routledge.

Tuan, Yi-Fu., 1977. Space and Place, *The Perspective of Experience*. Minneapolis: University of Minnesota Press.

Tuan, Yi-Fu., 1974. Topophilia, *A Study of Environmental Perception, Attitudes and Values*. New Jersey: Prentice-Hall Inc.

Wood, Ellen Meiksins, 2003. *The Empire of Capital*. New York: Verso.

ANALYSING THE MORPHOLOGICAL CHANGES IN VERNACULAR DOMESTIC ARCHITECTURE OF KERALA, INDIA SINCE 1947

B S Bhooshan, Manoj Kumar Kini

Abstract

This paper discusses morphological changes in the vernacular domestic architecture in Kerala since 1947 (Independence of India from colonial rule) and identify the changes and analyses the reasons behind these changes. The study focuses on the gradual and vernacular architectural developments happened within the study region owing to several factors like social and political reforms and related, government initiated land reforms, migration to other parts of India and to foreign countries in search of better jobs and income, related economic factors, colonisation, change in technology and work expertise, change in materials, change in lifestyle, global exposure through channels and other communication system, climatological factors etc. The vernacular domestic architecture has undergone tremendous transformation owing to these factors and can be identified with specific typologies emerging. The major questions posed here are,

1. Can visual memory of Vernacular transferred to the contemporary architecture be considered vernacular or even designed vernacular?

2. What is the essence of Vernacular? Can we decipher the Diacritical mass that makes something remain vernacular and something cross the borderline?

3. Vernacular is ever evolving. Is there a stop point for a continuing vernacular construction practice? How do we define the tipping point, if any?

Keywords: *Vernacular, Domestic Architecture, single Aroodam house, Dwelling, Kerala*

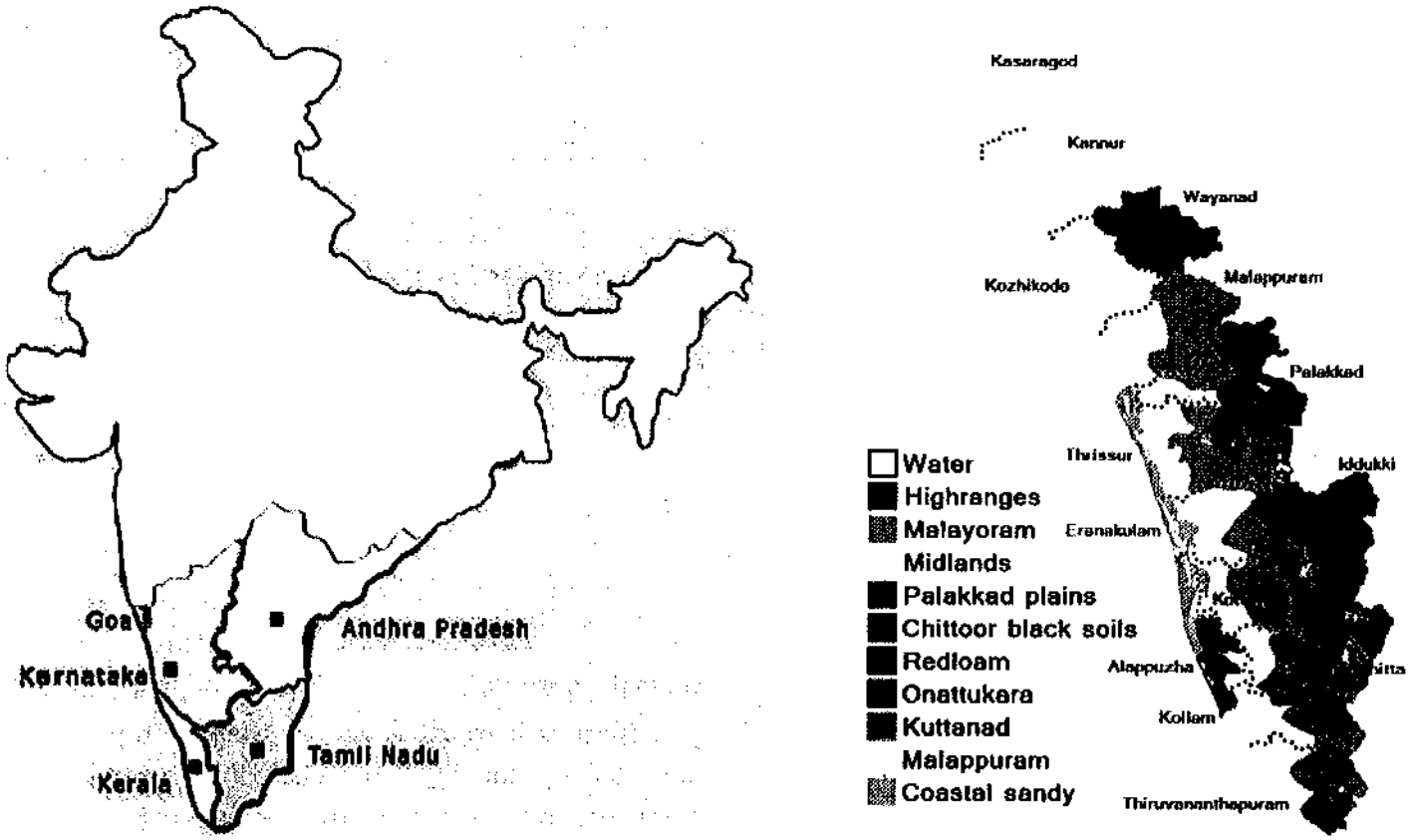


Figure 1: Map showing Kerala and its location (not to scale) (source: http://www.prokerala.com/kerala/maps)

Kerala (in South India) architecture is one of the most evolved examples of wooden construction and timber joinery having had multiple foreign influences[1] . Kerala has seen transformations and changes in cultural and economic landscape, especially in the last century. The traditional construction practices evolved accounting for local needs, materials and skills. The production process was dominated by artisans themselves[2] . Requirements of thermal comfort in the tropical climate as well as the inhibitions and restrictions governed by social structure and cultural practices defined the evolution of typology of spaces and roof forms and construction details. But they were also governed later by construction details ordained by the indirect influence of classic treatises propounded by priestly pundits[3]. To this extent, a classic vernacular evolved.

The common use of the term "vernacular" is not the same all the times. Therefore it is imperative to explain the meaning of that term as used in this paper. Considering a working meaning, 'vernacular' houses are "those built of traditional materials and in the style of the locality". They are designed generally by amateurs, in this case the local masons, artisans and carpenters or occupants themselves, going by the local conventions and their own requirements as well as the means available with them[4] . Therefore, the function becomes the most important feature. Tradition guided the construction and the local materials were an obvious choice for construction. It is 'architecture without an architect' (any other professional as known today) in contrast to other buildings designed by an architect/engineer, who are formally educated[5] . The case of Kerala is as indicated a case of classical vernacular, which may be contrasted with more amateur owner built forms elsewhere. The carpenters were original professionals there in that sense.

The natural building materials available for construction in Kerala i.e. stones, timber, clay

[1] *P 52-56, the legacy of kerala Dr A Sridhara Menon, 2008*

[2] *P 1-3, Traditional architectural forms of the Malabar Coast, Dr Ashalatha Thampuran, 2008*

[3] *P 52 the legacy of kerala A Sridhara Menon, 2008*

[4] *P 2, Traditional architectural forms of the Malabar` Coast, Dr Ashalatha Thampuran, 2008*

[5] *P116-118 kerala smaskaram, A Sridhara menon*

and palm leaves have anchored and guided the construction practice since ages. Due to the limitations of building materials, a multi modal approach of construction was evolved in Kerala. Stone work was restricted to the plinth even in prestigious buildings including temples and palaces. The indigenous adoption of the wood (available *in plenty*) for architectural expression thus became the dominant feature of the Kerala architecture. The carpenter was the presiding artisan, often governed by the detailed rules of traditional joinery called '*thachu shastra*'[6] . The vernacular tradition has evolved giving rise to many house forms longitudinally and latitudinally along the Kerala region. One of the most distinguishing features of settlements in Kerala and people's living habit has been detatched homesteads or houses. To this day the domestic architecture of Kerala follows the style of detached building. It has not changed much.[7]

However, the changes in the economy, social conditions and position of women in society have all created newer demands of space. This along with the introduction of new technology, more so the RCC[8] and scarcity of timber, changed the construction techniques. The import of cultural artefacts through education and work and migration also influenced the living styles. Together with the craving for novelty, searching a new identity derived from past albeit manufactured one often, is in the process of creating a new vernacular life style and architecture[9] . The mason became the prime artisan usurping the place of the carpenter. Yet, the imagery lingers and is being reinvented, in various ways often in a curious mixture. The autonomous, (without conscious professional design) changes in the house forms seem to undergo changes in smaller quantities at a time retaining some features and changing some others. There are conscious efforts to deviate substantially and at the same time there are conscious efforts to retain the traditional features. The question to be asked, however, is what is the critical mass of the features which retains the original flavour and what features deviate away.

The paper is to bring to light the changes that have happened in the vernacular traditions in Kerala over the years and to analyse the morphological and typological transformation of domestic architecture special reference to post independence period. More in a conceptual framework analysing known sources and not with elaborate field work. The case studies analysed has been identified from, Kollam region of Kerala state in S.India. The primary data was collected by documenting some cases in this region. A number of cases were analysed to identify the elements that contribute to the visual memory of vernacular architecture among which the roof was identified as the predominant one.

Based on this, the two commonly found house typologies of Kerala region are

1. Independent house with single aroodam, (about 80%)(otta thai)[10]

2. Single house with courtyard (a Nalukettu. (less than 20%) [11]

[6] *The traditional treatise of timber construction of Kerala region*

[7] *P53-55 evolution of kerala history and culture prof T K Gangadhran*

[8] *Reinforced Cement Concrete*

[9] *P 297 cultural heritage of kerala ,A sridhara Menon*

[10] *Arudam is also known as thai uttaram,thai means mother in southern kerala as noted in p no 104,traditional architectural forms of Malabar Coast Dr Ashalatha thampuran*

[11] *P 30,Traditional architectural forms of Malabar Coast Dr Ashalatha thampuran*

Figure 2: A single aroodam dwelling, Kalangara house,in Chavara, Kollam, kerala India

Single Aroodam houses (otta thai)

All the morphological variations found in this region are invariably an improvised morphological variation of any of these typologies. The single aroodam house is the most common and easily adoptable typology that has continuously been reinvented from 9th century to the present day[12] . The study is focused on the morphological analysis of the single aroodam house (otta thai) from the past to the present.

Kerala has made its notable contributions to the science of architecture, both secular and religious. The Tantrasamuchaya, Vastuvidya, Manushyalaya-Chandrika[13] and Silparatna are well-known treatises on the subject[14] .

The traditional houses of Kerala were mostly built in accordance with the principles of 'Thatchushastra', the science of carpentry and 'Vaastushastra' the ancient Indian **intrepretation** of architecture.

The dwelling form directly reflects the structure, the relationship and functioning pattern of the family/society, which in turn come from a common culture, a common unwritten set of rules or codes that are accepted and followed by a collective will. Observation method is used to assess the importance or significance of the physical change apart from simply identifying the direction of change. While analysing it is to be understood that the changes could be either 1. core/fundamental changes or 2. peripheral/superficial changes

Core/fundamental change: these are changes noticed in the built form which suggest a very fundamental or significant change in the vernacular idiom. Any significant change to the core concept and physical elements of the existing vernacular idiom would mark a fundamental change. These could be change in the spatial organisation, planning layout, functional/aesthetic elements or usage of spaces in a single building.

Peripheral/superficial changes are changes in the aspects of built form that suggests that the fundamental ideologies or beliefs of the user group have not changed. Such changes would therefore not be seen in the core spatial distribution or concept and physical elements. There can be superficial skin changes in the way elements are detailed out with regional dialectic variations. This constitute mostly of scenographic elements.

In this paper we are focusing largely on the fundamental changes that happened in the *single aroodam* typology.

[12] P 30-32Traditional architectural forms of Malabar Coast Dr Ashalatha thampuran

[13] The Manushyalaya Chandrika is a treatise devoted to domestic architecture of kerala region by mangalathu neelakantan namboothiri.

[14] P 52 the legacy of kerala Dr A Sridhara Menon

Figure 3: Traditional house form of kerala, Mavelikkara (,Archives, British library)the figure shows a typical single aroodam house of central kerala region with a poomugham in the front.the predominant identifying feature is the thatched roof.

House form

The early single aroodam house models were huts made of bamboo frame thatched with leaves in circular, square or rectangular plain shapes. The rectangular shape with a hipped roof appears to have been finally evolved from climatic and functional consideration. Structurally the roof frame was supported on the pillars on walls erected on a plinth raised from the ground for protection against dampness and insects in the tropical climate. Often the walls were also of timbers abundantly available in the land. The roof frame consisted of the wall plate which supported lower ends of the rafters, the upper ends being connected to the ridge. The interesting feature of this method was of developing the rafters of both opposite slopes together and tying them with a series of ties thus making the rafters function as an A frame. Use of trusses was totally avoided. The weight of the rafters and the roof covering created a sag in the ridge when the ridge piece was made of flexible materials like bamboo[15]. This sag however remained as the hall-mark of roof construction even when strong timber was used for the roof frame.

Further gable windows were evolved at the two ends to provide attic ventilation when a flat ceiling was incorporated for the room spaces. This ensured air circulation and thermal control for the roof. The lower ends of the rafters projected much beyond the walls to shade the walls from the sun and driving rain. The closed form of the Kerala houses was thus gradually evolved from technical considerations. The main door faces only in one cardinal direction and the windows are small and are made like pierced screens of wood. The rectangular plan is usually divided into two or three activity rooms with access from a front passage. The projecting eaves cover a verandah all round, protecting the wall from both sun and rain.
The roof was the decisive factor for the development of the two-dimensional layout. The traditional timber roof architecture was highly evolved designed joinery detailing. The *thatchan* (master carpenter) was the chief person who decided the size shape and height of the structure. The *aroodam* (rectangular base plate) was assembled first and used to be raised at the predetermined height above the plinth with the help of temporary wooden supports. The rafters (forming the roof called koodu) were made at

[15] *Observation from the Case studies conducted by author as a part of, Phd programme at CEPT Ahmadabad*

Figure 4: A single aroodam house with pathayappura, at chavara, Kulangara house,chavara,kollam, kerala .the koodu is supported by the aroodam(wall plate supported by the wall and the wooden pillars.

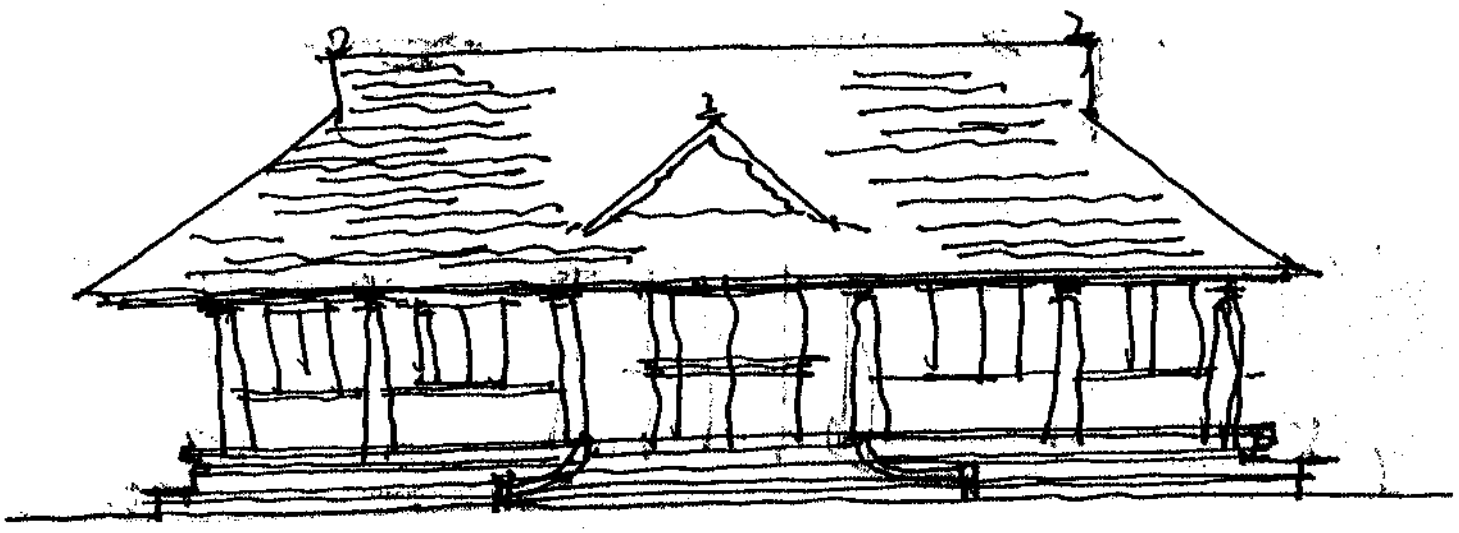
ground with precision. The walls were raised to touch the Aroodam and then the *koodu* is assembled above. Thampuran's study also makes this point[16]. Additional spaces were created around the central rectangular Aroodam by the way of lean-tos locally known as *chayipu*. These construction practices were based on highly evolved geometrical patterns of roof (timber) based on authentic treatises (classical vernacular roofs) and was strictly followed in design and construction. All extensions to the basic Aroodam were lean-tos which provided for individual innovations.

The plan

The plan form is basically a rectangle divided into segments. These plan forms are self contained independent residential units which take care of different activities associated with a residence. As Dr.Thampuran points out the core of the ekashala is used for storage, living and sleeping where as the extensions take care of the supporting activities[17] . The central segment was the prominent space called *akathalam* connecting all the peripheral segments. The walls of the central segment support the aroodam. The surrounding segments are created by extending the rafters from the aroodam to the periphery of the wall. These segments are technically called *chayippu*. These *chayippu* in the entrance side (usually from East or North) is usually named as *irayam*, or *kola* for receiving and seating guests. The *pinnapuram* behind for multipurpose related to the household or rooms for sleeping (ara) or storage(pathayapura)[18] on the sides. In certain cases some of the *chayippu* are kept open as *vernadahs* used by female and child members of the family. **Some earlier studies have recorded many variations of this basic roof configurations.**

Transformations: This basic plan of central segment (*akathalam* and the surrounding spaces generated by extending the rafters (*chayippu*) were Common features in the single **aroodam** houses of the past as noted. **The rectangular geometry was kept intact for most transformations until the early half of last century.** The new spaces or rooms

[16] *Koodu is the composed wooden frame of the roof form of traditional buildings*
[17] *P 128,traditional architectural forms of Malabar coast ,Dr Ashalatha Thampuran*
[18] *This is the grain store of traditional house in kerala*



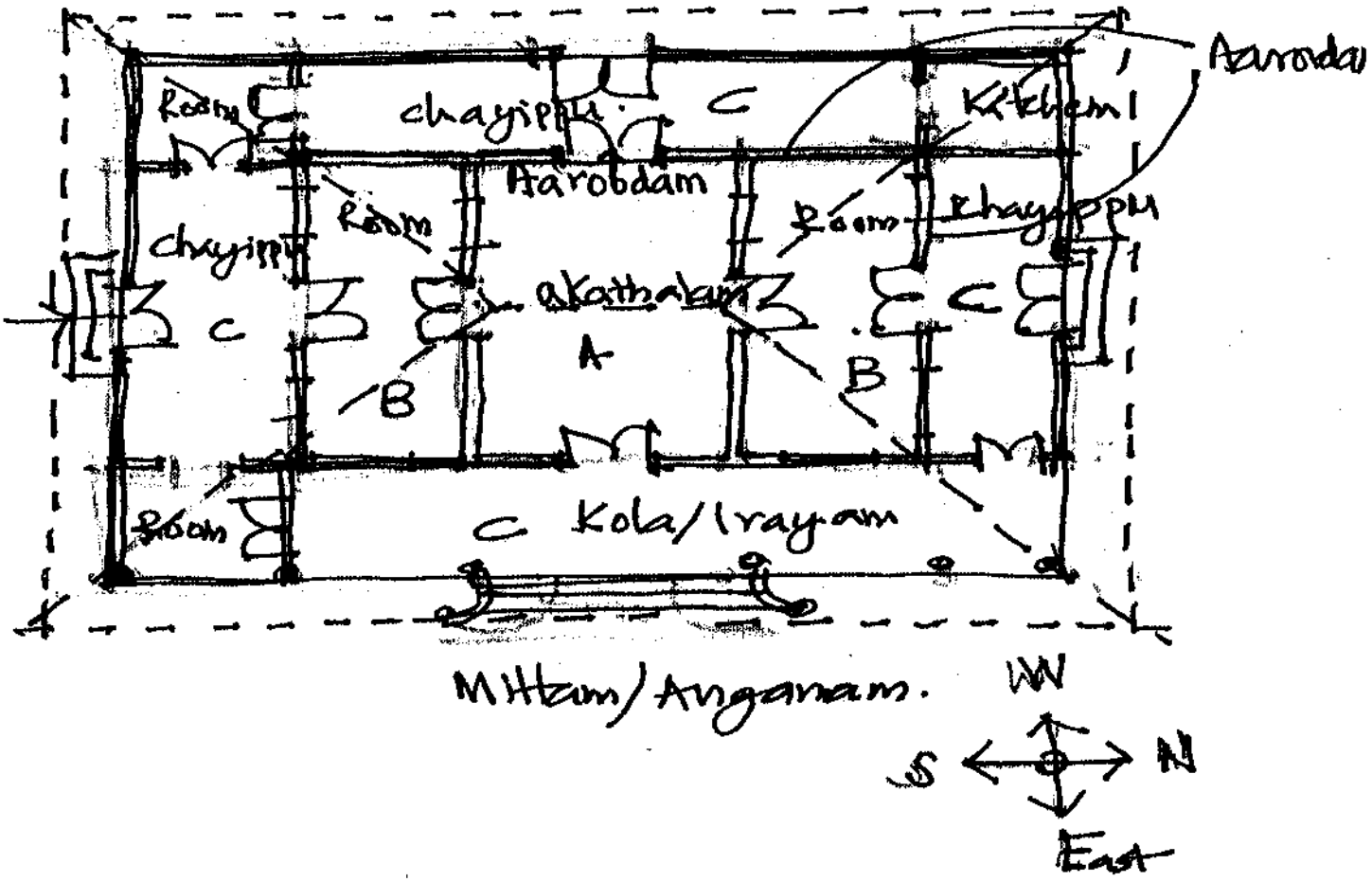


Figure 5: a schematic sketch showing the typical space layout of a single Aroodam house. The central place contins the three rooms here. The position of the kitchen could be in any of north east or northwest corner usually.

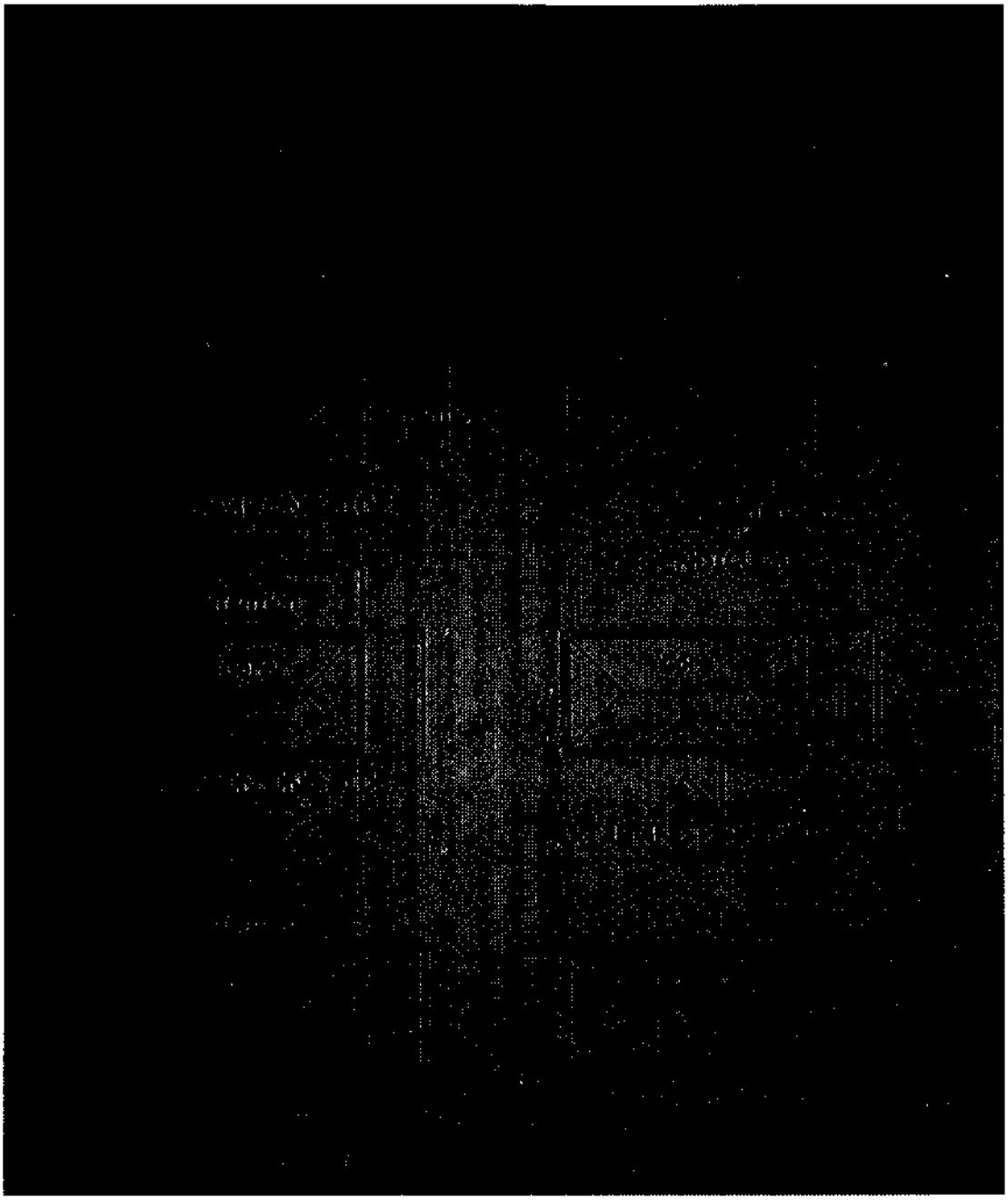


Figure 6: Variations seen in the Core and extension of single aroodam houses (otta thai), Source: (Tradtional Architectural forms of Malabar Coast, Dr. Ashalatha thampuran,2001)

were added as extensions to all the sides without changing the **akathalam** and aroodam. In other words the koodu/the traditional rafter roof was the guiding factor in the planning of a dwelling space, a single room house to multi room houses.

The colonial influence brought in a number of changes like increase in the size of the rooms, concept of furniture and attached bathrooms and relative increase in the height of the structure the basic single aroodam with central segment continued as a typological pattern. Attached extensions were made to the central space to all the sides to incorporate new needs. Basically two fundamental changes can be observed, 1. The introduction of formal spaces for receiving guests later came to be commonly termed as drawing rooms or spaces. This happened largely as a transformation of the *Kola or irayam*. 2. The introduction of larger exclusive bed rooms and bath rooms and toilets. The baths and toilets first introduced in the region as independent appurtenances slowly became part of the house mostly attached at the back of the house. The changes in occupations resulting in a growth of

monotony of the wall was treated by ornamentation and designs of fenestrations. New elements such as show wall, parapet fins, buttress walls etc started appearing. These new middleclass with new occupations or government jobs with developing social norms where guests of other castes are also received to the house required the introduction of formal drawing rooms, once considered a 'modern' requirement. So was the case of bath rooms.

The second half of twentieth century saw tremendous changes in the construction sector with changes in socio- economic conditions, out migration, exposure to other construction practices and changes in construction technology and materials. The major factor for change was the introduction of RCC as the material for roofing. There was flexibility in terms of the planning with respect to the roof. The role of thatchan (master carpenter was reduced to just production of joinery for door and window frames. The mason became the master. The wall became the prominent feature and the traditional sloping wooden roof with Mangalore Pattern tiles was replaced by RCC flat roof. For a while at least part of the house were made of RCC or Madras terrace, largely as thing of status value. Even then the general planning concept of the central segment with extending segments around was kept intact. The flexibility provided by the new material combined with the new needs of attaching toilets and private personal spaces lead to interesting extensions from the conventional plans.

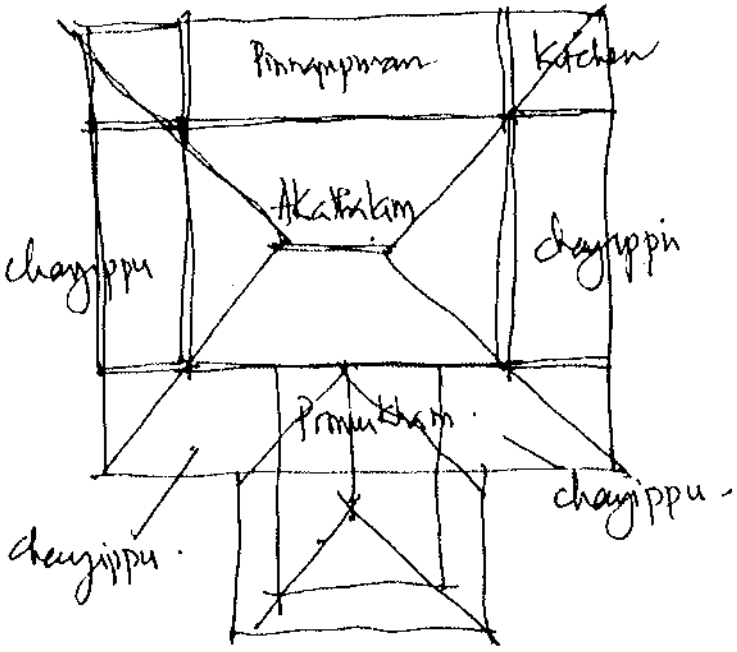


Figure 7: a schematic plan showing the spatial disposition of the segments in a single Aroodam house

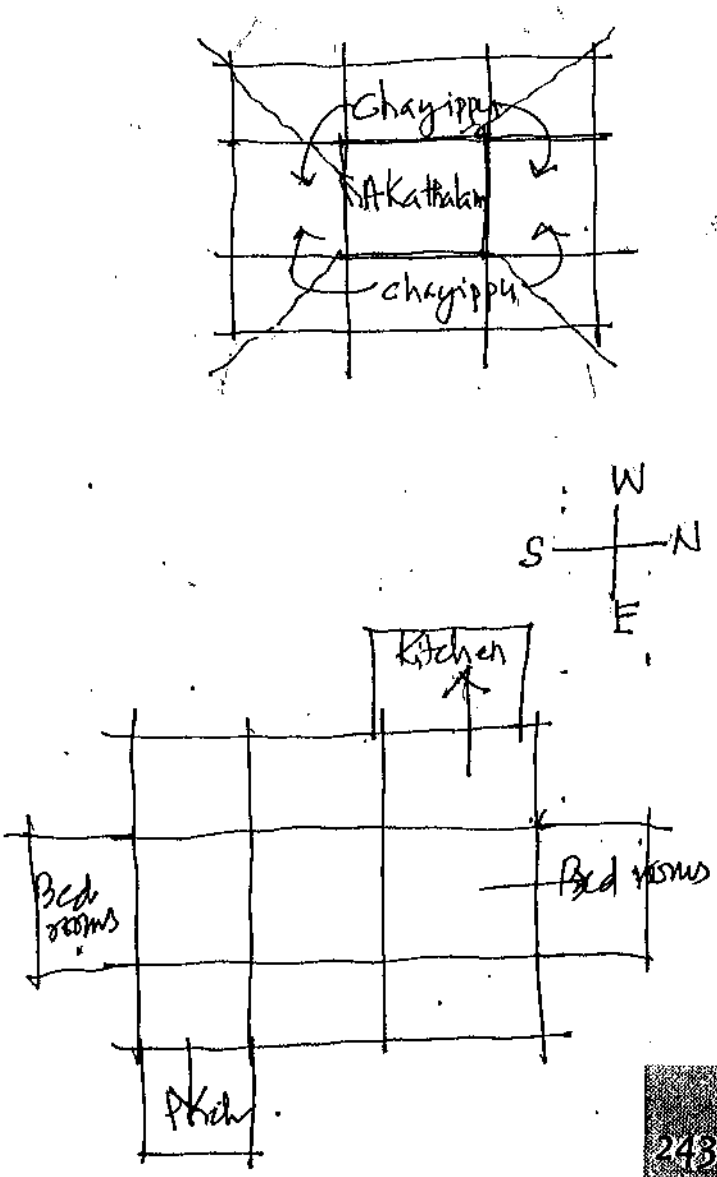


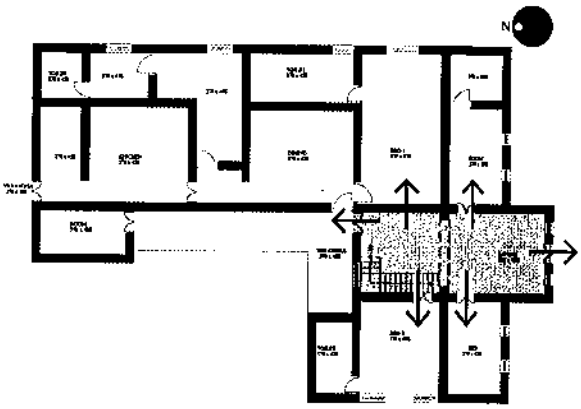
Figure 8: spatial extentions to the single Aroodam house towards the side .The essential central space and the extentions (chayippu) to the sides is continued as seen

The stylistic changes became necessary as the RCC made the walls o bare and became the main elements and importance of the roof was reduced. This fundamental change could not replace the aesthetic idea of details in every segment of the earlier wooden wall. We suggest that without the caping roof, perhaps people felt the house bare and introduced these stylistic elements on the walls.

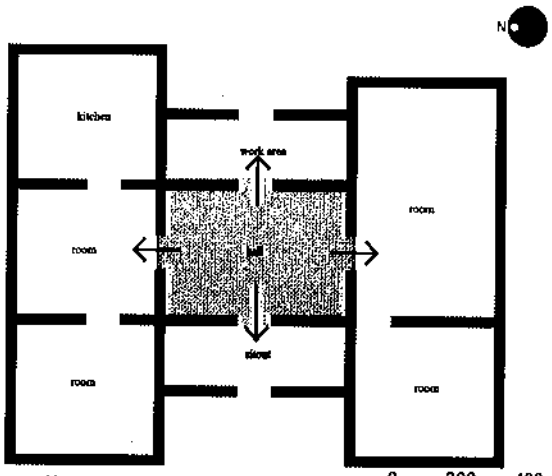
The middle of the latter half of 20th century saw massive out migration to gulf and the Middle East and tremendous change in the soico-economic profile of the region. This added a number of spaces like pantry kitchen, pooja rooms, attached dressing spaces to bathrooms for each bedroom, office space, family living etc. There was a rethinking in the roof form. RCC sloping roof with the traditional features started reappearing. The RCC roof with Mangalore Pattern tiles on top became an essential feature of the houses of this period. The elements like gables (*monthayam*) and roofs with multiple heights all were repeated but with RCC. The ornamental features like finials, makudam, eave boards all were repeated using cement. A later version of flat roof with sloping steel truss work with Mangalore pattern tiles are seen in many place in the region. Once again the geometry of the roof started defining the two dimensional plan.

The second typical and advanced typology of the Kerala house is a courtyard type - Nalukettu. Depending on the size and importance of the household the building may have one or two upper storey or further enclosed courtyard by repetition of the nalukettu to form ettukettu or a cluster of such courtyards. Nalukettu is a combination of four halls along four cardinal directions, centred around the courtyard or *anganam* one may build any one of the four halls (*ekasala*), a combination of two (*dwisala*) or a complex of three (*thrisala*) depending on the needs. The most commonly found type in Kerala is the *ekasala* facing east or north. The core unit of *ekasala* consists of generally three rooms connected to a front passage. The central room is used as prayer room and grain store and the two side rooms are used as living rooms. The core unit may be raised to an upper storey with a steep stair located in the front passage. The building may also be extended horizontally on all the four sides adding side rooms for activities such as cooking, dining, additional sleeping rooms, front hall for receiving guests etc. The tharawads all ways remained as a house for feudal lords (*janmis*).This was a symbol of richness, where the masses followed the typology of single *aroodam* houses.

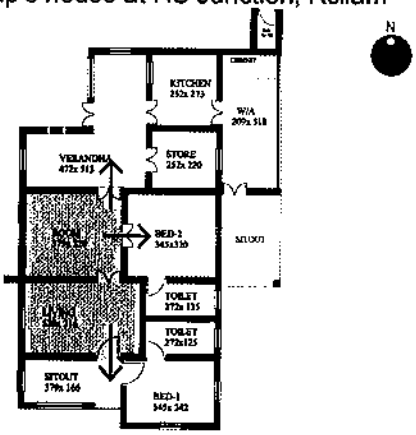
Transformation of Plan Form



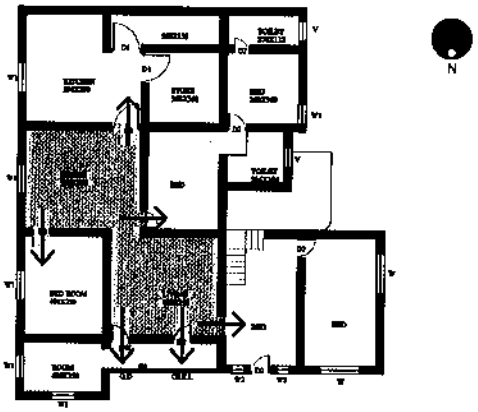
Case I
MamenPhilip's house at HS Junction, Kollam



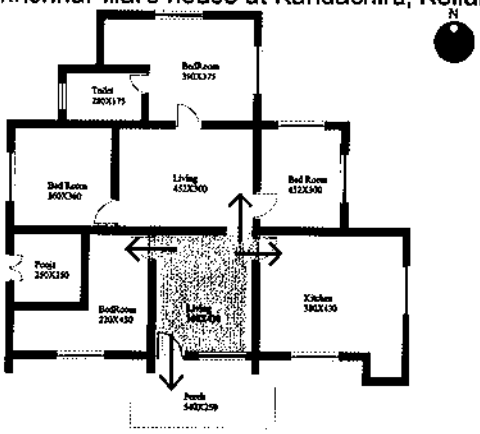
Case II
MohanLal's house at 2nd mile stone,Kollam



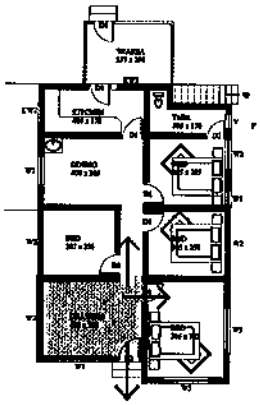
Case III
RamakrishnaPillai's house at Kandachira, Kollam



Case IV
Radha Krishnan's house at Kottamukku, Kollam



Case V
Parameswaran's house at Kottamukku,Kollam



Case VI
Dr.Sasi's house at Kadappakkada,Kollam

relative positioning of the central space with respect to the plan

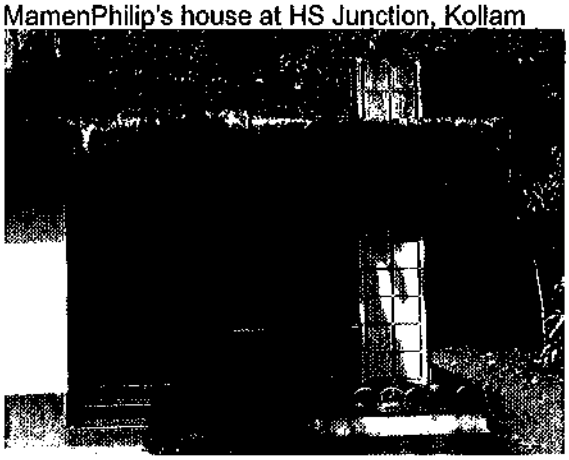
central space
subsidiary space

Figure 9: The case studies conducted at kollam region, kerala shows the changes in spatial configuration discussed. The concept of core and the periphery is seen in all the cases with variations in relative positions

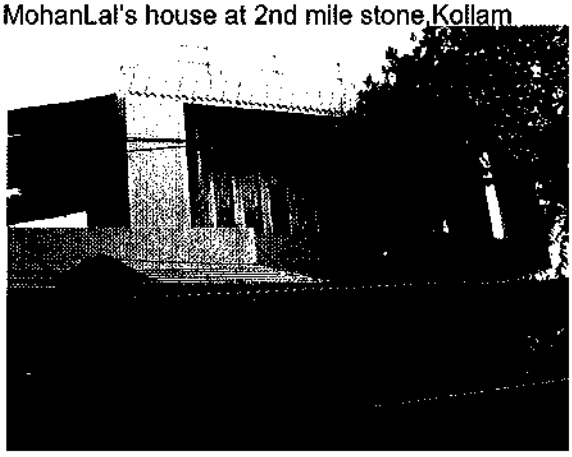
Roof Transition

Case I
MamenPhilip's house at HS Junction, Kollam

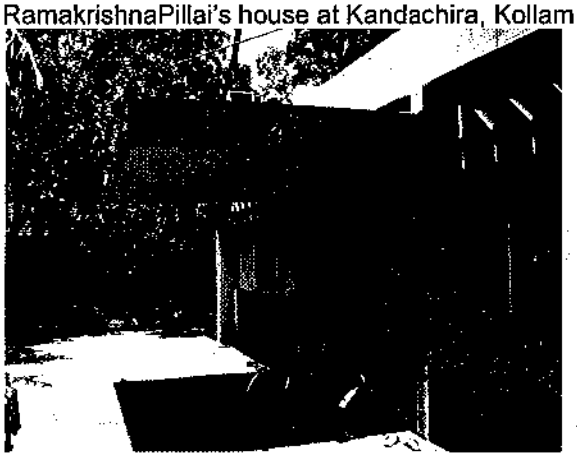
Case II
MohanLal's house at 2nd mile stone,Kollam



Case III
RamakrishnaPillai's house at Kandachira, Kollam



Case IV
Radha Krishnan's house at Kottamukku, Kollam



Case V
Parameswaran's house at Kottamukku,Kollam

Case VI
Dr.Sasi's house at Kadappakkada,Kollam

note the cyclic change of the vernacular elements from case-I (1950)-case-VI(2010)

Figure 10: Case studies reveal the features which retains the original flavour and what features deviate away. Cases chosen from AD 1950 to AD 2010

Transformation of Houses, Kerala,India

se- 1

case- 2

case- 3

se- 4

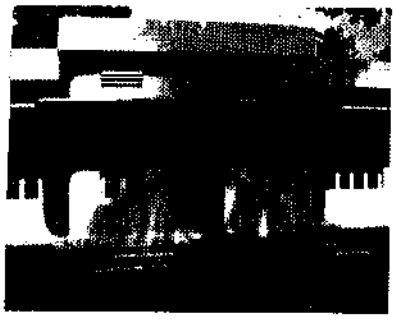
case- 5

case- 6

Figure 11: The following cases show the typological transformation occurred in various periods starting from 1950 to the present day. Case 1 represents the first shift from the traditional roof and case 2 and 3 represents the different typologies of sloping roof on the single Aroodam. In case 6 to case 9 the change from sloping roof to flat roof can be seen.

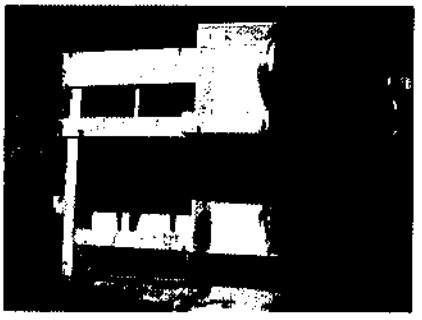
Figure 12: various Stages showing the transformations. The reappearance of the sloping roof can be seen from case 11 and continuing till case 17 in various forms

se- 7

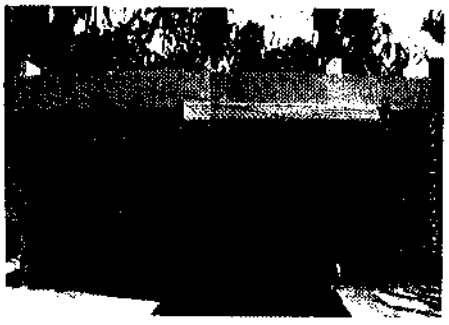


case- 8

case- 9



ase- 10



case- 11

case- 12

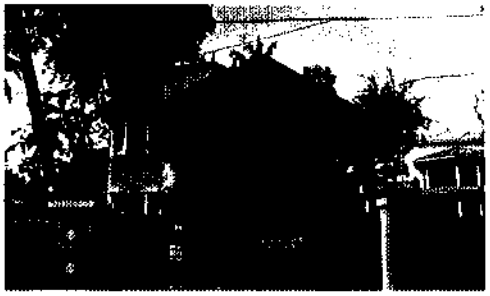
case- 13

case- 14

case- 15

case- 16

case- 17



case- 18

Conclusion

The discussion above, point out to the way in which vernacular architecture (the way people build unselfconsciously) makes cyclical evolution. The changes in economy such as occupation pattern, incomes and their distribution etc., resource situation like land availability and easy availability of newer materials, the exposure to other cultures through various means resulting changes in living styles and patterns, changes in gender relations, development of nuclear households and social relations to be accommodated within the house and more importantly projection of houses and their architecture as symbols of status have made the evolution undergo a gradual yet significant shift and modification over time, yet trying to reinvent the roots reversing the trends and modifying it in the process.

The changes in plan configuration of the single *aroodam* middle class house occurred with reference to the change in the way people started living with more socializing and requiring guests who are not relatives and also from different castes to be entertained or invited in the house. A new sense of privacy influenced the spaces. The *kola* or *irayam* extended further outward and became *poomukhom* and later into a drawing room. Similarly the separate bed rooms became important and toilets (once considered polluting ritually) also made demands. Kitchen also changed its function and style with mass cooking for agrarian houses going away and servants becoming rare to get. The changes were accommodated with marginal shifting of the spaces and yet within the parameters determined by the sloping roof - local joinery system. In terms of the architectural 'style' (to use a word in the absence of a better word), the sloping pyramidical tile roof still was the dominating element. Often covering more than half in some cases up to two third of the total height in elevation. The rain still influenced and manifested in the form of architecture.

Second wave of changes occurred with the advent of new material and technology like reinforced cement concrete. This changed the way plans could be accommodated. Yet the changes were not drastically different in its basic configuration. Drastic changes occurred only as deviance not as a rule and more because of professional involvement. Once the flat roof was a fashion statement, at least a portion in the front. The concrete flat roof suddenly changed accent from the roof to the wall. The mason became more important than the carpenter. The wall has to be treated and that reflected in the need for an 'elevation'. The standardization and restrictions imposed by the traditional wooden tiled roof vanished. This phase of advent of modern architecture in Kerala was also at a time of the rise of rationalism, objectivity and democratic evolution, an admiration for science and technology, and the value of an egalitarianism. The current and the third wave of changes is in a way a reaction to this and is being propelled by the urban middle class and the lamentation of going back to the *'original Kerala culture'* and a rather invented 'Kerala Style'. Now the sloping tile roof has comeback but with RCC base with tile being pasted on it. It is really a reappearance of the mental image of the original being applied on to a contemporary technology. The form with the dominance of roof is being accepted as 'Kerala style'. The real estate market is also reacting to this by appropriating the sentiments. When the space configuration and technology changed, the search is on to a dominant element in form which gives an image of the past. The 'critical mass' in the popular sentiment, is the dominating roof of tiles, though produced by entirely different production process and often a different design process as well. There appears an amount of 'myth creation' in this process. Is it a reinvention of visual memory? Is it vernacular or designed vernacular? In that case vernacular only offers a visual image like a catalogue of forms. The diacritical mass then is determined by mere sentiments of the current fashion or is there something more basic in this process? In the evolutionary process, the formal parts of the society and economy such as market mechanisms, professional services (architects/building industry) and the sentiments of the people all are involved. The original images and visual memory also get transformed and perhaps a current vernacular evolving.

Bibliography

Dr. A Achyuthan and Dr. T S Balagopala Prabhu, Architecture of traditional buildings- retrospect and prospect, an article in Stapathi journal (Apr-Sept 2003), Vastuvidya Prathishtanam, Calicut

Dr. A Achyuthan and Dr. T S Balagopala Prabhu, Architecture of traditional buildings- retrospect and prospect, an article in Stapathi journal (apr-sept 2003), Vastuvidya Prathishtanam, Calicut

Dr.Ashalatha thampuran,traditional Architectural Forms of Malabar coast,2001,Vasthu Vidya Prathishtanam,Calicut

Ashok Lall, Evolving traditional practices for sustainable construction in the present, New architecture and urbanism- development of Indian traditions, The NABHA foundation & INTBAU India

Gangadharan T K ,evolution of Kerala History and Culture, Calicut central University Calicut

Hemant Shah, Traditional architectural attributes in contemporary architecture, unpublished thesis-1988, CEPT University, Ahmedabad

Ar. Paul Varghese, The 'Nalukettu' of Kerala- an analytical approach, an article in Stapathi journal (apr-jun 1999), Vastuvidya Prathishtanam, Calicut

Raman Namboothiripad, Reasons for modification of residential buildings, an article in Stapathi journal (jan-jun 2001), Vastuvidya Prathishtanam, Calicut

aptarishi Sanyal, Contemporary relevance of traditional principles in architecture and urbanism, New architecture and urbanism- development of Indian traditions, The NABHA foundation & INTBAU India

Dr Sridhara Menon A, The legacy of kerala,2008,D C Books,Kottayam

Dr Sridhara menon A,Cultural Heritage of kerala,2008,DC Books

Is tradition green? Panel discussion- INTBAU India, New architecture and urbanism- development of Indian traditions, The NABHA foundation & INTBAU India

Tradition and contextual relevance for education in architecture and urbanism, Panel discussion-INTBAU India, New architecture and urbanism- development of Indian traditions, The NABHA foundation & INTBAU India

DESIGNING THE VERNACULAR: AN INQUIRY IN THE PROCESSES OF MAKING IN KUTCH, INDIA

Sachin Soni

Abstract

As understood popularly, vernacular is not just a simplistic interaction between the climate, culture and craft, but rather a composite body of knowledge processes developed over generations of experience through trial and error in response to the needs of people occupying them and to the requirements of the changing physical environment around them.

With the hegemonic advent of present global monoculture, the evocation of sentimental vernacular seems quite a natural response in places with strong cultural traditions and their unique craft expressions. I am referring to that nostalgia for the vernacular which is being conceived as an overdue return to the ethos of popular culture. Rather than the critical perception of reality and creative synthesis, it rather evokes the sublimation of a desire for direct experience through imagery and rhetorical information. Its tactical aim is to attain, as economically as possible, a preconceived level of instant gratification in behavioristic terms.

The aim of this paper is to explore the issue of validating the vernacular and inherent contradictions within it through two recent projects in the Kutch region of Gujarat in India. First project, Khamir Crafts Park, is a nongovernmental institution working for the development of craft traditions of Kutch region while the second one, Sham-e-Sarhad is an eco-resort built and run by local residents of Hodka village in the desert of Kutch. As the building craft and artisanal traditions of this region are intrinsic to making of both these projects, this paper will examine the process of interpretation and reinterpretation and the nature of the resultant architectural synthesis.

Introduction

Both, architects and laymen alike, admire the unique qualities of vernacular architecture. These unpretentious built environments echo the characteristics of their geographical contexts, local materials and crafts; they seem to express the essence of their culture. Vernacular building traditions strengthen the experience of a place, the very source of our cultural awareness. These locales address all our senses at once and, speak pleasantly of the continuity of tradition and the passage of time. In this age of global monoculture, the evocation of sentimental vernacular seems quite natural response in places with strong cultural traditions. Rather than a meaningful engagement with the place, it evokes the sublimation of desire for a direct experience through instant information and preconceived imagery. In the midst of this air of nostalgia and hyper reality, how do you listen to the sounds of those locales and be true to the time and the place? Instead of looking for a final answer, this paper examines different approaches of interpretation and translation of the vernacular architecture by two recent projects, *Sham-e-sarhad* and *Khamir* Craft Park, in the arid region of Kutch in India. To broaden up the framework of observation, the paper eludes conventional ideas associated with vernacular and uses the phenomenological concepts of 'place' and 'sense of place' for a deeper understanding of the vernacular.

Kutch and its vernacular built environment

Situated in the northwest part of Gujarat, India,

Figure 1: Typical house unit of Banni (Jain 2000:80)

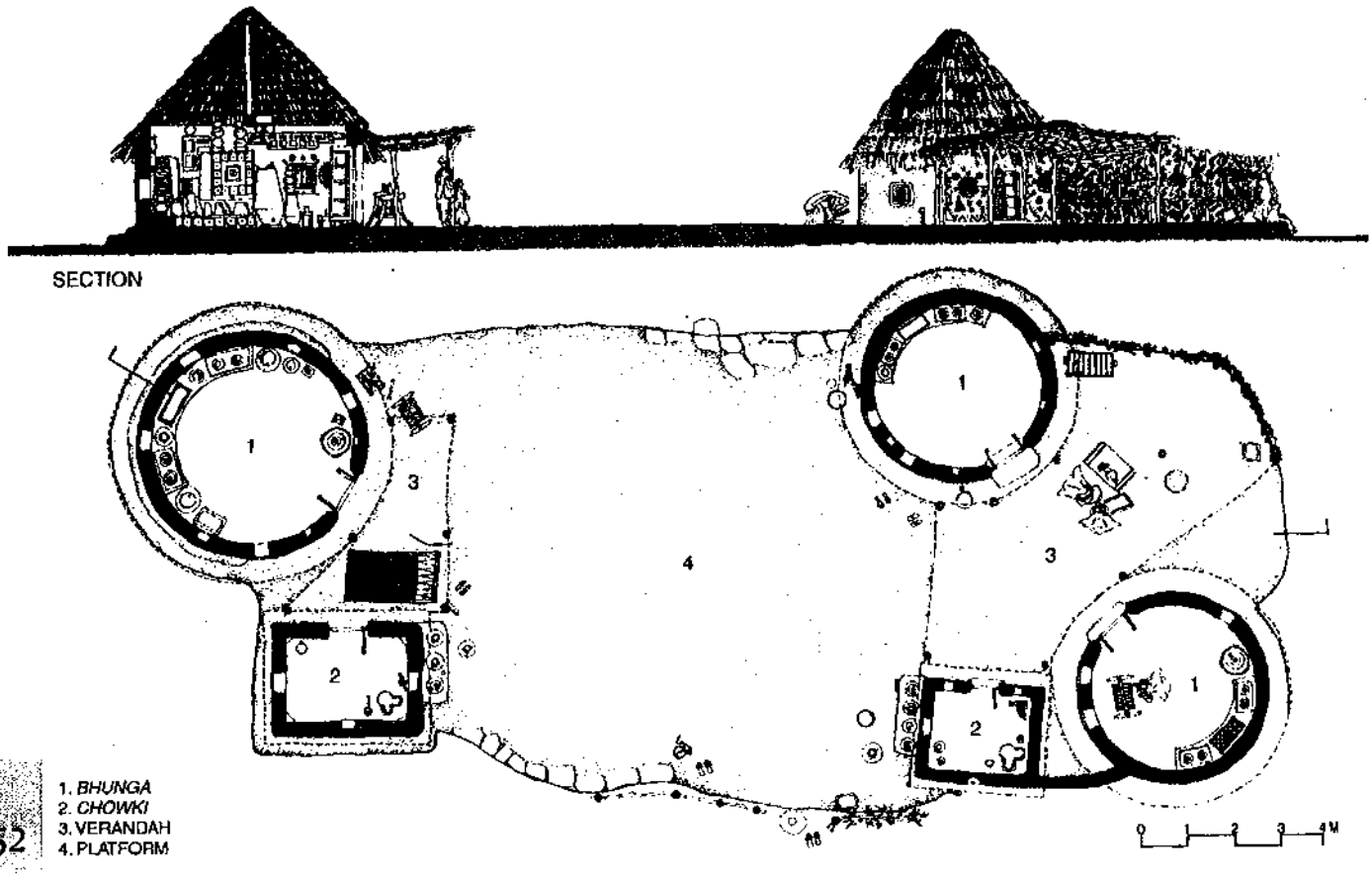


Figure 2: Street view through a cluster in Banni (Jain 2000:80)

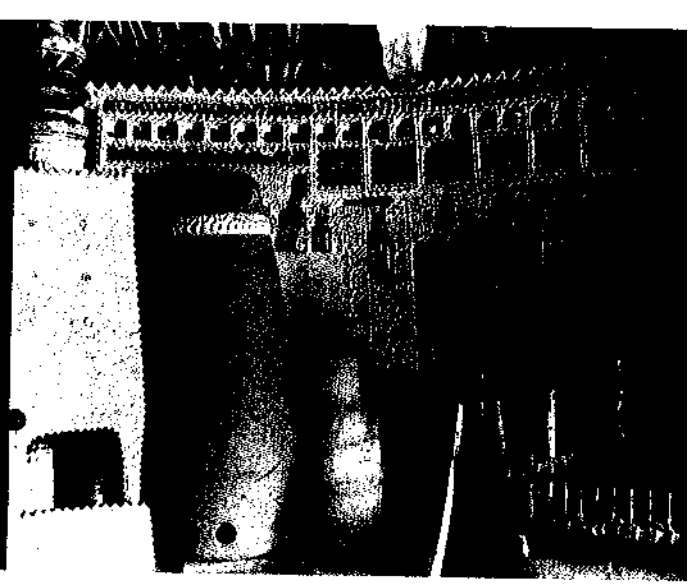
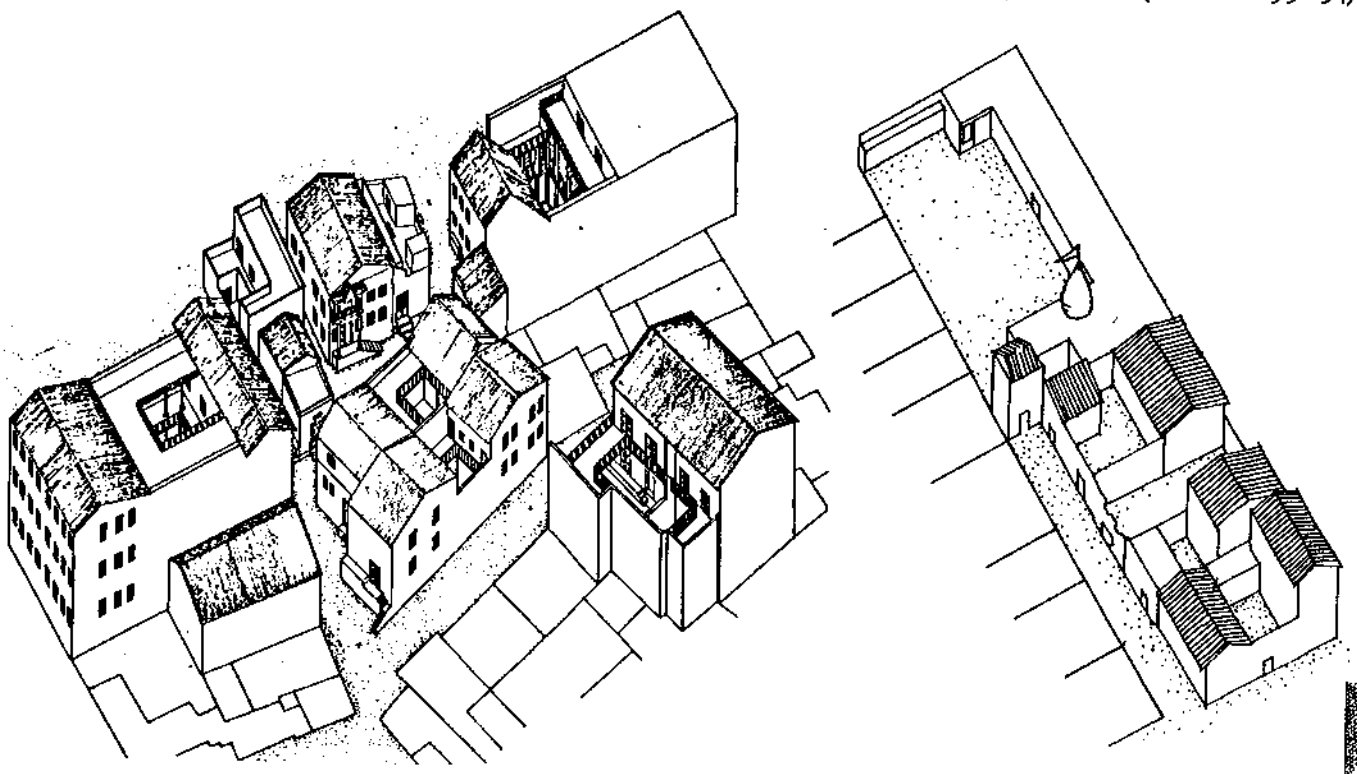


Figure 3: Interior space of Bhunga with mud murals and storage units (Jain 2000:81)

the region of Kutch has got unique combination of geographical features nowhere found in the world: *Rann*, a large saline desert in north, the arid grasslands of *Banni* and *Pachcham* in centre and a long coastline with a string of ports along the Arabian Sea in south. Due to its strategic geographical location, Kutch is home to diverse communities and groups of people. This rich cultural variety is reflected in the living environments of this region, right from the semi-nomadic settlements of grasslands to the urban mercantile towns of central and coastal Kutch. The flat landscape of *Banni* is thinly dotted with the network of semi-nomadic hamlets of cattle herders. Each hamlet is a sparsely organized cluster of houses formed according to a particular community and a kin group. A single dwelling unit consists of *bhunga*, the circular mud hut with conical thatched roofs which is used as indoor living space and the rectangular cooking space *choki*, connected by an open mud platform. As family increases, another *bhunga* is constructed and connected to the house by extending the same platform. Sometimes, thorn bush fencing is erected to define a cluster and for the protection of cattle. Neatly mud plastered surfaces of walls

Figure 4: Street pattern & Chowks of Town Anjar in Kutch (Nanavati 1998:54)



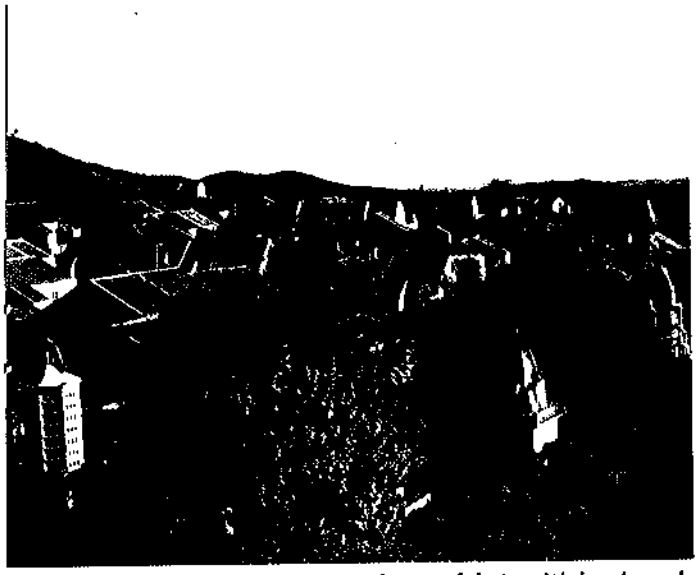


Figure 5: Dense weave of town fabric with land marks (Author 2005)

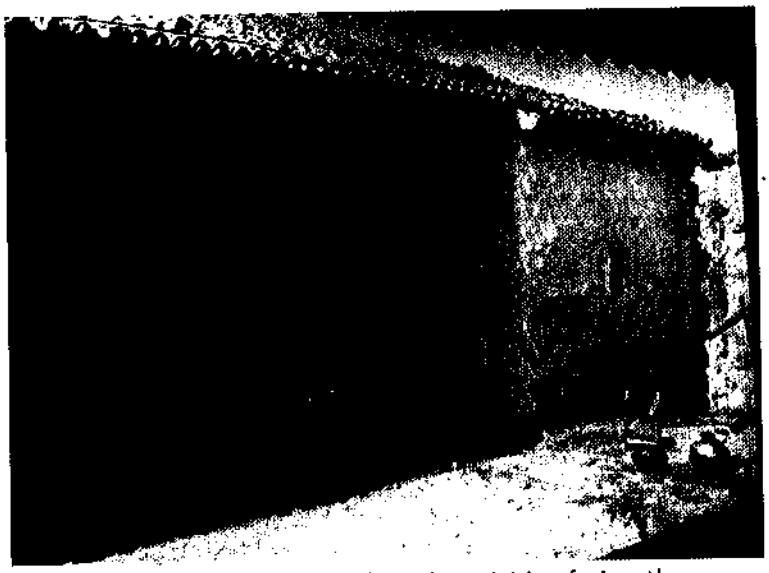


Figure 6: Semi-open verandah with activities facing the street (Jain 2000:24)

and platforms along with the natural ground give a stark and seamless character to the cluster from outside. In contrast, the internal space of *bhunga* is comfortably dim with the soft light through small openings and, elaborately decorated with white clay murals forming niches and storage units.

The villages and towns in the central and coastal region of Kutch, on the other hand are largely nucleated but compact and accretive built forms. Row of individual houses are densely packed together to form network of shaded narrow streets, occasionally punctuated with open *chowks* which are the community spaces for the settlement. Individual units share walls, either side-ways or rear-ways, to minimize exposure to the sun, keeping them cool and comfortable. The sequence of spaces in a unit is from public to private. Depending on situation, a shaded *otla* (plinth), a semi-open verandah or a closed internal courtyard faces the public street, followed by a series of closed private spaces. Small openings provide just sufficient light and ventilation in the arid climate, leaving large wall surfaces blank which gives a playful character to the street along with the shaded spaces. Depending on the type of sand-stone available in that part of the region, the walls are made in rubble masonry. The roofs are usually sloping with the timber structure and terracotta tiles as cover. Terraces are constructed with flat sand-stone slabs or joisted timber structure and covered by thick layer of lime concrete for the insulation.

But even with the diversity, vernacular architecture of Kutch show many similarities due to its location in an extreme arid climate, severe heat and intense sunlight.

Architectural projects and the role of Hunnarshala

Hunnarshala

It was during post-earthquake reconstruction process in Kutch when the strengths of traditional building knowledge systems and artisanal skills were realized and, *Hunnarshala* foundation for building technologies and innovations was formed. With the main objective to capacitate people for reconstructing their habits, *Hunnarshala* initiated "knowledge building and transfer" by engaging building artisans and their communities with other contemporary professionals. Along with strengthening the

local building crafts, the foundation has been actively involved with the issues of environment, sustainability and disaster safety. By developing and validating the traditional knowledge base in its environmental and cultural context, *Hunnarshala* has been investigating in the indigenous architectural expressions of Kutch.

Sham-e-Sarhad, Hodka

Located near *Rann* of Kutch, *Sham-e-Sarhad* is a unique experiment of endogenous tourism, built and operated by the people of Hodka village in *Banni*. This project was envisaged with a view where local community not only becomes a partner and derives fair benefits but also gets empowered to interpret their own culture. Literally meaning "an evening at border", *Sham-e-Sarhad* is an organic cluster of *bhungas*, the traditional huts and tents which are used as individual tourist accommodations. *Bhungas* and other facilities connected by a central open space used for activities like music performances, gatherings, etc. The process of design and construction was undertaken in partnership with artisans from the village who played a central role along with *Hunnarshala*. The tourist facilities have been built using various local technologies like adobe, cob walls, wattle & daub walls, thatch roof with wooden understructure, mud plaster, etc. Artisanal skills such as wood carving, lacquer work, mud murals and paintings are used for furniture and other elements. Through this project, *Hunnarshala* has attempted to explore the strengths of vernacular architectural expressions and establish them within the framework of contemporary needs and enterprise.

Khamir Craft Park, Kukma

After earthquake in 2001, *Khamir* (meaning 'pride' in local dialect) was instituted at Kukma village in central part of Kutch by nongovernmental organizations and Government of Gujarat for the development and promotion of local crafts of Kutch. Since the intention of this institution is to innovate and up-gradate the processes of design and marketing of the crafts, programme consists of varied activities like workshops, design studios, exhibition spaces and temporary residences. In synch with the nature of institution, the process of design and construction also became an opportunity to innovate and develop the building crafts of Kutch. The design team lead by Architect Neelkanth Chhaya and Structural Engineer Himanshu Parikh carried out various experiments using both traditional and new materials- technologies together with *Hunnarshala* and local craftsmen. Working with rammed-earth, wattle & daub, adobe-walls, metal & steel work, bamboo & timber frames, etc. lead to a different design approach. Typologies of buildings were developed through a rigorous process of integrating the earthquake resistant techniques and the actual use-patterns of crafts-persons. Using rammed-earth boxes and light-insulated roofs, a series of open and semi-open spaces are created to achieve scales and environment appropriate for a place where artisans and designers come together to form a community.

Understanding the processes of *making* and experiencing architecture

A genuine experience of a place and it architecture is closely tied to the process of *making*, which conotates the combined processes of conception, design and construction. *Making* also refers to construction of an architectural experience through both, physical and ideated sensations. In order to position the given projects in the vernacular milieu, their process of *making* has to be seen through a set of experiential values.

Familiarization: direct and indirect

From a distance, like any other cluster in a hamlet of *Banni*, *Sham-e-Sarhad* establishes itself in the vast arid landscape by the low spread of thorn-bush and mud fence walls and, the thatched conical roofs of huts set against the stark sky. With reception and dining facilities near the entrance, the circular huts and tents accommodations are organized on edges of the site forming a sparse cluster. Except the dining facility with a space-frame roof structure and the tents, all other buildings follow the local building typologies of circular *bhungas* or rectangular huts. Though strikingly similar in every aspect, the *bhunga* accommodation in *Sham-e-Sarhad* has a sophisticated semi-open shelter in front of its entrance, facing out towards the landscape unlike the rough hay shelter of local *bhungas* which opens on to the common mud platform. The attached toilet and shower unit along with every hut accommodation is also like *chokis* and storages which are clustered around *bhungas* in this region. Similar to the local clusters in *Banni*, it is the mud platform which acts as a central open space connecting all the facilities together. Platform negotiates the local topography with different levels forming various seating arrangements, performance space and accommodates existing trees on the site. A close material and spatial semblance of *Sham-e-Sarhad* with the local vernacular creates an undifferentiated experience of familiarity.

In contrast to the overall familiarity of *Sham-e-Sarhad* with the architecture of *Banni*, *Khamir* Craft Park also seems familiar; but in a strange way. Similar to the villages and towns in arid regions like Kutch, it stands out as a dense 'clump' of buildings and trees; a sign of habitation in the flat endless plains. Though the building units themselves do not follow any existing typologies found in this region, they are intelligent combinations of the traditional spatial elements – a closed space and a semi-open space. The rammed-earth closed boxes and light steel structures are woven tightly to form a series of semi-open verandahs and leaving open courtyards of various scales. The shaded verandahs and blank rammed earth walls enclosing the courtyards at *Khamir* creates a collage of shadows of varying depths, evoking experiences which are similar to that of moving through the *chowks* and the streets of the local villages and towns. The soft light through sculpted lightweight panels or traditional carved louvered windows reminds of dark and dim inside spaces of this region. Elements like open staircases and bridges, which are quite unfamiliar in this region, acts as transitional spaces and markers like traditional gates or local shrines and gives a habitable

texture to the open spaces.

Narrative: continuous and disjunct

The process of assembly is analogous to the narrative of experience for both, the maker (a designer or an artisan) during the course of construction, and for the users thereafter. Strong affinity of *Sham-e-Sarhad* to the local typology of *bhungas* gives direct clues at various stages of making and experiencing it. Starting with the mud platform on the ground to the adobe mud walls and the conical thatch roof with timber understructure, there is a predetermined step to what comes after. The use of local mud-plaster finish, wall murals and subsequent details triggers a sequence of anticipation in the overall experience. Though sophisticated and refined, elements like doors, windows and furniture uses local idioms of timber and lacquer works. This string of local elements coming together in a predestined way renders the experience of *Sham-e-Sarhad* as a continuous narrative.

The strange familiarity of *Khamir* Craft Park precisely comes from the fragmentation of the above mentioned linear progression of assemblage and thus the experience. As there is no affinity to any typology, the process is open for alternative interpretations at any point of making. It is contextual and responsive. The artisanal skills are integrated with highly engineered superstructure of rammed-earth and steel portals by constant improvisations like framing the wattle-daub panels with timber, using the traditional carved timber panels as adjustable louvered windows or just leaving wattle-daub panels unplastered to form screens. Use of non conventional elements like sculpted light-weight panels as gable-ends or reusing metal scrap strips to make the fascia of roofs, gives a collage like quality to the whole process of making. Instead of a continuous sequence of assembly, diverse materials and techniques are juxtaposed together in disjunctive episodes to invigorate the experience at *Khamir*.

Image: strong and weak

While experiencing any architectural work, we imagine a genuine physical encounter through ideated imagery. Due to the unconscious element of hapticity which is concealed in our vision, we can touch that object as we are seeing its image. Due to the continuity of narrative in the processes of making and experience at *Sham-e-Sarhad,* there is a consistency in architectural articulation right down to the last detail. The overall familiarity with the vernacular of *Banni* and the reference of a powerful architectural language strengthens a singular image of a final architectural artifact. Every single experience, from intimate touch of mud surface to a distant depth of desert sky becomes an idealized image. The strong image has minimal tolerance to any modification; even a single addition stands out alienated. This unavoidable presence of a particular architectural form leads to a formal imagination.

Images arising from the materials project much deeper and profound experiences than images of form. The nonconformity in use of materials and techniques at *Khamir* Craft Park suppresses the dominance of a singular image. Instead, it creates an associative field of

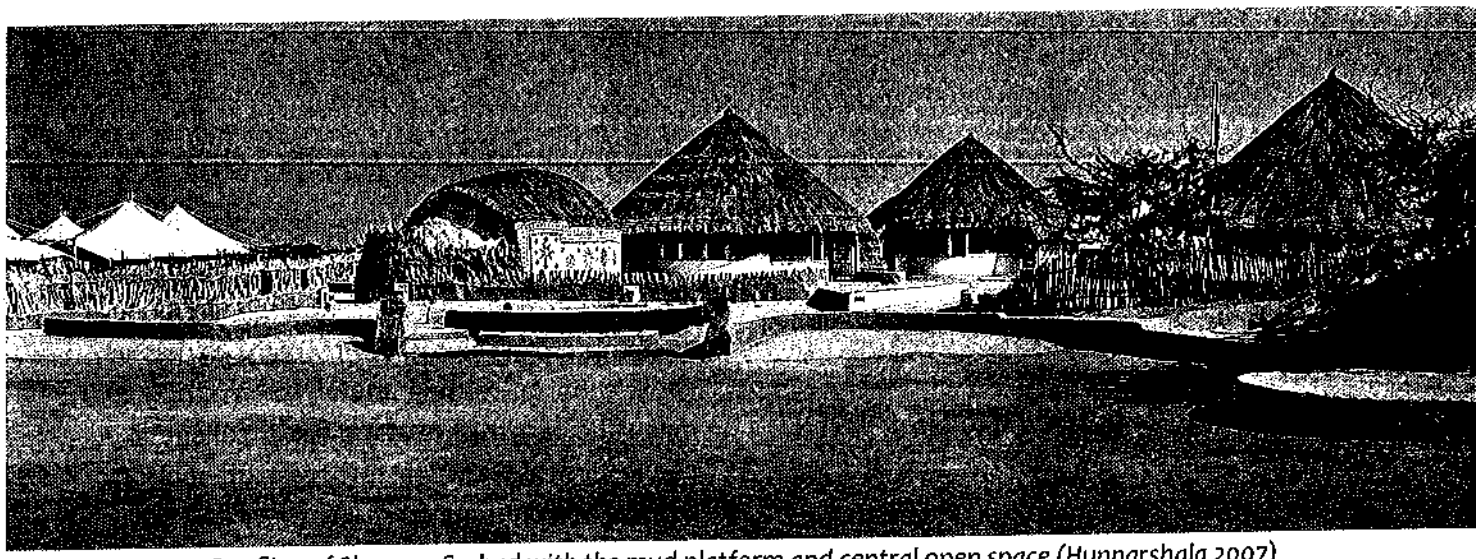


Figure 7: Roofline of Shaam-e-Sarhad with the mud platform and central open space (Hunnarshala 2007)

clustered images which are familiar but in parts. The architectural experience grows through separate qualitative images of texture, light, density, weight, etc. and their detail elaborations instead of a single architectural reference. A weak gestalt allows additions and alterations; a tolerance and a margin of change which is what any vernacular possess. Disjunctions in the narrative generate a field of weak images which incite a prolonged empathetic experience and a multi-sensory engagement. As a result, instead of being an external spectator of the narrative, any participant accepts the responsibility for the progression of the experience.

Scenographic foreground and supportive background

Authentic architectural experiences originate from real or ideated bodily confrontations rather than just visually observed entities. With a strong syntax of images, *Sham-e-Sarhad* unfolds into a single system of experiences. Composition of architectural elements is aims at a specific ambience which adheres to the character of vernacular built environment of *Banni*. Carefully framed and focused fragments create an anticipated vision which always precedes any experience. As a consequence of this, before any genuine architectural encounter, architecture becomes foreground imagery enfolded by the eye and the touch. This creates an architectural setting which is

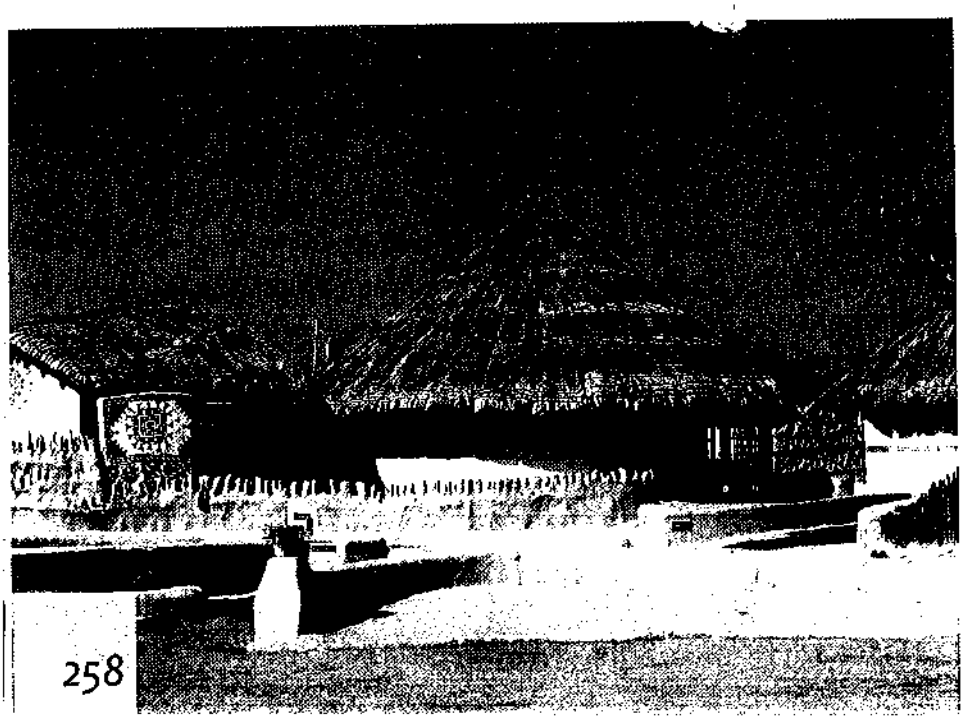


Figure 8: Bhunga accommodation with other facilities (Hunnarshala 2007)

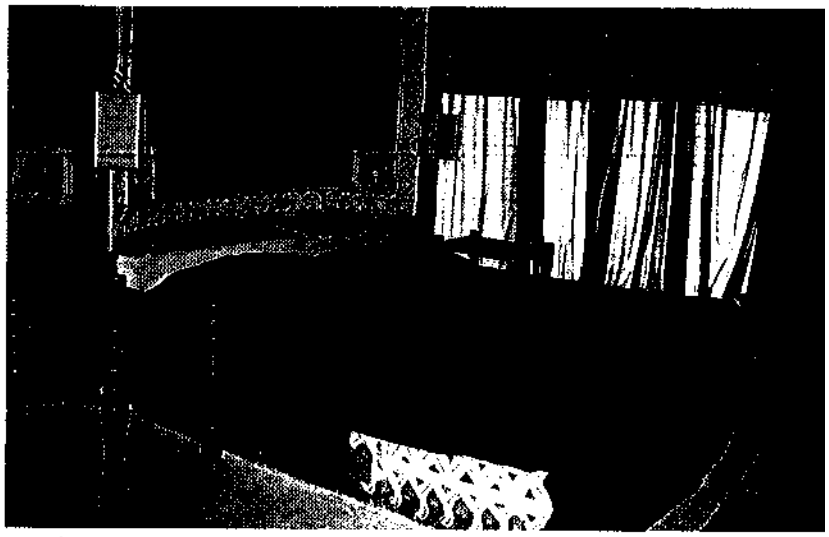


Figure 9, Figure 10: Mud murals near the entrance and internal space of bhunga (Hunnarshala 2007)

static in a single moment of time and evokes an experience of flattened temporality.

Conceived as a community place of artisans of Kutch, the architectural experience of Khamir Craft Park is formed by sequences of human situations and encounters. Rather than condensing the diversity of activities as single architectural imagery, it is spread throughout verandahs and courtyards to form multiple episodes of images. Further events are generated and accommodated by adding and attaching semi-open shelters and pavilions to what exists. This creates a layered flux of actions where architecture recedes and becomes a background for human activities. Fragmentary vision of these events produces an impressive experience of architectural discoveries and of a temporal continuum.

Crafting a place and a 'sense' of place

As observed above, both the projects present different approaches of interpreting the vernacular architecture of *Kutch* and translate them into a range of architectural experiences. *Sham-e-Sarhad* establishes itself in *Banni* through an overall familiarity with the local vernacular. It confirms your location in that region with a continuous architectural experience of recognizable

Figure 11: Kitchen facility the plinths behind the mud plinths (Hunnarshala 2007)

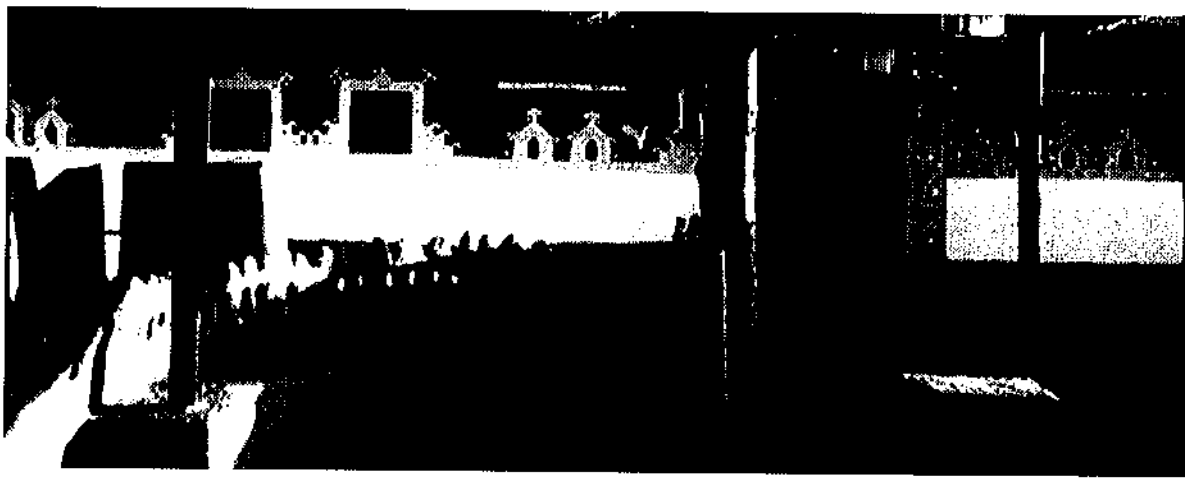
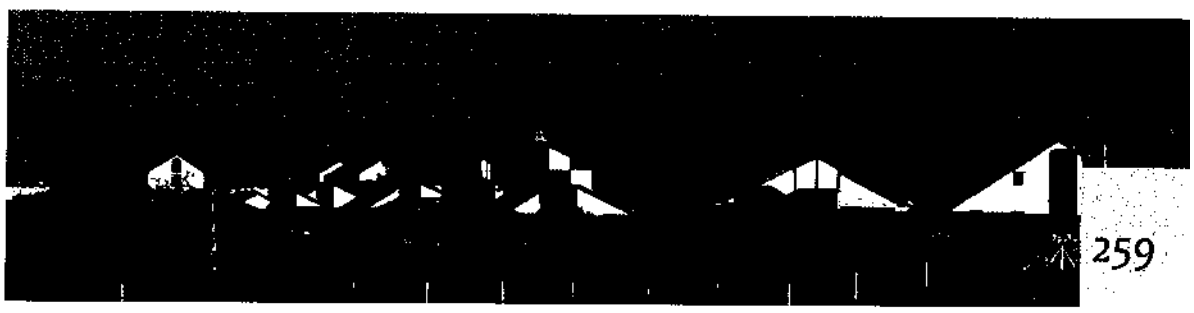


Figure 12: Skyline of Khamir Craft Park in the flat landscape of central Kutch (Author 2007)



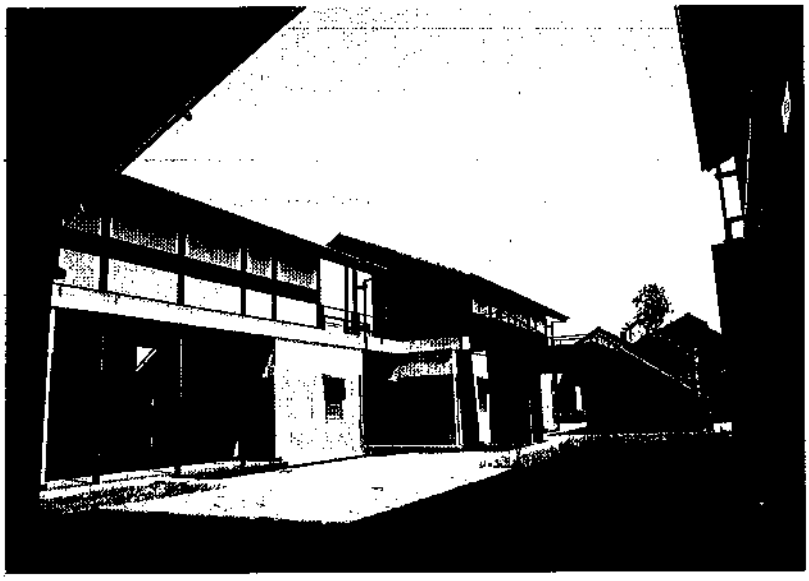


Figure 13: Shaded courtyards and streets at Khamir (Author2007)

Figure 14: Weaving shed overlooking the courtyards (Author 2007)

materials, techniques and configurations. Designed as a retreat on the border of desert, it creates a place which is effortlessly identifiable with the surroundings. Contrasting but equally unique, *Khamir* Craft Park creates a setting by selecting regional elements with a qualitative potential to support human activities physically or conceptually and incorporate them in familiar but distant way. Rather than directing an experience of specific architectural language, it integrates different experiential qualities like light and shadow, scale and proportion, materials and surfaces. By forming a tight and dense weave of these sensorial elements, *Khamir* invoke a sense of place in the flat and arid landscape of Kutch.

Figure 16: Collage of light, shadows & materials (Author 2007)

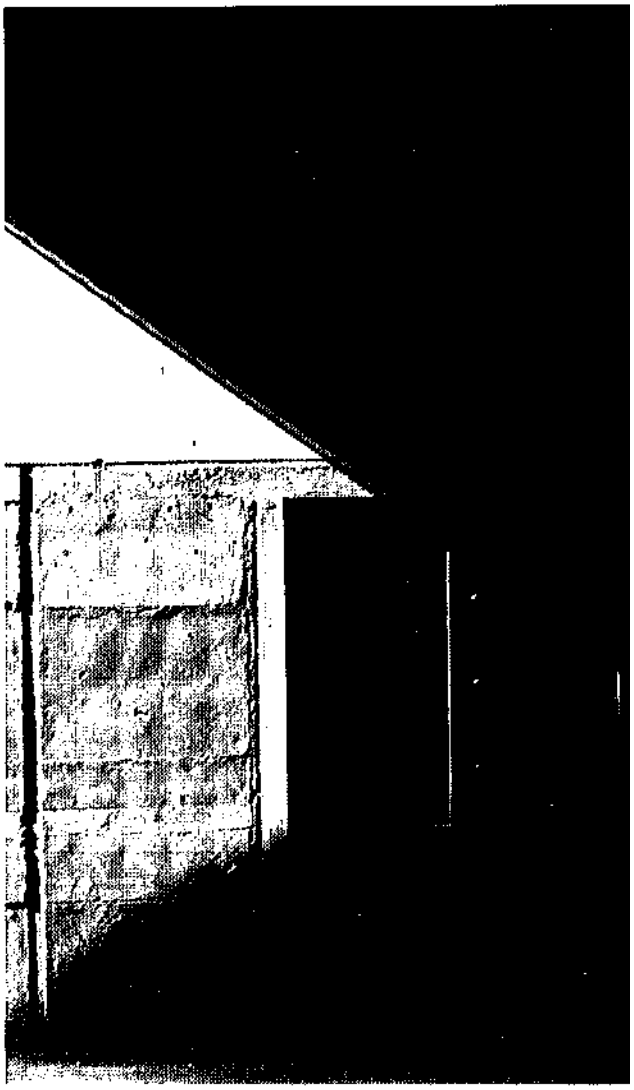


Figure 15: Controlled light through sculpted panels (Author 2007)

Bibliography

Abhiyan), K.-L. (. (2009). *Khamir*. Retrieved March 2010, from Centre for Kachchh Heritage, Arts, Music, and Integrated Resources: http://www.khamir.org/

Frampton, K. (1983). Prospects for a Critical Regionalism. *Perspecta: The Yale Architectural Journal, Volume 20* .

Hodka. (2009). *Shaam-e-Sarhad village resort*. Retrieved April 2010, from Captivating Kachchh: http://www.hodka.in/

Hunnar Shaala Foundation for Building Technology and Innovations, B. I. (2007). *Hunnar Shaala Foundation*. Retrieved February 2010, from http://hunnar.org/

Jain, K. a. (2000). *Architecture of the Indian Desert*. Ahmedabad: AADI Centre.

Linam Jr., J. E. (1999). *Machiya and Transition: A study of developmental vernacular architecture*. Blacksburg: Virginia Polytechnic Institute and State University.

Nanavati, P. *Role of Urban structure to the Houseform: Study of Mundra and Anjar*. Ahmedabad: Unpublished research thesis, School of Architecture, CEPT Univeristy.

Pallasmaa, J. (1999). Hapticity and Time. *RIBA Discourse Lecture* . London.

Tzonis, A., & Lefaivre, L. (1981). The Grid and the Pathway: An Introduction to the Work of Dimitris and Susana Antonakakis. *Architecture in Greece no.15* , 164-178.

ENHANCING THE QUALITY OF LIFE BY MAINTAINING THE CULTURAL VALUES AND VERNACULAR FUNCTIONAL SPATIAL FEATURES OF MALAY VERNACULAR RESIDENCES

Amirhosein Ghaffarian Hoseini, Mohd Nasir Baharuddin, Rahinah Ibrahim, Nur Dalilah Dahlan

Abstract

The quality of contemporary residential functional spaces has been mostly based on style and modernity rather than the tradition of particular regional context. This has led to new buildings which are not based on the tradition of their own regional context. In view of the rapid modernization of Malaysia, the kampong house as a Malay vernacular architecture has been replaced by modern architecture. We are motivated to conduct this study because we observed the increasing loss of functional spatial features of kampong houses and their cultural values that support Malay local quality of life. The functional spatial features include spatial characteristics of functions and spaces that are based on local needs while the cultural values represent the local way of life. We posit that the loss of functional spatial features and cultural values is key to the diminishing quality of life for people living in contemporary houses. In this research, the vernacular architectural features of kampong houses representing Malay vernacular houses are studied using archival search. We use text analysis for analyzing the cultural meanings of vernacular functional spaces and their functional spatial features. The vernacular functional spatial features are the socio-cultural or environmental characteristics of a local region in a functional space. On the other hand, the cultural meaning of functional spaces is the value that represents the resident's local way of life in a functional space. The analysis determines the vernacular functional spatial features and cultural meanings of the functional spaces of Malay houses which represent the local needs. This study theorizes that the vernacular functional spatial features and the cultural meanings of functional spaces within Malay houses are influential in enhancing the quality of life. Correspondingly, the research found that the vernacular functional spatial features and their cultural values could support the quality of life while integrated successfully into contemporary functional spaces. Consequently, these features when utilized in designing contemporary functional spaces could exude the Malay local quality of life. In conclusion, the cultural values and functional spatial features of Malay vernacular functional spaces can be considered in contemporary residential design for enhancing the Malay quality of life in urban area.

Keywords: *Quality of life, Vernacular architecture, Vernacular functional spatial features, Cultural Values*

Introduction

The abandonment of vernacular architecture is the main result of the utilization of modern architecture which reflects the western ideas without any concern to tradition of the region (Nilhan, et al., 2007). Consequently, this has led to new buildings which are not based on the tradition of their own regional context (Nilhan, et al., 2007). We are motivated to conduct this study because we observed the increasing loss of vernacular features of the kampong house that could support Malay local quality of life (Abel, 2000; Nilhan, et al., 2007). Correspondingly, the quality of contemporary residential functional spaces is mostly based on style and modernization rather than the tradition of the particular regional context. Therefore, there is a need to promote the quality of vernacular functional spaces in order to enhance the local quality of life and to maintain the cultural values.

Quality of housing

According to various theories, the quality of housing and its functional spaces are considered as influential factors in accordance with quality of life (Glenn, 2004). Likewise, literature represents that the answer to a high quality of life is based on considering the socio cultural aspects of the functional spaces of the house while other studies indicate that housing conditions and their spatial features are one of the important factors in quality of life (Kowaltowski, et al., 2006). Correspondingly, these theories will be utilized in this study to focus on the quality of housing and functional space within Malay houses. However, other theories represent that with the rapid modernization of Malaysia, the kampong house as a Malay vernacular architecture has been replaced by modern architecture (Yuan, 1991). Accordingly, various aspects of kampong which identified it as a major vernacular value, has been lost inside contemporary functional spaces (Yuan, 2001). Moreover, a study by Wakefield (2000) elaborated on the contemporary housings in Malaysia to identify the problems of housings which are occurred in contemporary residential houses. Respectively, the study theorized that one of the most critical issues is the incongruity between the functional spaces of the house and the actual needs of the residents (Wakefield, 2000).

The Malay vernacular settlements

Introduction

The Malay house as the Malay vernacular architecture represents a handmade house which is totally designed and constructed by local Malays (Yuan, 1991). The Malay house is designed and built according to the actual needs of its users by understanding their daily needs, beliefs, culture and their way of life. Meanwhile, the Malay house is considered as the Malay vernacular architecture which is highly in accordance with the nature, environment and the particular region. Correspondingly, the Malay house is comprised

of functional spaces which reflect the Malay way of life and desires (Yuan, 1991).

Housing in Malay Families Both in Past and at Present

With the rapid modernization of Malaysia, the kampong house as a Malay vernacular architecture has been replaced by modern architecture (Yuan, 1991). This has led to new buildings which are not based on the tradition of their own regional context (Nilhan, et al., 2007). Accordingly, various aspects of kampong which identified it as a major vernacular value, has been lost inside contemporary functional spaces (Yuan, 2001). Correspondingly, the quality of contemporary residential functional spaces has been mostly based on style and modernization rather than the tradition of particular regional context (Yuan, 1991).

Due to the study by Wakefield (2000), a comparison between the Malay vernacular house and modern residential designs were carried out. The result of the comparison expressed that the Malay house is a unique architectural phenomenon with remarkable content, form, use of local material, use of optimal space and environmental concern. The study concluded that the Malay kampong house as the Malay vernacular architecture addresses all the local needs as it is designed based on the Malay cultural values and way of life. However, the contemporary houses are not mostly in a very acceptable condition to fulfill the entire household needs (Wakefield, 2000). Respectively, the households in contemporary houses are mostly facing insufficient quality of housing in terms of socio-cultural issues. According to the aforementioned facts, we intend to understand the cultural meanings and spatial features of the functional spaces of Malay kampong houses. Consequently, the vernacular spatial features and cultural meanings of the functional spaces represent the Malay way of life and its influences on the spatial planning features which can be considered in contemporary functional spaces.

Research methodology

In this research, the vernacular architectural features of kampong houses representing Malay vernacular houses are studied using archival search. We use text analysis for analyzing the cultural meaning of vernacular functional spaces and their functional spatial features.

Accordingly, the vernacular architectural features of kampong houses as Malay vernacular houses are studied based on the archival texts. The study is carried out based on a theoretical framework which will lead to understanding the cultural meanings and vernacular functional spatial features. This theoretical framework which is based upon these two main issues leads to the expected result of study. These issues encompass the vernacular functional spatial features and the cultural meanings of vernacular functional spaces. During the result and analysis phase all the archival data is read and the key informants of each text are extracted in order to be compared with others based on our theoretical framework. The theoretical framework of

study is designed based one the categorizations of main issues of study which are vernacular functional spatial features (*environmental* or *socio-cultural*) and cultural meanings of functional spaces (*based on main functional spaces of Malay houses*). The vernacular functional spatial features and cultural meanings which are corroborated by other archival data in other texts are considered as the expected result of study.

Result of archival search on Malay Kampong houses

The Concept of Malay Vernacular Settlements

As stated by Wan Ismail (2005), the design concept of Malay house is based upon a deep understanding of Malay life. Additionally, an Ismail (2005) expressed the concept of Malay houses as "It was not created by anyone, but had evolved through many generations of Malay society". Thus, the house is designed according to the social and cultural interactions of the Malay communities. Likewise, the study by Thompson (2004) theorized that the most appropriate place for studying and understanding the Malay culture is the kampong houses. A Malay kampong house is the place where the Malay culture and tradition are represented through local daily life (Thompson, 2004). Besides, another study declared that these socio-cultural interactions shape the functional spaces and the interior atmosphere of the house (Tajuddin Mohamad Rasdi, et al., 2005). These theories supports our theory that a deep understanding of the functional spaces of vernacular houses can lead to the identification of desired way of life and their socio-cultural attributes (Rapoport, 1990).

Vernacular Functional Spatial Features and Cultural Meanings of Functional Spaces within Malay Vernacular Settlements

Literature developed the theory that the quality of housing is considered as an important factor in enhancing the quality of life. Accordingly, in this study we are only focusing on the spatial and cultural aspects of the functional spaces for the quality of housing among many other factors that could be influential in enhancing the quality of life.

Design and Lay Out of the Functional Spaces of Malay Kampong Houses

The Functional spaces inside the Malay house are categorized into public, private and semi private spaces based on the level of privacies. Originally, a Malay house is comprised of front and back spaces as two major sections of its design layout which are embracing the *Rumah ibu* and *Rumah dapur* (Yuan, 1991). The Rumah ibu is the main part of the house which covers various household's interactions. On the other hand, the *rumah dapur* is the kitchen area of the house which is a private section for females.

Inside the Malay house all spaces have specific

sizes based on their own allocated functions. Responsively, the Malay house with an open plan layout facilitates the users to have an optimal use of space according to their definite functions (Yuan, 2001). Moreover, the Malay house responds to the environmental characteristics of the region through various factors such as open planning, large openings and limited walls and partitions. Large window openings are considered as one of the main characteristics of Malay houses to let the fresh air and day light to come inside the house. The size of a typical window is basically the same as the full height of the door. Another approach towards climatic control is based on the open plan layout of the Malay houses. This approach is highly influential in the cross ventilation of the house while giving a sense of openness to the interior atmosphere. Malay society has emphasized on community intimacy and personal and family privacy (Yuan, 1991). The priority given to privacy is reflected in the flexible and open planning of the Malay house. However, the distinctive zoning of spaces provides the level of privacy required: a guest zone (public domain) with a clear male domain at the front, and the family zone (private domain), which is the female domain. As the Malay houses are built on stilts, the main entrance of the house is basically reachable through stairs which lead to a covered porch called *anjung*. *Anjung* acts as an open space which is allocated for the households to rest in that functional space while the unfamiliar guest are entertained there (Yuan, 1991, Wan Ismail, 2005).

Basically, the porch acts as an open space entrance which is prior to the main entrance of the house. The first functional space of the house which is adjacent to the entrance area is *serambi gantung*. The *serambi gantung* is an extended linear functional space which is mostly allocated to the guests to be entertained (Yuan, 1991). Accordingly, the *serambi gantung* contains low openings which lead to a cross ventilation while providing a nice view for the users. Moreover, the *serambi gantung* is adjacent to the main living room of the house which is called *rumah ibu* as the core of the house. The floor level of the *serambi gantung* is lower than *rumah ibu* which indicates the border between functional spaces (Yuan, 1991).

As stated by Wan Ismail (2005), the *rumah ibu* is the main functional space of the house which is a multi functional space. Accordingly, various needs of the users are addressed in this area as its open space provides the flexibility for different functions. Subsequently, the functions such as family gathering, sleeping, praying and many other functions can take place in this functional space. Furthermore, the *rumah ibu* contains larger openings in front and back which increase the air movements in the spaces of the house. Additionally, the floor level of *rumah ibu* is the highest among all functional spaces of the house which represents its crucial impact on the house layout (Yuan, 2001). *Rumah tengah* is also considered as a middle space which can be observed in large houses. This space is considered as a connection space between the main part of the house and kitchen area (Wan Ismail, 2005).

The *rumah ibu* as the main functional space in a Malay house is adjacent to the *serambi gantung* from one side and the other side is next to the *serambi samanaik*. The *serambi samanaik* is a similar functional space to the *serambi gantung* which was mentioned before (Yuan, 1991).

Respectively, the *serambi samanaik* and *serambi gantung* are utilized as circulation spaces which lead to the cross ventilation while leading to a space called *selang*. Accordingly, *selang* is considered as a walkway which is connected to the kitchen area. The selang also acts as a circulation space while being an allocated space for the female's interactions. *Selang* is a space for women to chat, socialize and entertain with other females (Wan Ismail, 2005). Moreover, this space is perceived as a linkage between the main living room and the kitchen area which connects the back and front sections to each other. In addition, *selang* provides an open space between the two major parts of the housed which is highly influential for the thermal comfort of the users and lighting (Yuan, 1991; Wan Ismail, 2005). Meanwhile, the court yard is an open space which is only utilized in Malay houses which are located in *Malacca*. This open space is situated between the *rumah ibu* and *rumah dapur* while covering the functions such as resting, washing and drying the clothes (Yuan, 2001).

The *rumah dapur* is located next to the *selang* as the back section of the house. This functional space is considered as the kitchen area of the house which is allocated to the females of the house. The *rumah dapur* is utilized for various interactions such as cooking, washing and eating while being on the lowest floor level (Yuan, 1991). Consequently, the corresponding functional spaces are the basis of the design layout of a Malay house which represents the spaces arrangements, adjacencies, spatial hierarchies and other vernacular functional spatial features.

Spatial Embellishments, Scale and Proportion

One of the vernacular spatial features of the Malay houses is their spatial embellishments which can be seen inside the functional spaces of house. The spatial embellishments are mostly based upon the Malay's wood carving art (Yatim, 1995). Accordingly, the Malay's woodcarving art is substantially incorporated with Malay's life, customs, beliefs, and Islam. Meanwhile, an appropriate proportion and human scale based on Malay measurements scales is considered as one of the vernacular features which influence the size of the functional spaces and their spatial elements (Wan Ismail, 2005).

From the above, we develop vernacular features for use in contemporary functional space examples. As a result, the vernacular features such as the open plan layout, space arrangements, inter-relativity, adjacencies, relation priorities, level of privacies for male or female, size, material and characteristics of openings are mostly considered inside the Malay vernacular functional spaces.

In Harmony with People's Way of Life

Culture of a region is the life style of people encompassing their thoughts, beliefs and functional behaviors which is influential for their quality of life (Low, 1988). Accordingly, the stud by Low (1988) focused on the cultural aspects of design while reviewing various researches regarding the cultural meaning in residential designs. Due to the theory by Low (1988), cultural aspects of design, as a field of

study, focuses on the user's interactions, relationships, behaviors and correspondence between cultural orders and principles of design. This correspondence of interactions, relationships and behaviors is usually studied in terms of the spatial features and the spatial arrangement of the functional spaces. Moreover, functional space is given meaning through the basis of that order which is culture (Fernandez, 1986).

Social Relations and Life Style

Basically, one of the exquisite features of the vernacular houses in all around the world is the concept of privacy for the house occupants (Mohammed Abdullah, 2001). The privacy is provided through the utilization of particular elements or separation of functional spaces into private, semi private and public areas. Respectively, the functional spaces of a vernacular house are assigned to specific functions with a definite level of privacy and allocated users (Mohammed Abdullah, 2001).

Nevertheless, another study theorized that the significance of the privacy in a Malay society is not similar to the western ideas (Powell, et al., 1988). Since the Malays are intertwined with Islam in their entire life, the concept of privacy in their socio-cultural interactions is influenced by Islam. Accordingly, the relationships between the males and females are restricted while the females are stayed at the back section of the house as a private section. However, the front section of the Malay house includes the public and semi public functional spaces which are allocated for men and guests. In fact, the design of the functional spaces of the Malay house is based on their cultural values which encompass their religion, belief, social relations and lifestyle (Powell, et al., 1988). Respectively, the impact of privacy on social relations of the Malays leads to the segregation of the spaces into two sections. The front section acts as a public area for men and the back section of the house is the allocated area for women to rest, chat and work while having their own privacy (Yuan, 1991). On the other hand, the study by Tan (1980), expressed the lack of privacy in the functional spaces of various contemporary housings in Malaysia. Due to the retrospective theories, this study focused on the concept of privacy as one of the socio-cultural factors in vernacular functional spatial features of Malay houses.

Due to the study by Yuan (1991), the Malay's lifestyle represents an uncomplicated design of the spatial planning and simple functional spaces within Malay houses. This fact indicates the simple life style of the Malays as they are not intertwined with pretentious living patterns. Accordingly, a Malay house is not equipped with too much furniture as most of the activities of Malay occupants are carried out on the house floor. Respectively, the mengkuang mats are utilized for seating instead of ostentatious furniture to welcome and greet the guests. Meanwhile, anyone who intends to enter the house must take off the shoes in order to keep the house floor as clean as possible (Yuan, 1991). Likewise, a clean house floor enables the Malays to pray as the prayers are carried out on the floor. Prayers are usually accomplished in *rumah ibu* while the *serambi* is another allocated functional space for praying. Meanwhile, the flexibility of *rumah ibu* with its limited partitions leads to an open space for many other activities to be

performed on its raised floor. On the other hand, the *rumah dapur* is utilized for cooking, serving the food and dining. According to Malay life style, they seat on a mat on the house floor of the *rumah dapur* while dining (Yuan, 1991). Eventually, we claim that the vernacular spatial features and the cultural meanings of the functional spaces in Malay houses encompass the desired Malay lifestyle.

Conclusion

This study represented that a Malay vernacular house is comprised of valuable features in terms of versatile aspect of the house. Nevertheless, the Malay house while holding profound features is not highly considered in contemporary residential design as this remarkable heritage is getting vulgarized. Accordingly, this study opens further insights for researchers to study the Malay vernacular houses in terms of other remarkable aspects. Correspondingly, the identification and adaptation of vernacular architectural features is necessary to address local needs inside the contemporary functional spaces. These vernacular architectural features embrace the vernacular functional spatial features and the cultural meanings of functional spaces. Eventually, the study represents that the vernacular functional spatial features and cultural meanings of the Malay vernacular functional spaces are highly needed to be integrated into contemporary residential designs for enhancing the quality of life.

References

Abel, C. (2000). *Localization versus Globalization, in Architecture and Identity: Responses to Cultural and Technological Changes*, Boston: Architectural Press.

Fernandez, J. (1986). *Persuasions and performances: the play of tropes in culture*, Bloomington (Indiana): Indiana University Press.

Glenn, I. (2004). Enhancing the Rural South's Quality of Life: Leveraging Development through Educational institutions, *Journal of southern rural sociology* 20(1): 1–24.

Kowaltowski, D., Silva, V., Pina, S., Labaki, L., Ruschel, R & Moreira, D. (2006). Quality of life and sustainability issues as seen by the population of low-income housing in the region of Campinas, Brazil, *Journal of habitat international* 30: 1100-1114.

Low, S. (1988). Cultural Aspects of Design: An introduction to the field, *Journal of Arch. & Comport. /Arch. Behav* 4 (3): 187-190.

Mohammed Abdullah, E. (2001). The evolution of planning & urban theory from the perspective of vernacular design: MOMRA initiatives in improving Saudi Arabian neighborhoods, *Journal of land use policy 18:* 170–190.

Nilhan, V., Sarbulent, V., Nihan, E., & Resat, S. (2007). Eastern black sea region—A sample of modular design in the vernacular architecture, *Journal of building and environment* 42: 2746–2761.

Powell, R & Wong, B. (1988). The contemporary kampong, *Jornal of Majallah Akitek* 4(88): 22 – 28.

Rapoport, A. (1990). *"Defining vernacular design" in Turan: Vernacular architecture paradigms of environmental response*, Avebary: Gower publishing company limited.

Tajuddin Mohamad Rasdi, Ali, M. K. M., Nihan, E., Syed Ariffin, S. A. I., Mohamad, R., & Mursib, G. (2005). *The architectural heritage of the Malay world – The traditional houses, Malaysia*: Johor Darul Ta'zim.

Tan, S. H. (1980). *Factors influencing the location, layout and scale of low-cost housing in Malaysia, in Public and Private Housing in Malaysia*, Kuala Lumpur: Heinemann Educational Books (Asia).

Thompson, E. (2004). Rural Villages as Socially Urban Spaces in Malaysia, *Journal of urban studies* 41(12): 2357-2376.

Wakefield, J (2000). *Some micro issues – Housing, profit and culture*, Klang Valley, Malaysia. Proceeding of the second international conference on quality of life in cities, 21 century goal. National University of Singapore, Singapore.

Wan Ismail, W. H. (2005). *Houses in Malaysia "Fusion of the east and the west"*, Malaysia: Johor darul ta'zim.

Yatim, O. M. (1995). *Islamic arts*, Malaysia: Ministry of education, Malaysia.

Yuan, L. J. (1991). *The Malay house: rediscovering Malaysia's indigenous shelter system*, Malaysia:

BORDERING ON VERNACULAR THE TRADITION OF THE ORIYUR SHRINE

N.Lakshmi Thilagam, V.Balasubramanian

Abstract

The vernacular of a place is encoded in the architecture of the built form and enriched by the cultural practices of the people. This study explores the history and tradition of the Britto cult centered at the Shrine of St John de britto at Oriyur in the Pasumpon Muthuramalinga Devar district of Tamilnadu, South India. The religio-cultural context of the shrine and festival originating from the martyrdom in 1969 of John de Brittto, today has cut across religious affiliations and is more of a vernacular tradition connecting the local castes and communities. It is this mystic aspect of the Oriyur shrine, built and supported by traditional practices that this study intends to explore.

Introduction

Vernacular architecture by definition encompasses buildings that accommodate the values, economics and ways of living of the cultures that produce them. Such architecture is related to their environmental context, material resources and technological influences (Oliver, xxiii).Thus the vernacular aspects in architecture is composed of two large components – one that defines and delineates the physical skin of the context and the other that supports and describes the functioning and activities that are accommodated within and affiliated to this physical edifice.

This paper presents a case of conflict of consensus which occurs where a largely vernacular activity built on the belief system and social structure of a place is sheltered by and within a predominantly imported traditional architecture. What is the role of architecture as in this case? Does it aide in or create barriers in the conducting of the activities / functioning of the place?

Has the architecture over the years internalized into the vernacular of the place or has it remained an external component – a reminder of its origin and thereby subtly embodying the dual nature of its existence.

These questions are explained and discussed in reference to the St. Arulanandar Shrine or St John de Britto shrine at Oriyur, in Tamilnadu, South India.

The context of religion and belief systems

Religion and religious affiliations have held a central role in the culture of India. The introduction of Christianity into the Indian subcontinent has been a predominant force of change and transition in the complex social stratification of the Indian society. The nature of meetings, interactions and adaptation that occurred during the encounters between practitioners of the world religion and the local populace has been the subject of several studies (Bayly).

The focus of this paper is the perception of Christianity as an external religion and thereby the need for creating an identity and image that is both Christian and Indian. The significant use of vernacular practices as a bridge between belief systems and religious accordance, centered around cult heads and seers is a conscious process of shifting borders and transcending communities. In the process creating a place and a tradition for themselves by bordering on religions, communities, ideologies and orthodoxies. It is this skillful selection and practice of rite and rituals, ceremonies and festivals that contributes to the large following at Oriyur.

Located at the juncture between European and Tamil Catholic and Hindu,high caste and low caste, Britto is a preeminent liminal figure and .....the Tamil representation of St. John de Britto reveals a convert communities attempt to construct a local identity and cult for the European saint. (Selva.P.Raj,)

Historical evolution of the shrine

The shrine of John de Britto or the shrine of St. Arulanandar as it is locally known is located in the Pasumpon Muthuramalinga Thevar district in Tamilnadu. The shrine is a popular pilgrim center for Tamil Catholics.

The shrine complex of John de Britto is part of the Roman Catholic Diocese of Sivagangai established in 1987 after it bifurcated from the Arch diocese of Madurai. St. John de Britto is the patron saint of the diocese with a catholic population of 8.1%.Historically it was overseen by Goan priests under the Bishop of Mylapore until 1929 when it became a part of the Arch diocese of Madurai.

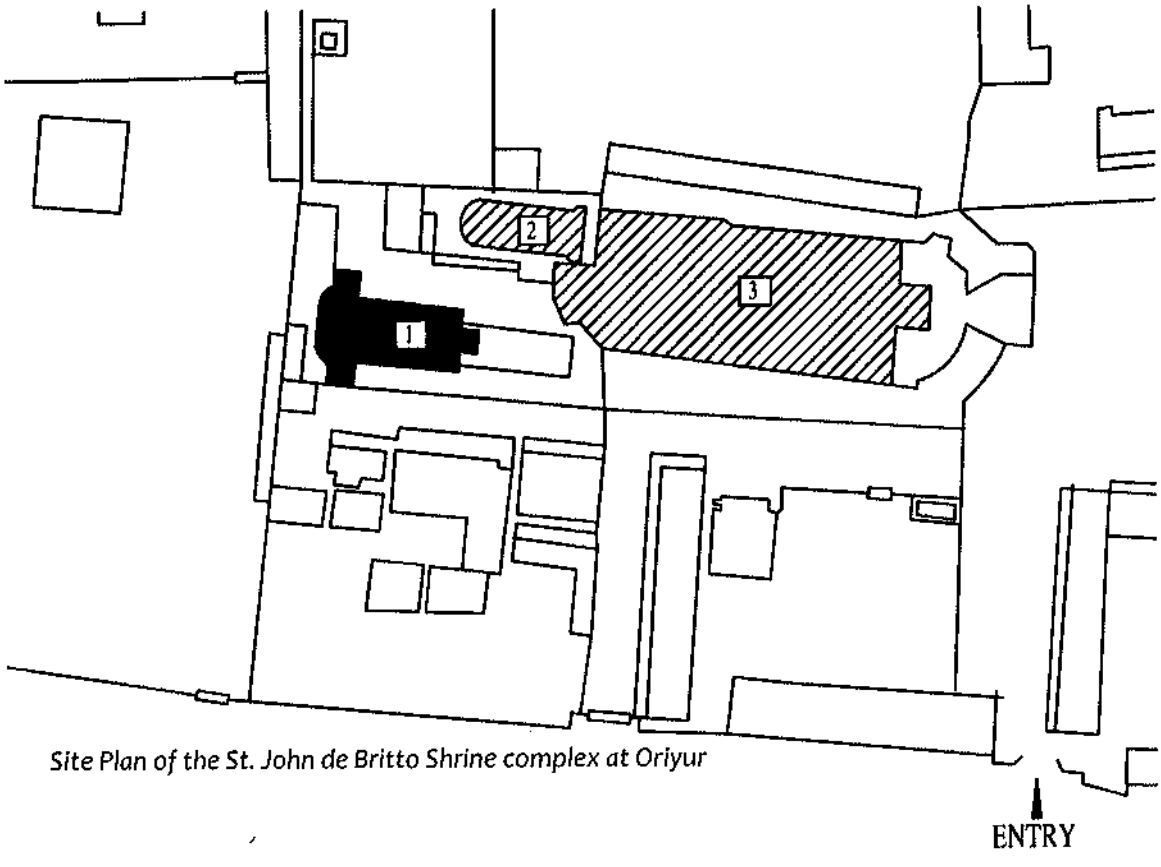
The shrine at Oriyur has a following from various castes such as the Pallars, Udayars, Kallars and Vellalars."*A notable feature of the Britto cult is that it is centered around caste identities rather than religious affiliations*" (P.Ray, pg 87).

At present the shrine complex consists of –

1. Church of Our Lady of good health (Queen of Health) or the Martyrdom church.
2. The Beatification Church built in 1890.
3. The Canonization church built to commemorate the canonization of St. Britto on June 22, 1947.

History of St. John de Britto

Saint John de Britto was born in Lisbon, Portugal in 1647. He volunteered for the missions in India and was sent to Madura in 1673.Upon arriving in India John de Britto studied the complex caste system of the Indian society, and realized that the major population of Christian converts at the time belonged to the lower caste. In his attempts to access the strata of upper caste, Britto followed the example set by Robert de Nobili, one of the most successful missionaries who initiated conversions as early as 1601 by imitating the



Site Plan of the St. John de Britto Shrine complex at Oriyur

culture and lifestyle of a Hindu Sanyasi.

Britto too converted himself into a '*pandara swami*' wearing a saffron cloak and living an indigenous lifestyle. Britto succeeded in establishing many stations and converting a large population, eventually accruing the wrath of the Raja of Ramnad who had him impaled on a stake after decapitation (Bayly, 1989, 403).

Following the martyrdom of de Britto, the Britto cult acquired new sacral powers that was celebrated and supported by local legends and folk songs. Regardless of their religious affiliations, people of the region - Hindus and Christians alike – regard Saint John de Britto as their favorite clan / family deity (P. Raj, pg 87).

Festivals and celebrations at Britto shrine :

The popularity of the Britto shrine as a Catholic pilgrim center is attributed to the sacral powers of healing and fertility that are attributed to Saint John de Britto and his martyrdom at Oriyur. Every Wednesday of the week is an auspicious day as it is the martyrdom day of St. Britto. The other three annual shrine festivals are the feast of St. John de Britto (Jan 26 – Feb 4), the anniversary of the canonization of Britto (Jun 20 – Jun 22) and the feast of nativity of Mary (Aug 30 – Sep 8).

Rites and rituals at Britto shrine

Influences from indigenous Hindu religious practices –

a) Pilgrims offering animal sacrifices during these occasions is a common practice. According to studies the number of animal sacrifices ranges between 600 - 800 goats and countless chickens during the annual September festival.

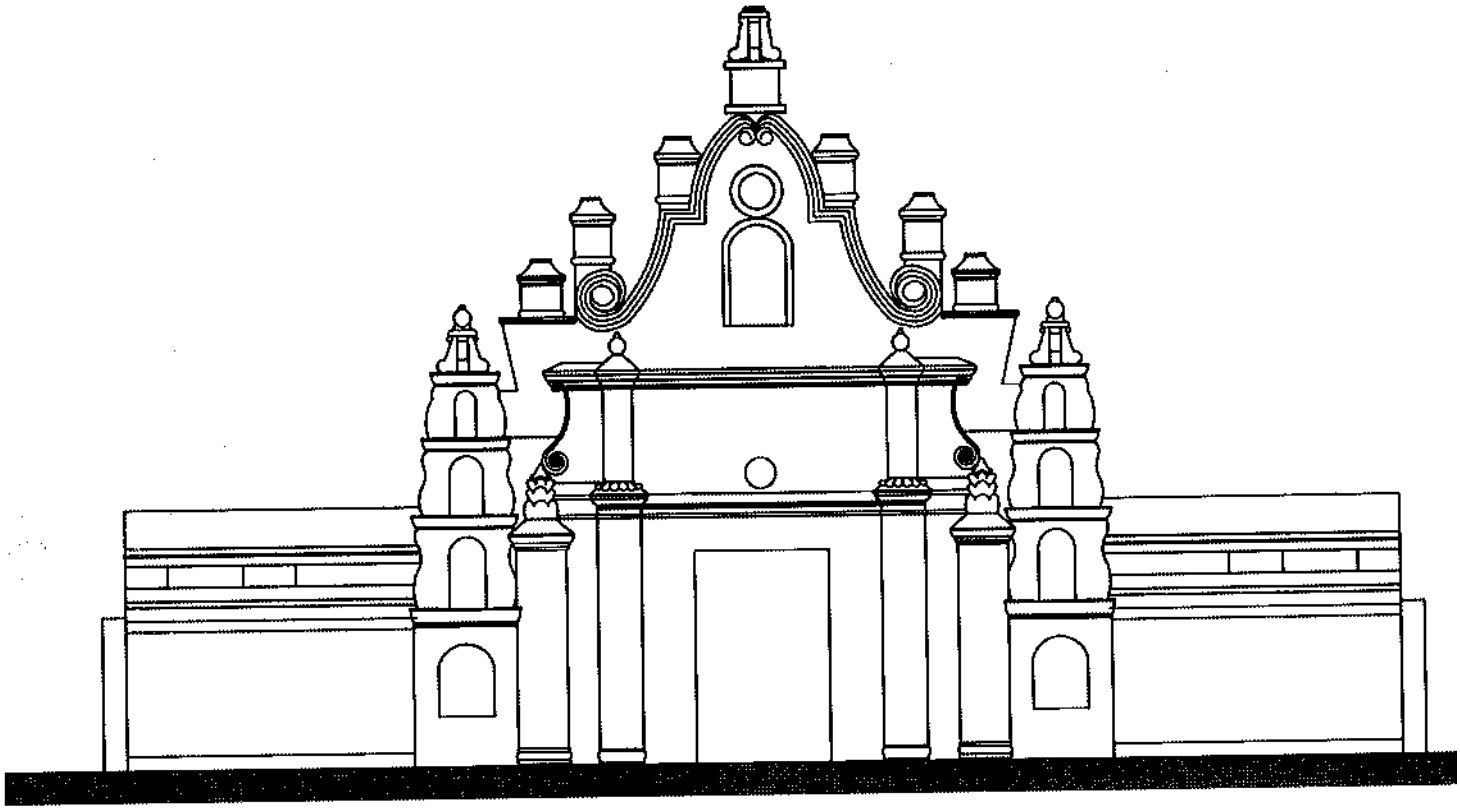
b) Hair sharing rites – The hair as a token of offering is a common devotional activity in most parts of India. At Oriyur too this ritual forms a popular pilgrim activity.

c) Fertility and healing rites – Prayers for fertility – fertility of land, cattle, crop and human is the prime purpose of about 50% of pilgrims who visit Oriyur. This popular association of the shrine with fertility is attributed to the miraculous property of the blood shed by John de Britto on the soil of Oriyur during his martyrdom. The symbolic connotation of the Red Sand Saint is associated with his magical powers of healing and fertility. Some of the popular fertility rites performed is the coconut sapling rite, cattle procession rite.

d) Cradle rites – One of the other rites performed for debt payment is the baby cradle rite in which the child is dedicated to the saint

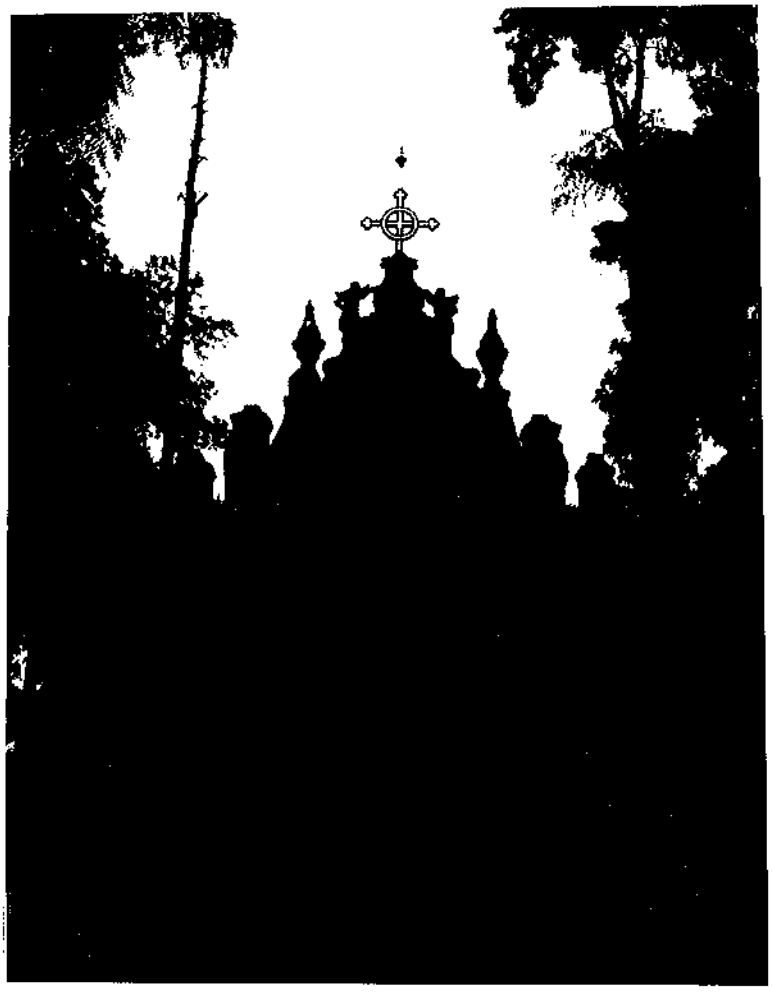
Catholic pilgrims import a series of Hindu rites and ritual idioms into their pilgrimage practices and direct them to the European martyr-saint, investing in him certain indigenous religious ideas, powers, and meanings – largely derived from village Hinduism – so that the European saint resembles in personality, power, and function, the tutelary deities of Hinduism.

Besides Catholics, the above mentioned rites are also observed by many Hindus. While these rituals are performed within the premises of the church, they are conspicuously marked by the absence of shrine priests. The priests prefer to symbolically distance themselves from these rituals as the context and manner of conduct resembles predominant Hindu and pagan origins, Priests of the shrine observe



FRONT ELEVATION

Front Façade of the Shrine of St John De Britto

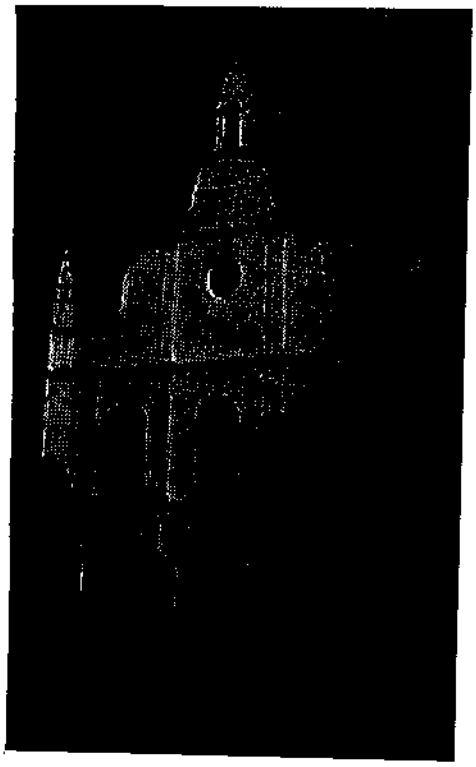


that official catholic rituals like the Mass and sacrament have only secondary importance (J. Ray, 103).

Architecture of the Britto shrine

Although the exact date and origin of the shrine of St Britto is unavailable, official records date the first physical structure as a small '*beedam*' built on the exact spot where he was beheaded. Initially permission to build the church was denied by the Sethupathi but later during the reign of Muthuvijay Ranganatha Sethupathi a small temple along with a tower was built in 1734. the front façade was later

View of front access to the St Britto shrine.



Church of St. Francis, Early Portuguese architecture

Luz church of our lady of light, Mylapore, Early Portuguese architecture

renovated in 1770.

The architectural characteristics of the church is a direct derivative of the Early Portuguese architecture witnessed in other parts of India such as Goa, Diu and Mylapore.The church has a symmetrical façade with the early forms of stunted bell towers, the front faced is a mere pseudo wall that hides the barrel vaulting atop the main aisle. This wall is decorated with typical Baroque ornamentation such as the steep curvilinear forms interspersed with small modules of vase patterns.

The overall façade is broken into a two storey structure height demarcated by round column pilasters. The use of small cicular openings is another notable feature of early Portuguese Church architecture as evident in the St Francis church Goa, St Paul,s church Diu etc...

Conclusion

Paul Oliver has argued that there is no such thing as a traditional building but rather buildings that embody certain vernacular traditions. (Oliver, xviii). Similarly Nezar Al Sayyad argues against the etymological classification of vernacular; which requires the artifact to be native and unique to a specific place, produced without the need for imported components and processes. He calls for the recalibration of such aspects of the vernacular in the light of culture and tradition becoming much less-place rooted in contemporary context.(Asquith&Vellinga, xvii)

The case of the shrine of John de Britto is a classic example of vernacular bordering on tradition and vice-versa as has been discussed above. While the architecture of the place is a symbolic reflection of the culture and the traditional values that produced it, the living tradition of the people itself is a reflection of the vernacular culture of the community that uses, nourishes and lends a distinct identity to the place Eventually taking us back to the beginning of this discussion-Has the architecture over the years internalized into the vernacular of the place or has it remained an external component – a reminder of its

origin and thereby subtely embodying the dual nature of its existence. While the architecture is a constant reminder of the religious affiliation of the place, to the people whose belief system surpasses the official norms of religion, it is but a mere backdrop, a setting for the events to be carried out. Unlike the case examples of iconic and landmark buildings where the structure itself evokes certain emotions and associations, in places such as Oriyur the notional conception of the power of the place, built and supported by the vernacular practices is more significant than any other concept of space.

In Oriyur is evident a model for the evolution of a vernacular that is beyond-culture and beyond-religion, transgressing borders and transcending established norms of communal practice.

Refrences

1.. Lindsay Asquith, Marcel Vellinga, Vernacular architecture in the twentyfirst century:Theory. Education and Practice, , 2005, Taylor&Francis.

2.. Oliver Paul, Encyclopedia of Vernacular Architectuire of the World, Volume1,1997, Cambridge University Press

3. Selva J. Raj and William P. Harman, eds , Shared Vows, Shared Space, and Shared Deities: Vow Rituals among Tamil Catholics in South India." In *Dealing with Deities: The Ritual Vow in South Asia*,. 43-64. SUNY Press: 2006

4. Selva. J. Raj, "St. John de Britto: The Marava Saint" in Phyllis Jestice (ed.) *Holy People of the World: A Cross-Cultural Encyclopedia, Vol.* 1, ABC-CLIO (2004): 141-142

5. Selva.J.Raj, Corrinne .g .Dempsey,Sacred play: Ritual levity and Humour in South asian religions,

6. Selva.J.Raj, Corrinne .G.Dempsey Popular Christianity in India: Riting between the lines, ,2002,

7. "Shared Vows, Shared Space, and Shared Deities: Vow Rituals among Tamil Catholics in South India." In *Dealing with Deities: The Ritual Vow in South Asia*, Selva J. Raj and William P. Harman, eds. 43-64. SUNY Press: 2006

8. 4. William.P.Harman(Ed) & Selva.J.Raj, Dealing with deities: The Ritual vow in South Asia, , 2006, State Univ of New York Pr

CREATING NEW VERNACULAR: RE-ENACTING CULTURE AND MAKING PLACE IN THE WINTER CAMPS OF BAHRAIN

Ranjith Dayaratne

Abstract

Vernacular in many parts of the world, particularly those that are rapidly developing under the forces of globalization have been undergoing dramatic change. From total abandonment to superficial reconstructions, vernacular in such societies survive often on the edge of perceptual, social and physical space, unsure of their place in the world and unable to compete with the ever-modernizing social space. However, the desire to return to, and to immerse even momentarily in the traditional and vernacular have resurfaced in many a ways from ubiquitous designed villages and renovated historic centers to modern shopping malls in almost every modern community.

In Bahrain, such desires manifest more clearly and determinately during every winter period, when the rich urban dwellers choose to reconstruct what is perceived to be a reproduced version of the Bedouin tents in the cold deserts of its hinterland. The traditional Bedouin tents in the Arabian deserts had indeed provided for all activities of life in the deserts in the past although now, they have been abandoned in preference to the individual villas, the compounds and the housing condominiums.

Despite having been provided with the modern amenities such as electricity, satellite televisions, microwaves and barbecue settings, the winter tents seem to re-enact some of the unique cultural practices of the past Bedouin culture. This paper takes a closer look at the winter camps of Bahrain which have become a modern vernacular practice that borrows from and temporarily reconstructs a by-gone practice of every day living that had existed among nomadic Arabs. It examines the history of the traditional tents and Bedouin camps and the ways in which they relate to the contemporary vernacular of the winter camps. It takes the position that the future of the vernacular lies not only in the continuation of the old but the inventions of the new that builds upon those cherishable from the past.

Key words: *Vernacular, Bedounism, Bahrain, Winter Camps, Culture*

Introduction: The Bedouins and the deserts

Since the historic times, deserts of the West Asia have been home to many a wandering tribes following nomadic life styles. Unique cultures and places had evolved among them which acquired and sustained the traits of harsh living, allegiance to lineage, warm hospitality and rudimentary leisure. However, studies show that not all nomads in deserts with such lifestyles were Bedouins. There are for example, the Berber nomads of North Africa, Kurdish and other Iranian and Turkish tribes, and some African tribes in Sudan who are considered to be different from the Bedouins[1].

Literature on Bedouins is scanty and most of those available are accounts of European explorers who had crossed the Arabian deserts as far back as 16th century (Bidwell, 1976; Thesiger,1985) and are couched in literature on Arab culture. Many of the western writers have romanticized their restless life styles and have characterized Bedouin culture with goat-haired tents, the camels and the colorful garbs and home décor with intricate decorations. In fact, Bedouins have been perceived to display ferocity and hard-heartedness, constantly engaged in fighting tribal warfare and the images often show them with daggers and swords. Undeniably, "Lawrence of Arabia" is a classic example of such romanticization that has provided the images of the Bedouins for the world outside the Arab region.

The Bedouin traditions had emerged associated with herds of camel they tendered in the Arabian, Syrian or North African deserts. Breeding herding and grazing the camels have been their main occupation which often involved conflicts with other tribes who shared the land. Constituted mostly of small groups, they had wandered the scanty desert in search of grazing lands and water and their economy had been constructed upon the goats and sheep at the core. Nevertheless, Bedouins were proud of their rustic life despite being unrefined and lacked any comforts and luxuries. Hence, their traditions and life styles had remained unchanged over thousands of years. However, according to Cole (2003) the temptations of settled life together with all the modern conveniences underpinned by the oil economies have seduced them and inevitably Bedouin way of living has become unpopular. In fact, in the light of common droughts that often take place across their natural habitats, they have been forced to give-up the nomadic life in preference to the city.

Unsurprisingly, oil has had the biggest impact upon Bedouin culture which provided tempting luxuries to almost all inhabitants of the Gulf. It has enabled the construction of luxury villas and houses within the new urban centres and the governments have lured them away from the deserts with free houses and other facilities (Hathloul and Edadan, 1995). Today, Bedouins have moved away from the camels to pick-up trucks and from camps to villas (Dawn, 1986). According to Lamb (1985), their population has dwindled across the Arabian deserts over the years from an estimated 200,000 in Jordan in 1950 to 50,000 in 1985 and from 1.9 million in Saudi Arabia in 1974 to 500,000 in 1985. Lamb says that the numbers today are hard to come by but there are indicators that Bedouins are all but non-existent, except for a few tribes still wandering the Saudi Arabian deserts.

[1] visit http://www.angelfire.com/az/rescon/mgcbedu.html

Bedouin culture

According to Lamb (1985), "the Bedouin culture has had an impact on almost every aspect of life in the Arab world, influencing the region's language, mentality and traditions. Lamb says that the famous Arab hospitality is really Bedouin hospitality, a strict code that dominated all social relationships. Living in an environment of desperate harshness, the Bedouins offered food and lodging for three days to any visitor, friend or foe, who entered his tent. When the three days ended, he was allowed to leave in peace, although on the fifth day, he might again become an enemy".

As a tribal community (*qabila*) comprised of clans (*qawm*) and then family groups, Bedouins preferred to live as large extended families and never formed complex social or political organizations beyond the clan. Each clan owned its own wells and grazing grounds and protected them with ferocity and perseverance for generations because without those resources, their very existence would be in peril. Clans comprised of family groups (*Hayy, Fakhida*) descending from one great-great-grandfather in the paternal line. This created very powerful bonds within the clan that established trust, friendship and allegiance that is characteristic of the Bedouin culture. Camping together most of the time, they took care of each other and took collective decisions with regard to matters of morality. In fact, these family ties were strengthened by intermarriage within the tribe whereby the sense of collectivity was rejuvenated and sustained. Unsurprisingly, there had emerged a strong sense of collective honour and loyalty which it defended against all other groups. Thus tribal and family honour was of great value and blood vengeance was at the core of the social life of Bedouins.

As a patriarchal society, a tribe acquires inheritance from the male ancestors among who were the leaders known as '*Sheikhs*'. Each tribe had a *Sheikh* who wielded his limited power within the dictums of tradition and customs, under the guidance of the council of tribal elders, who in turn established and yielded to the principles set by precedents. Like in most traditional societies, experience was considered the wealth of education, which could be applied in understanding and dealing with the hostile and difficult environment in which they lived and thus aging bestowed a Bedouin with a great respect and status. Sheikhs however came only from the noble families, each adult member being entitled to the position at the demise of the elder. Most issues the elders had to deal with involved rights to carefully defined grazing lands and camping grounds for summer and a winter. They ensured that loyalty to the tribe was maintained and each member offered obedience to its leaders. The Bedouin lifestyle that had survived through centuries followed a strict code of rules the breaking of which was perceived to be shameful (*Eib*). It stressed the values of generosity, hospitality, respect, cunning and revenge. Bedouins learned to endure severe physical hardships and this was the test of their learning, experience and manhood. Unsurprisingly therefore, Bedouin history is ripe with inter-tribal wars, revenge killings, instability and disintegration except for the centralized rule that has kept them together through the past.

The Bedouin tents and camps

According to records, the Bedouin's adobes were simple small huts that displayed their temporary nature of habitation and constant movement. The long, tent like structures were made from goat and camel-hair fabric woven by women while the men grazed the goats. In constructing a tent, a series of tall central poles were erected in the middle from the top of which strings were pulled away to the ground and fixed to the anchors or lower poles. So simple the tents were, they could be erected quickly and dismantled equally quickly when they had to move. The goat skin fabric stood well to occasional rains because the wool and hair from which it was woven expanded when wet. The tents provided warmth in the cold desert nights, shelter from the wind and shade from the hot sun during the day. Its sides could be rolled up when cool breeze was available and thus provided well for the circumstances of life in the desert. The larger the tent the higher the status of the inhabitants was and it was generally perceived that the number of poles indicated the wealth and social status of the family within.

The space contained within the Bedouin tent was divided strictly between men and women in accordance with the Bedouin traditions. According to Gardener, (2000) the men's living quarter was at the front and was divided by a curtain known as *ma'nad* from that of the women. In the *maharama*, or 'place of the women', the women entertained the female visitors and cooked, while in the *Mag'ad* or the sitting place, the men entertained the male visitors. The floor was covered by rugs and cushions for sitting and sleeping while the stores of water and food were stacked at the back in sacks and containers.

Generally, immediately outside the men's space another open space existed with the all-important coffee hearth having been at the centre. Coffee making and serving implements scattered on the sand as if to invite the guests. In good weather, the visitors, particularly men would be entertained in this front area while the women watched their men and visitors by looking over the curtain. The family lived, slept and cooked its food in the women's quarter. The Bedouin hut was a simple space and its containers were few. However, if the Bedouin had affluence, few modern gadgets

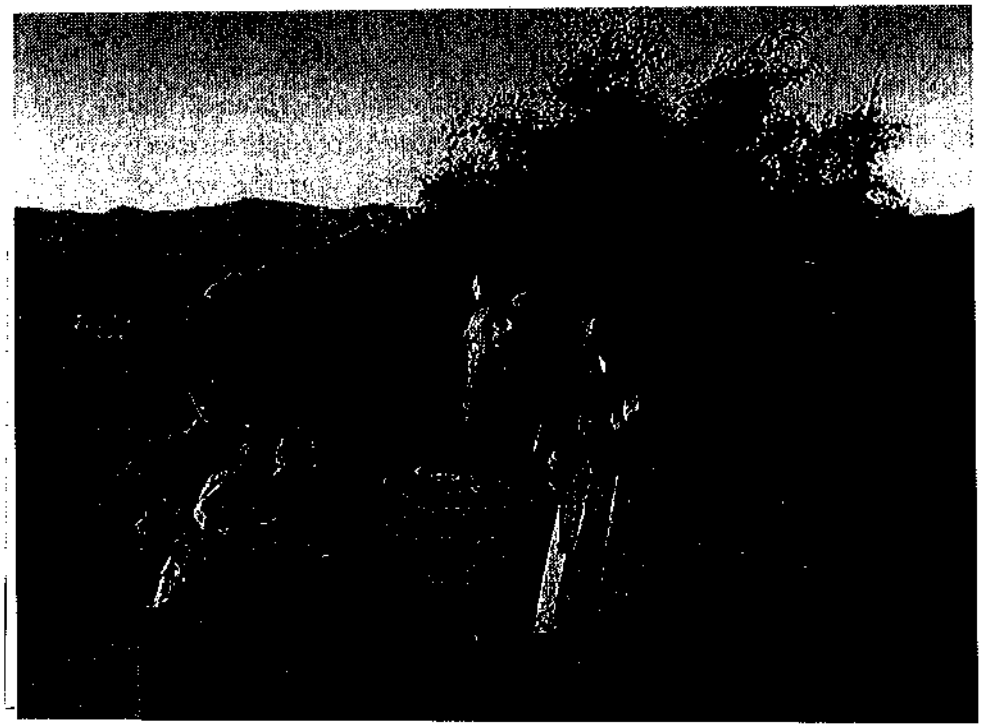


Figure 1: Typical Bedouin camp

Source: http://www.old-picture.com/europe/Bedouin-Camp.htm

may also become part of its contents. These usually included an electricity generator for light and power, a TV set, or a sewing machine. Moreover, a tractor or a pickup van may replace the camels or may be added to the usual flock.

The Beduion life had to cope with some of the most unpleasant conditions of the desert such as the hot desert winds, sand storms, excessive sun, and absence of basic necessities of life. Nevertheless it was also enchanting with the total silence of the vast spaces, overbearing blue skies, cold breeze in the nights, moon-lit emptiness and above all feeling of simplicity and being in touch with the natural earth.

Bedouins of Bahrain

In the known history of Bahrain that goes 5000 years and more, there is no written record of any presence of Bedouins. In fact, the Bahrain museum which takes pains to record and present the ancient Dilmun civilisation, the worlds largest burial mounds and the pottery works of A'ali and the typical Arabic trade, costumes and daily life do not make any references to the presence of Bedouins in Bahrain.

Lamb however suggests that there have been some Bedouin life there. He quotes a minister of Bahrain who in 1989 has said, "But in Bahrain, there aren't any... we have had oil for 50 years and now, that life style just does not exist here anymore. Bahrain is perhaps the only country in the Arabian Gulf where the Bedouins have been totally assimilated, where the Bedouin culture has almost ceased to exist, except for their re-constructions every winter in the Bahraini Deserts".

The contemporary discourses and practices however suggest that a sizeable section of the contemporary Bahraini society associate themselves with the Bedouin culture, attempt to re-kindle traits of that life style and cherish the traditions that have connected the Arabs to the desert lands. In 1997, in a blog site maintained by Ebrahim, an interesting discussion took place about the rising culture of what was called "Bedouinism" (http://emoodz.com/?p=228). The discussion noted that there was an emerging public display of Bedouinism among some of the 'public figures'. It also noted that while around 1970s and 1980s, associations with Bedouin culture was looked down upon by the populace, and that there has been a trendy surge in the emergence of a new Bedouinism, a kind of hippy style becoming popular among the urban youth. The bloggers argued that this new style emerged from the "many popular GCC cultural icons (singers and poets portraying and celebrating the Bedouin culture that has given rise to the Bedouin image and made it a hip sensation in the UAE, Qatar, and Saudi Arabia starting the late 1990's).

The major characteristics of this trend according to the bloggers were as follows.

- The rise in popularity of the hamdaniya (a UAE style semi turban made by tying around the head instead of wearing it)
- The increase of Bedouin style poets and poetry displayed in what are now weekly poetry extra editions in our local newspapers.
- The rise in the trend of titled igaal and the adoption of the heavy accent and new words

unfamiliar to the Bahraini dialect vocabulary such as mar7ib ilsa3 (Hello), isha7lik (How are you), illa (on the contrary)

The bloggers argued that the trend has been imported to Bahrain through the following methods:

- The Bahraini media's portrayal of the King's sons (Nasser and Khalid) in Bedouin style clothing, speaking in a Bedouin accent, enjoying originally Bedouin recreational activities (writing poetry, riding horses.)
  Their recent image has been greatly influenced by their newly made UAE royal friends, in particular (Faza'a bin Mohamed bin Rashid Al Maktoomnd and cousins, http://www.fazza3.com). Faza'a in particular is a "so called" poet and a competitive horse rider and is a teen cultural idol in the UAE. (Besides being the handsome rich son of the UAE's crown prince). Nasser and Khalid's interactions with Fazza'a and his father through horse competitions and the constant UAE media and internet frenzy circling Fazza'a is said to be probably one of the reasons behind this behavioral change.

- Moreover the Bahraini people constant bombardment by images of Nasser and Khalid by the Bahraini media has clearly left its effect on some Bahrainis.

- Links between Bahraini family members and their families in Qatar and the UAE have led to the transfer of some customs between each other.

- The rise in popularity of the Bedouin image culture through GCC media and internet sites, forums, and blogs.

(Extracted from the blog site:)

However, according to Lamb (1985), Bedouins of Bahrain were from the Khalifa clan of the *Aniza* tribe who arrived from Qatar and once roamed in Bahrain, eventually fighting the British to reclaim the island and establish a kingdom. It seems that Ebrahim's blog provides some support to this theory, because as it is accused there, Contemporary Bedoinism is promoted by the Royal family who seems to be re-constructing some kind of roots with what Lamb has quoted.

The Research

This research examined the seasonally constructed winter camps of Bahrain - their physical social and psychological make-up. It is an attempt to understand the phenomena of 'new vernacular' emerging in the modernizing and globalizing societies in the Gulf in the context of development and culture change. Globalization undeniably has set in motion many social processes aimed at countering the adverse impacts of the trend and the construction of the winter camps was seen as an 'escape' from these impacts. As an annual ritual, it also celebrated the change of weather so uppermost in the minds of the inhabitants of the Gulf whereby old traditions were brought back to life, to inculcate values among the society, to educate the young and to sustain cultural identity. The study was aimed at extending our understanding of the post global society and its ways and means of constructing culture, creating place and inhabiting the earth.

Research methodology

This research employed multiple research methodologies to gather data on a multitude of aspects of winter camping such as cultural history and production and use of the camps. It examined literature on Bedouin camps to understand the historical cultural context that is no more and observed the construction and dismantling of the winter camps in Bahrain over four years and recorded the patterns of occupation of land. Informal discussions were conducted with some of the occupants and having observed a general trend among the youth to follow a new 'urban Bedouinism', blog sites were searched to understand the dialogues among the Bahraini people. The data collection was conducted from 2006-2010 and is based on four reconstruction periods of winter camps of Bahrain.

Winter Camps of Bahrain

Quite contrary to popular perceptions, Bahrain has a seasonal weather pattern with a hot summer from June-September, spring from September to November and cold winter from November to April. The onset of winter subsides the usual summer sandstorms and makes outdoor living not only possible but also exciting and invigorating. Although the Northern region's green fields will flourish and bloom with winter, the deserts however remain unchanged except for the cold weather and the absence of desert-storms.

As winter dawns, some behavioural changes can be seen among many Bahraini families. On the one hand, many outdoor spaces such as the sea front in Manama and the inner labyrinths of the Manama *souq* and other spaces come alive with gatherings of men who while away evenings drinking coffee and generally socializing. On the other, some Bahraini families head to the deserts to claim a share of the fun that develops there in constructing an outdoor life that has been denied to them by the harsh climate and the cruel summer. From November to March thus, the midland desert becomes a playing filed; a mushrooming erections of barbecue settings and the social gatherings. Celebrations take place *en-masse* with some times even wedding ceremonies organized within these sites. Winter camps in Bahrain are unique in that the event of the dawn of winter is celebrated not only by tradition-valuing Bahraini families but also the corporate establishments that entertain large numbers of expatriate staff there.

The winter camps are however not in any sense a reconstruction of a by-gone socio-cultural practice or a return to its past Bedouin culture. To the contrary, it is a new invention that has symbolic, perceptual and experiential links to an imagined past. On the one hand, despite a history of Bedouin culture in the deserts of Saudi Arabia, Bahrain has not had such a history of Bedouin past; at least not according to its written and celebrated history. On the other, the culture that is emerging does not represent Bedouin life styles nor does it pretend to do so. Nevertheless, there is a 'Modern Bedouinism' that is acted upon as a temporary practice of habitation constructed against the westernising urban modernity typical in the Gulf.

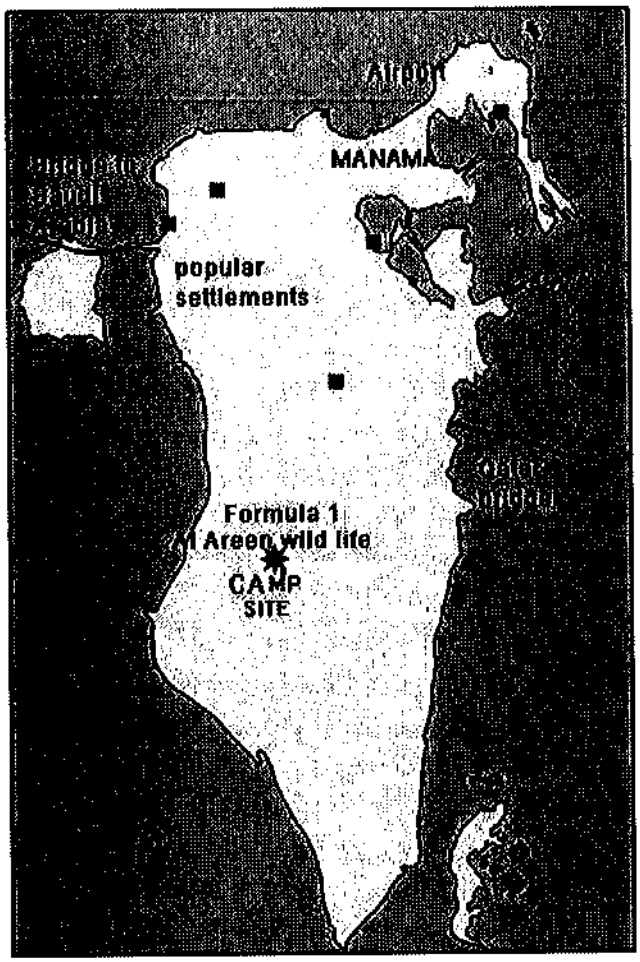


Figure 2: The Location of the winter camps

Winter Camps: Spaces Places and People

The seasonal recurrence of the winter camps of Bahrain occurs in the middle of the island few kilometres away from the inhabited land, so it is easily accessible and does not become a 'place-too-far-from-home'. Of course, the southern half of the island is not accessible to the public for having been assigned as the training grounds of the Bahrain Defence Force (BDF). However, the sites of the camps lay at the foot of the hills, adjoining the first oil settlement *Awali* on either side stretching as far as the Royal Compound on the West and the Industrial estates on the East. Through the site runs a few two-lane roads leading to *Durat-Al Bahrain* (The luxury housing enclave created at the bottom of the island) crossing the somewhat mountainous rugged terrain.

The 'site'— an uninhabited and barren desert during the summer is promptly occupied in winter by families and family clans in an almost pre-determined manner. According to the rules, any one interested in camping is entitled to occupy a parcel of land there for the duration between November and March, in temporary structures. No fees charged and no taxes levied. In fact, no state services are provided except general policing for unlawful activity. Understandably entrepreneurs have filled the gaps by providing various services at a price. Small huts selling 'sundry provisions' have also come up here and there.

Three categories of camps for winter camping have been observed to emerge.

- Individual single camp huts
- Camp settlements with a number of huts and a central facility
- Corporate settlements with huts & caravans etc.

The solitary hut (Open and Enclosed)

The most rudimentary winter camp is a single tent hut set-up in a space secluded by a few pegs in the ground or a fabric fence. It first and foremost portions out a bounded site from the vast desert land, defined and concretised by the boundary so defined. In the middle of it is situated the tent either totally enclosed with a single door opening or a full one-sided opening. Often within a site a small toilet unit will also exist by the side of the main hut.

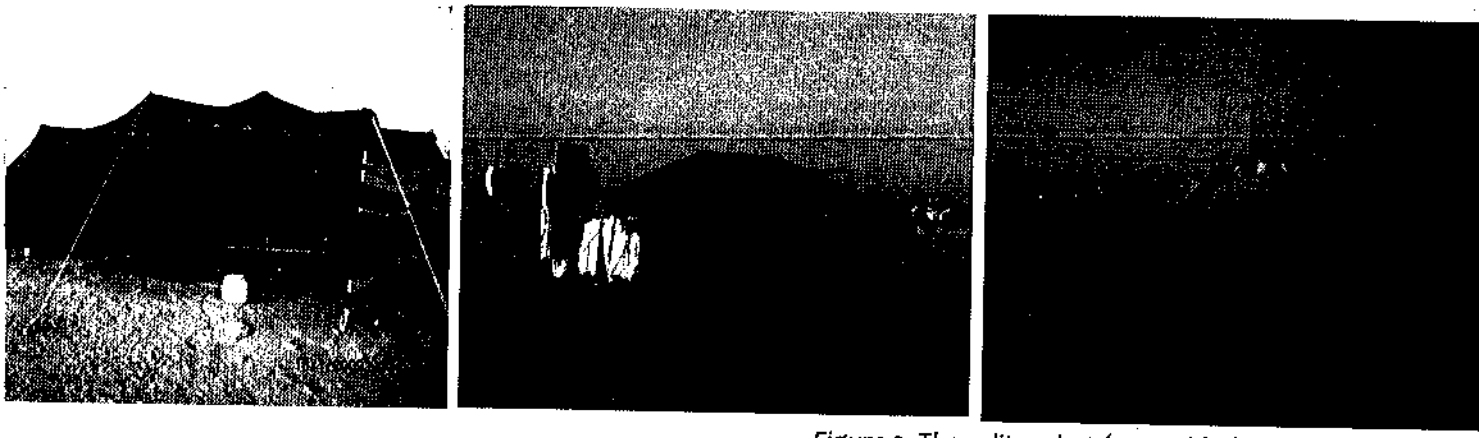


Figure 3: The solitary hut (open sided and closed)
Source: Author

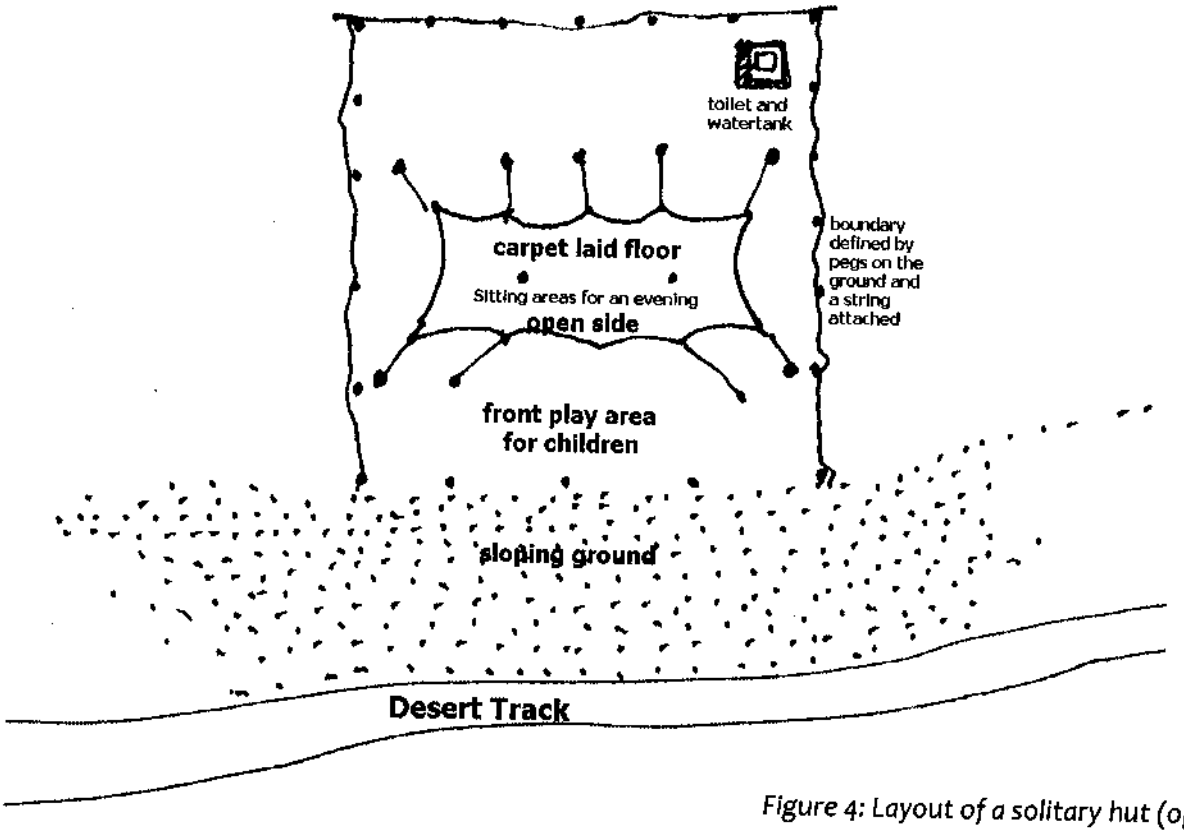


Figure 4: Layout of a solitary hut (open)
Source: Author

The solitary one-sided hut is sometimes an entirely male space which is occupied in the evenings and becomes a communal social space late into the night. Decorated with the typical Arabic fabric décor and divans on carpets, the space provides for groups of elderly or middle-aged men who come together to sit and sip coffee, engage in conversations and smoke the traditional '*shisha*' that come in the colourful bottles with long pipes. The settings of such huts are not fixed as such and are not permanently defined as male or female spaces. In fact, the same hut may on a different day and on an occasion may be occupied by the families of the men, when the children play in the centre surrounded by the men and the women who sit around. A TV may be on and coffee may be served.

The construction of these huts however is not always done by the people who own or inhabit the spaces, although sometimes they may be erected by young men of the families. However, in keeping with the contemporary practices of building in the Gulf, foreign labour is employed as it is readily available, inexpensive and more reliable.

The architecture of the huts however has a close resemblance to the Bedouin huts although the traditional male female divisions, the separating curtains and the outdoor coffee hearth or the implements necessary to make coffee there are absent. Instead, the families bring the coffee and other traditional foods such as the *shih tawooq* and the space is transformed to a nomadic adobe.

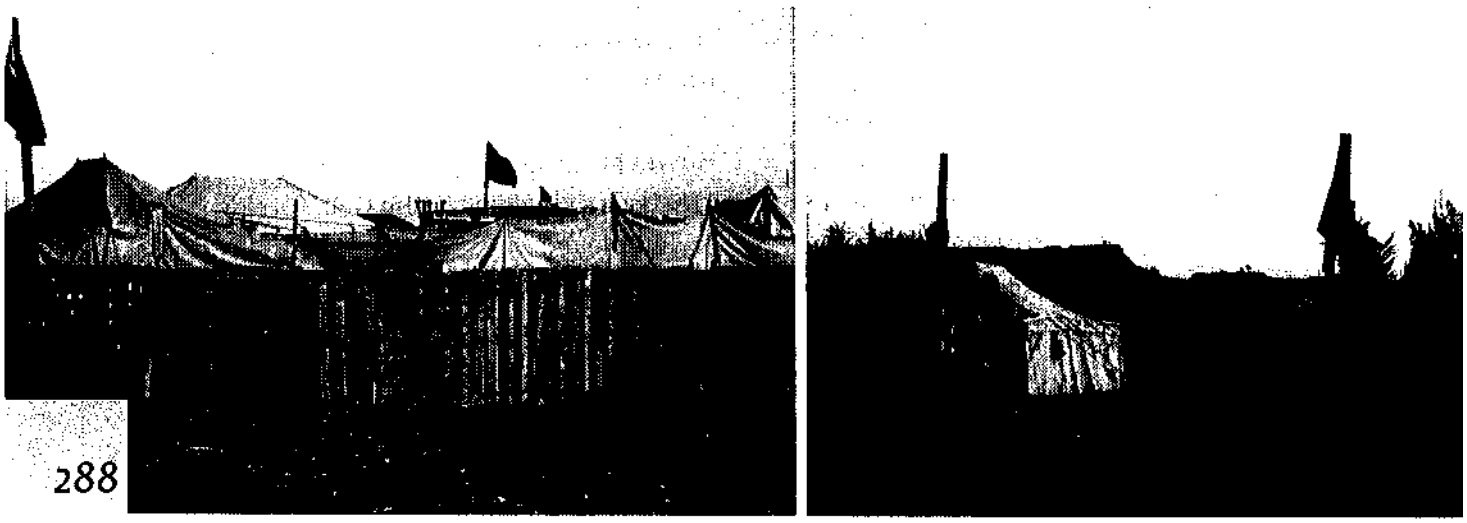
Open solitary camps are generally constructed overlooking a dirt track or a public thoroughfare, if not a valley below. However, open camps are not many in numbers although enclosed solitary camps are common. The enclosed solitary hut is a single tent with a small entrance opening and a few pull up windows, constructed upon and around one or two poles in the centre by means of a tweed cloth spanned across and then down to the ground and anchored. Within, all facilities sufficient for living will be cluttered as spaciously as possible within the space. A bed, a sofa, a small kitchenette and spaces for the '*shisha*' and other utensils will be stacked together with the implements for a fire place and barbecue. The Camp is 'lived-in' primarily during the night and the space outside is transformed into a fire-barbecue setting around which the families will sit, socialize and make fun. Interestingly, the camps are lit not just within, but elaborately on the outside on the edges of the huts enclosure if only to make its configuration visible as an illuminated entity in the otherwise unlit desert.

The Family Camp: Cluster of Huts

In comparison, the family camp is a more elaborate setting which occupies a large parcel of land and is almost always totally enclosed within high perimeter boundaries. The perimeter is constructed as high as six or seven feet in keeping with the Islamic traditions and provides enhanced privacy within its enclosure. Inmates establish both visual and social distance from their neighbours, even though many camps are constructed next to each other. The entrances to the family camps are almost always indirect, if not also closed with high gates. The perimeter constructions take two different forms; closely situated palm prods and palm thatch in between a fence made of wooden poles and horizontal wires, or an ad-hoc collection of wooden slatted panels, boards and other salvageable materials from the modern industries.

This conglomeration of an ad-hoc set of panels gives the camps an undeniable temporary feel,

Figure 5: Family Camps
Source: Author



insignificance and indeed ruggedness and rusticity that reflect similar characteristics of the Bedouin camps albeit in a different form.

The family camps are comprised of a number of single, fully enclosed single huts laid inside and along its perimeter fence facing the central space. Usually, only the deep-end part of the camp site is occupied with the huts while the front part is left as open space which becomes a children's play space, a car park or both. In the central space is erected a small hut under which a hearth or cooking/ barbecue facility together with a cluster of seats in the surrounding. While during the day time, the camp may be left and its occupants return home, as the night sets in, families will drive down their and the entire camp comes alive with a hive of activities. Generally, huts are occupied by the families and the men gather at the central space.

Figure 6: A Lay-out of a family camp
Source: Author

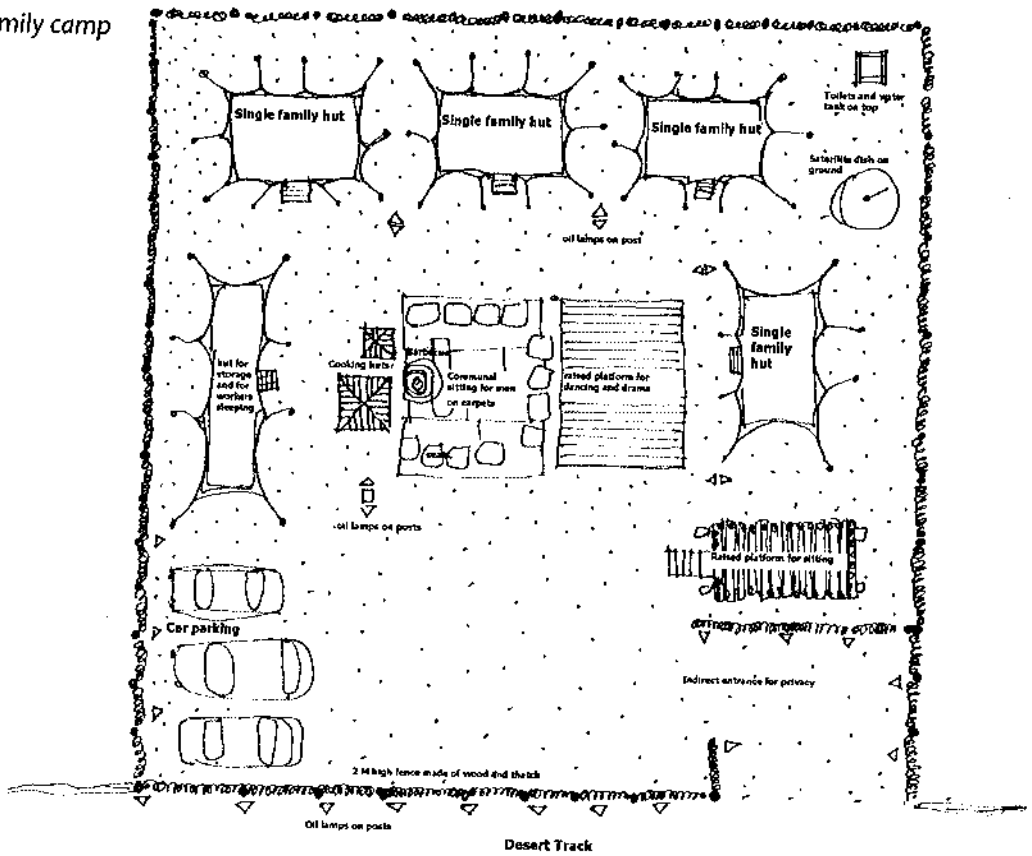
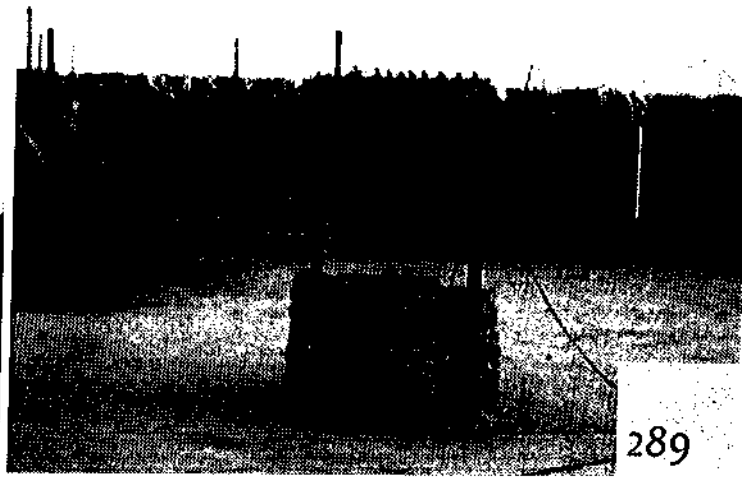


Figure 7: Central space
Source: Author



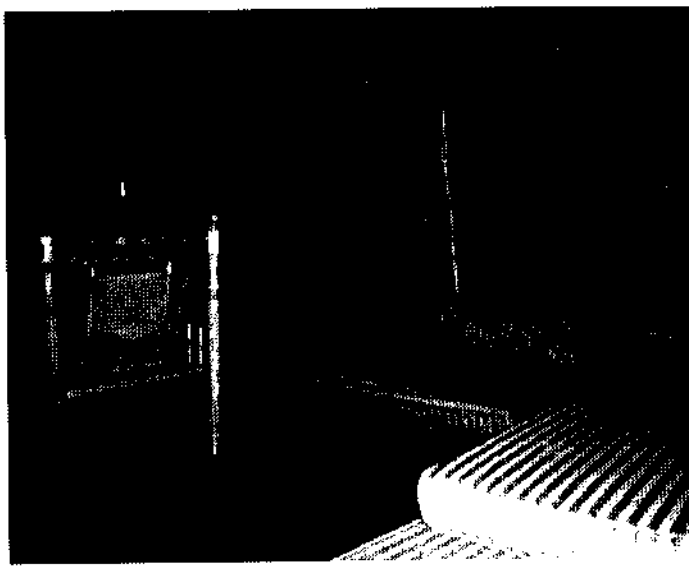


Figure 8: Interior spaces
Source: Author

Dancing begins with music on a stage while children play in the yard. The teens and adolescents may venture out on the road, cycling racing or playing volley ball. The family camps light up the entire desert in the night with music and dance and a hive of activities all aimed at making the most of the pleasant weather and the opportunity that is available to live outdoors and experience being under the sky, the moon and the stars in the night.

The New Vernacular: Emerging Traditions of the Urban Nomads

The annual, almost ritualistic construction of the winter camps suggest that a new vernacular is in the making in the deserts of Bahrain that is loosely yet most certainly hinged on the age-old traditions of the Bedouin camps of the Arabian deserts. Its undefined inhabitation of land at will and the quiet negotiations that go among the neighbours already camping there when one moves in to set-up a camp is undeniably reminiscent of the Bedouin culture of anchoring in the deserts. Its temporariness is prompted by the harsh weather as well as the rules of the desert now established by the rulers of the land. When the campers leave in March, the land returns to its natural uninhabited state awaiting the next winter and the next wave of inhabitations of the modern urban nomads. Indeed, it is as if the 'nomads' have temporarily moved to a new kind of a camp: the city, only to return at the next winter.

The modern urban nomads drive the luxury Lexus cars or four wheel Toyotas and Hummers, carry mobile phones and watch TV during leisure, but are still strongly tied by the family clans, show obedience to the clan and uphold the noble values of their ancestors. Night is celebrated with the camp fire as the focal point of gathering and the activities such as story telling, dancing smoking, and coffee drinking have become intense ways of indulging in the Bedouin life

Figure 9: General view of the area

experience at will and at the luxury of choice rather than out of necessity.

In the process, old traits of culture have been re-enacted and new traits created. Places have been made to emerge to sustain and perform the carefully orchestrated ballets of activities that ensure joy, excitement and leisure rather than the drudgery of the life of the Bedouins. These transformations of traditions and cultural traits can be summarized as follows.

Traits of Bedouin Culture	The form of re-enacting	New traits added
Temporary occupation of land: moving from place to place.	Temporary occupation of land: seasonal only	Constructed almost at the same location every winter season.
Camping as the main form of habitation	Camping as only a form of leisure	Often night occupation return to the city daily.
Moving in search of grazing land and water	Not re-enacted	Not relevant
Women indoors and men close to the outdoors	Women occupy the camp huts while the men the outdoors in family camps	Women and men share the spaces in solitary camps:
Fire as a central place to gather and socialize	Fire as a central place to gather and socialize. Family prepares the food.	Barbecue added around the fire place. Migrant workers produce food.
Camel as companions to travel and transform goods.	Camels and donkeys as companions for joy rides and for leisure.	Automobile has become a natural accompaniment to daily life.
Night is celebrated with camp fires and lived out as the pleasant part of the day	Night is celebrated with camp fires and lived out as the pleasant part of the day	Excessive illumination of the camp with fires as well as generated electricity.
Social interaction as the main form of leisure	Social interaction as one of the main forms of leisure	Other modern amenities added: TV, video games, go carting exciting sports in the vicinity of the camp.
Territorial rights as sacrosanct and inviolable.	Trespassing both visual and physical considered a serious offence	Recognition of public space almost outside the camp without visual intrusion.
A great sense of hospitality. Strangers welcome	Controlled sense of hospitality. Visitors by invitation treated with a great sense of hospitality.	Strangers not welcome at all. A reaction to the presence of public space

Table 1: Cultural Traits: from Bedouin camps to winter camps

Traditional Practices of building	Reproducing the traditions / New traditions of building
Goat skin fabric as cover	Numerous fabric covers, imported factory produced tweed; thin plastic sheets
Wooden poles and wooden pegs to support structure	Variety of structures from steel poles to wooden pegs.
Goat hair ropes to stretch out the tents.	
Inner floor covered with rugs and goat hair carpets.	Inner floor covered with rugs and carpets.
Cooking and other implements hung on the fabric wall and the support wooden frame	Variety of methods: movable storage stacks as well as traditional form of hanging
Male and female spaces divided by goat skin curtain.	Male and female divisions some times fused. Or separate huts for males and females
Dismanteled and re-erected by the Bedouin occupants themselves	Occasionally dismantled and re-erected by the occupants themselves. Often employed labour
Transported on camels	Transported in Pick up trucks
Daily and routine maintenance by the owner-women.	No such daily maintenance, since the materials last longer. If required annual mending at workshops in the city

Table 2: Making the Camps: Spatial and building practices

Conclusions

Vernacular Futures

There is evidence that in the fast modernizing countries such as Bahrain, tradition-led vernacular is slowly disappearing abandoned by the people who are moving to the cities and living out modern life styles. Bedouins for example are all but non existent and together with their traditions and cultures Bedouin vernacular practices have ceased to exist. Although culture change is inevitable, there is a growing unease that with such drastic abandonment, people may begin to feel rootless, a sense of loss and a loss of identity that is paramount for healthy social well-being. Mitchell (2007) for example the globalizing city - Dubai having progressed fast and having acquired a global city status had erased all traces of the vernacular and the traditional and is now regretting the erasure and yearn for the reconstruction of them to regain a form of identity they feel they have lost.

Vernacular as a form of social practice however is unlikely to disappear as long as people have the freedom to act in the built-environments in which they live. In Bahrain, a greater freedom seems to exist for people to do things the way they like, in the uninhabited desert lands which have been allowed to be occupied once every year during the winter. When social, political and physical space is so available, vernacular seem to emerge in new forms prompted by

both imagined and real past cultures and practices. Winter camps in Bahrain demonstrates that although there has not been a strong Bedouin history in Bahrain, its people seem to have burrowed the traditions and cultures of the shared larger community of Arabs – from Saudi Arabia and the northern African deserts Indeed, its people seem to have imagined a nomadic root that is believed to have existed and seem to reconstruct it in the contemporary context fused with new traits, enabled by the new possibilities available to them. New traditions are being produced in the process which differ in both content and process from the past traditions. This new vernacular is underlined by both spontaneous and informal bottom-up processes that emerge from the people in performing their daily lives negotiating the formal cultural settings and processes. Future of the vernacular thus does not seem need to have past tradition as the core of its practices yet able to produce new ones by 'gathering' and 'assimilating' cherishable traits from an imagined past.

The need for new traditions to be created and new vernacular to be practiced is undeniably natural to social existence. Popper (1968) in formulating a theory of tradition shows that 'tradition is needed in order to "bring some order and rational predictability into the social world in which we live". Hathloul (1996) argues that the values of tradition lie in the fact that it forms the most important source of our knowledge and serves as the base for our thoughts and actions. It is a platform upon which one can operate and contains a strong allusion to imitation. He suggests that what is most important is not the preservation of tradition itself but the establishment of a sense of continuity with that tradition.

Culture and tradition are productions of people and whether they live in traditional societies or modern global ones, everyday life produces them in numerous fashions because they form the bedrock of community and habitation. In understanding this phenomenon, Tuan's fruitful concept of 'escape' offers an invigorating tool (1998). Tuan points out that culture is an 'escape from Nature', and 'escape into Nature'. As he argues, if city was constructed as an escape from Nature then, today, society seem to be escaping into wilderness, the countryside and the resort. Indeed, even the mega-shopping mall can be seen as a surrealist escape from the city itself.

Winter camps of Bahrain are undeniably escapist and offer an immediate getaway from the drudgery of the urban life which is characterized increasingly by routine, stressfulness, tension, conflicts and boredom. City life in Bahrain is more so given the harsh climate, smallness of the island, absence of variety in the landscapes and places that offer different possibilities or varieties of places. Despite the luxuries offered by the oil wealth and the accompanying sophisticated life styles, its inhabitants see an enchanting escape in the winter camps, where past is lived in the imaginary, routine is fractured and informality is acted out through the dust and the winds of the desert. Life is coloured through the impermanence of being, absence of the pomp and pageant and abundance of social contact and simple leisure of just being around the fire place.

Indeed, new vernacular itself can be seen as an escape from the old traditions. As this research showed, new vernacular re-enacts the traditional cultural traits, yet not

necessarily with their rigidity or control. The new vernacular offers freedom, new ways of building, thinking and new activities. This research shows that in the winter camps of Bahrain, such a new vernacular is in the making and new traditions are taking root disguisingly linked to the primitive and historical past as alternatives (escape) to both rigid-traditionalism and globalizing modernism.

Reference

Bidwell, R. (1997) Travellers in Arabia. Garnet Education.

Cole, D. P. (2003) "Where Have the Bedouin Gone?" Anthropological Quarterly. Washington: Spring.Vol.76, Issue 2.

Dawn C. (1986) From Camel to Truck. The Bedouin in the Modern World. New York: Vantage Press.
Gardner, A. (2000) "At Home in South Sinai." Nomadic Peoples.Vol.4, Issue. 2; pp. 48–67.
Hathloul, S. (1996) The Arab Muslim City: Tradition Continuity and Change in the Physical Environment, Riyadh: Dar Al Sahan

Hathloul, S. and Edadan, E. (1995) Urban Development in Saudi Arabia, Riyadh: Dar Al Sahnan.

Lamb, D. (1985) "Bedouin Culture Vanishing" in Anchorage Daily News, 18 April 1985.

Long, David. E. (2005) Culture and Customs of Saudi Arabia USA: Greenwood press.

Mitchell, K. (2007) Lamenting the Loss of a Past Constructed in the Present, in the proceedings of conference on Regional Architecture and Identity in the Age of Globalisation, Tunisia.

Popper, K. (1968) 'Towards a Rational Theory of Tradition in the Growth of Scientific Knowledge, New York: Harper and Row.

Thesiger, W. (1985) Arabian sands, Penguin books.

Tuan, Yi. Fu. (1998) Escapism. Maryland: John Hopkins.

Yehiya, E.I (2006) Travellers in Arabia: British explorers in Saudi Arabia. Stacey International Publishers.

Wynbrandt, J (2004) A Brief history of Saudi Arabia. New York: Facts on File inc. 16-19

http://www.angelfire.com/az/rescon/mgcbedu.html retrieved on 12th April 2010

http://www.old-picture.com/europe/Bedouin-Camp.htm (Image of the Bedouin Camp, retrieved on 12th April 2010) curator@old-picture.com.

REINTERPRETING VERNACULAR AS A STRATEGY FOR CAPACITY BUILDING IN THE URBANIZING SOUTH: ARCHITECTURE & LABOUR POLICY MAKING

Milinda Pathiraja

Abstract

Over the last 30 years, many countries in Asia, Africa, and Latin America have experienced a strong expansion of their urban economy, irreversible changes to their rural economy, an increase in urban land values, internal migration, and the urbanization of the poor. Today, in many large cities of the region, these factors have facilitated and intensified the fragmentation of construction activity into almost separate spheres of production, with little or no reciprocal connections in training, know-how, and career-development paths, and consequent limitations in cross-system application of technology transfer.

In such context, the discursive references of vernacular to create technically and culturally exclusive niche markets for architectural production could only reinforce the cross-market compartmentalization of building knowledge, and the subsequent inability of architecture to engage in social building production activities. Instead, this paper looks at the vernacular from a labour policy-making point of view, that is to integrate its 'on-the-job' training conceptions within a design and technological vocabulary that envisages real building projects as training grounds, thereby projecting the latter as a vehicle through which labour development opportunities are created and linked.

Keywords: Industrial fragmentation, Labour training, Vernacular practice, Robust technology, Architectural design

The realm of '*vernacular*' in the '*regionalist*' architecture: Ideological '*products*', cultural '*processes*' and social intent

Judging by the plethora of architectural monographs and research papers published over the last two decades under various themes coalescing the notions of 'architecture' and '*vernacular*', it is evident that the search for a '*new vernacular*' has become increasingly significant to the contemporary architectural debate in the urbanizing Asia, Africa and Latin America. The origin of such approach to architecture in the South can be traced back to the era of quasi-industrialization in 1960s and 1970s, where the inward-oriented economic models based on import substitution forced the building industry to experiment with new forms of construction using local materials and methods. Under the banner of '*critical regionalism*', however, the use of vernacular building methods for architectural production – in particular, those representations from the past - was later promoted as a '*style*' to reinforce the reconstruction of national cultures and identities, seemingly threatened by the forces of globalization. The local practitioners of this approach tend to rely on cultivated clients to produce their architecture, and are informed by ethos that seek to construct meanings to their work through '*identity*', appropriate '*style*', and the phenomenology of '*place*'. Although the self-imposition of boundaries is understandable from an operative and intellectual point of view, such a limiting position has led to a cultural avoidance of commercial and social building production spheres, thereby creating a restrictive framework for architecture to discuss the problems of mass housing, de-skilling, and urbanization.

In introducing the notion of '*critical regionalism*', Tzonis and Lefaivre (2001) claims that the concept of regionalism needs to be '*critical*' – as in the Kantian notion of '*test of criticism*' – in order to distinguish from its sentimental, prejudiced, and irrational use by previous generations. On the contrary, its current application in the urbanizing South has transported the idea of '*regionalism*' back to its obsolete, commercial, and chauvinistic campaigns. Incidentally, not only the ideological basis of regionalism, but also its technological framework has failed to respond to the shifting social landscape of highly urbanizing nations. The insistence of labour-intensive building systems, the dependence on scarce local materials and the reliance on highly skilled craft traditions have allowed '*regionalism*' to develop a place-based language of aesthetic seduction, but it lacks the necessary dose of realism to discuss the '*critically-regional*' problems concerning the physical, cultural and technical degradation of the society and its building sector.

In order to delineate an industrial response that is inclusive of the social program, it becomes necessary to overcome this discursive monopolization of architectural production, and develop regional practices that produce '*meaning*' to their work through social intervention. This will require a change in approach, attitude, and understanding of the way vernacular knowledge structures are incorporated into the contemporary

architectural practice. In particular, alternative strategies must be developed to bring together the socio-cultural and socio-technical underpinnings of the vernacular practice and architectural production, which however, must deviate from the idea of *'regionalism'* that projects traditional histories and technologies as a way of legitimizing ideological and cultural boundaries. Instead, a subsequent approach to architectural design must be derived out of its ability to discuss grass-root problems of the society at large.

Re-interpreting vernacular: Constructing a socially-relevant standpoint

The point of departure to such analysis naturally requires emphasizing a conception of *'vernacular'* from a socio-cultural point of view, as opposed to the general elucidations that see it as an idea belonging to a past tradition, thus bringing upon a nostalgic and parochial meaning to the word. In *'The New Fontana Dictionary of Modern Thought'*, for example, Michael Brawn (2000) defines 'vernacular' as an indigenous style of building *"...of considerable virtue and, to some extent, associated with a golden past"*. Alexander (1976), while admitting that the vernacular is extremely practical and has a balanced view of economy, calls it a *'timeless way'* of building that is universal and therefore, *'spiritual'*. In the book *"The architecture of an island"*, it is even claimed that the sensible building processes represented by vernacular has ceased in Sri Lanka (Lewcock, Sansoni & Senanayake, 1998). A more candid definition of *'vernacular'* calls it a rudimentary building of shelter and an activity that exhibits reason, efficiency, economy, and durability (Porphyrios, 1982). The idea of vernacular, as such, has not much to do with intuition, style, or spirituality; it rather points to ethos of constructing a building under the conditions of scarcity of money and materials, and operative constructional techniques disseminated through tacit and empirical knowledge platforms. In other words, it is a self-conscious process that responds to specific social, economic, and cultural dimensions of a given time and space. When compared with the lifespan of a vernacular framework, however, the evolvement of such self-conscious responses can be considered as insignificant to be recognized; with the failure to identify the origin of such processes, they are being received as intuitive responses.

On the contrary, if the socio-economic and socio-cultural reasons behind the formation of vernacular concepts can be identified – particularly, from a technology transfer point of view - they can then be reinterpreted within a design and technological framework that acknowledges the empirical knowledge structures and skill dissemination as key imperatives of the building process. Critical to this approach is the recognition that, although the historical associations are important to the development of a vernacular structure, it is an evolving socio-technical phenomenon; due to the changing economic and spatial conditions in urbanizing economies, the contemporary vernacular can be seen as having forms that are not reminiscent of a past tradition. Yet, as it was with the traditional societies, the

vernacular of nowadays produce solutions that are pragmatic, climatically responsive, and achievable inexpensively. On the other hand, however, certain transformations have led to deficiencies in performance and application of vernacular building practices, culturally as well as technically. One such problem lies in its knowledge dissemination.

Within the vernacular building traditions, transfer of knowledge and the subsequent development of specialized building crafts are manifested through a process of informal apprenticeship. This involves trainee-workers working on a task with someone knowledgeable – often the master builder - "*...by observing their methods, investing in the tools of that trade, absorbing their culture, and practicing under their scrutiny*" (Groak, 2001). During this apprenticeship period, it is expected that the apprentice will encounter most of the practical situations of the trade, and will learn not only from the master, but also from their own experience, thus inhabiting a self-learning capacity. Moreover, the simulation of practical tasks is done through sample tests and mock-up systems, which give an opportunity for discussion, reflection, and training on the work without the cost or penalties of unacceptable work in a real situation. The site-specific and team-oriented nature of vernacular production means that learning opportunities can also be created by merely observing others at work. In-fact, with reference to the volatile nature of building process, Groak (2001) claims that the best place to understand and learn about the ways of building is at the point of production – i.e., on the site or in the factory.

Barriers for cross-industry technology transfer: Pigeonholing of construction knowledge

However, the above process of knowledge dissemination based on a close association between master craftsmen and their disciples is increasingly threatened by the recent restructuring trends that have been taking place in the construction sectors of urbanizing economies. In traditional construction activities, the master craftsmen were responsible of organizing and engaging their labour gang, which often consisted of members from the same village, thus leading to the formation of artisan villages. With the recent introduction of labour out-sourcing practices, however, the workers now tend to transfer their allegiance to the person who finds them work and pays their wages – i.e., the labour sub-contractor – as opposed to the master builder who could potentially pass them the operative knowledge of the trade. This has diminished the traditional loyalty structures and hindered the opportunity for informal skill formulation.

The above problem is further amplified by the rural-to-urban migration process, which has led to a progressive growth of the informal sector workforce by generating a steady supply of unofficial workers to the urban labour market. This workforce is generally characterized by low wage structures, low skill definitions, lack of protection, dominance of self-employment, easy entry and low productivity (Oberai, 1993). For most of these migrants, who have neither the educational qualifications nor the practical knowledge to find employment in the formal sector, the construction work has become the

natural entry point into the informal job market.

However, without adequate knowledge-building platforms – both formal and informal – these migrant workers tend to confine forever into insular activity pockets, characterized by the low-skilled, labour-intensive, and informal building markets that they serve and the original social status that brought them there in the first place. This has led to a technological fragmentation of the construction industry by establishing further restrains for training, know-how, and carrier development paths, and subsequent limitations in internal knowledge dissemination and technology transfer. Such type of industrial compartmentalization is detrimental to the social acquisition of skills, and restricts the operational frameworks of given technologies (Pathiraja and Tombesi, 2009).

Increasingly, labour policy-makers - such as the International labour Organization (ILO) - are projecting the building sector as an important seedbed for employment creation in developing countries. However, the subsequent socio-economic growth of the construction workforce would not be possible unless knowledge-building platforms can be set up to help workers overcoming the *'technological barriers'* generated by their own skill limitations. In particular, adequate opportunities to *'bridge'* the knowledge gaps between different construction markets must be in place, allowing workers to travel across the industry and participate in other – and relatively capital-intensive - work that may offer them higher wages. The bottom line is that, unless the technological environment is embedded with an inherent capacity for labour up-skilling, the advance of labour from low-waged, entry-level, informal workers to well-paid, skilled workers does not occur as smoothly as policy makers may have implied.

Robust technology: Imagining labour up-skilling through building process

A position taken up by this paper on workforce development looks at whether the above *'technological bridging'* can be achieved through the building procurement process; in particular, can real building projects be used as training grounds for labour development, thereby re-visiting the on-the-job training conceptions of vernacular practice, but realized within a more formal and industrially-organized framework.

This approach, however, impinges on two key strategies. Firstly, for building projects to be used as training opportunities without compromising their productivity, technological systems with latitude for errors and non-optimal application must be employed - i.e., they must be inherently *'robust'* as opposed to precise and therefore more *'sensitive'*. To this end, it is considered advisable to recognize that technological contamination and compromise can increase the rate of participation of the labour force to their own progressive training. What is proposed, in other words, is the definition of a broad technological framework at industry level that is both flexible and adaptable, and can therefore be used to expand the options available within any given project, helping the

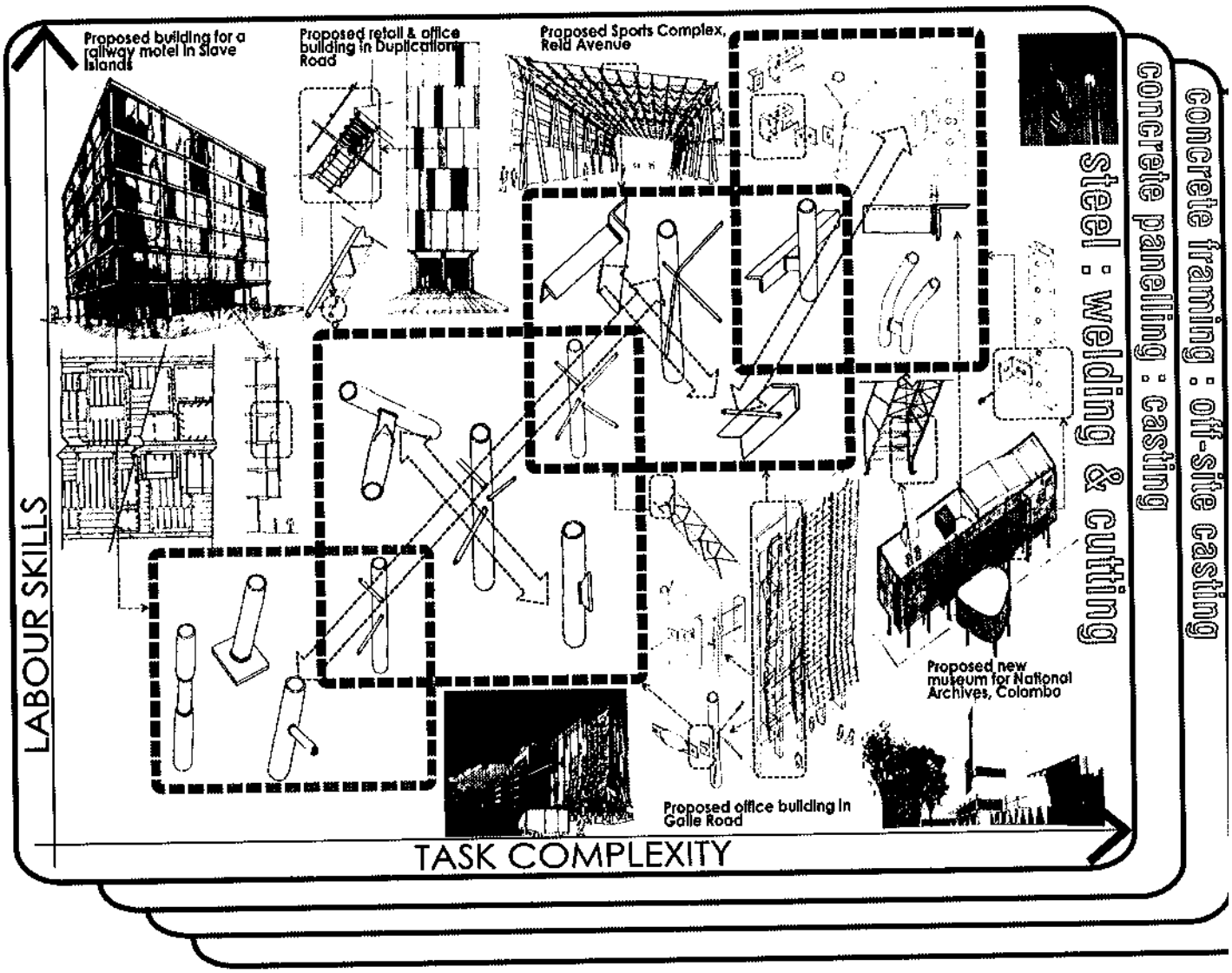


Figure 1: Cross-industrial labour up-skilling strategy for steel welding and cutting skills

latter perform as training grounds.

Secondly, the proposed training interventions should target specific skills necessary for workers to overcome the socio-technical *'barriers'* between insular construction markets. In particular, to help workers travelling from one construction market to another, the particular up-skilling applications should correspond to an incremental, cross-market knowledge-building platform. I shall explain this further by referring to a series of ideal-typical design projects undertaken in Colombo, Sri Lanka. These projects were set in construction markets of different economic and technical complexities, so that a scalable intervention of proposed training opportunities – or *'socio-technical bridges'* - can be realized. The graph in Figure 1 illustrates the results of the above process with respect to the use of steel welding applications for training tasks.

The graph thus represents a social matrix where the skills and technical complexities built into a series of steel welding joints is epitomized in a scalable paradigm. Incidentally, all these welding joints are incorporated into building systems proposed for real building projects, thus denoting a possible

knowledge-building path where one could move from one project to another – and therefore, from one construction market to another - by using the welding systems as opportunities for incremental knowledge building. For example, one of the jointing systems considered for the lower end of the technical ladder focuses on welding a steel reinforcement bar to a steel tube using a 'tee' joint. Consequently, a façade screening system using the above welding joint is proposed for a motel building, thereby projecting the facade building process as a training opportunity. Then, in the higher up of the technical ladder – in the third socio-technical pocket to be precise - a joint that uses the same materials but welds four re-bars to a steel tube is conceived for a vertical truss that holds self-moving, sun-shading panels of a commercial building. In between these two joints, however, a series of other jointing systems have been proposed to work as *'technical bridges'*, so that the welder who works in the motel project can use the intermediate systems to acquire the necessary skills to move into the higher construction market and perform the joint for the commercial building.

Planning for on-site labour training: Strategic interventions to the building design process

Designing particular building systems to incorporate training interventions, however, requires strategic planning at broader conceptual level. In particular, specific formal and technological decisions must be taken at the building design stage, so that the subsequent skill building tasks can be assimilated to the building project without subjecting the latter to a failure chain.

A proposition put forward by this paper argues that this process of delineating the information required to set up the labour-training workshops must be organized under three reciprocal stages (Figure 2). In the first step, the *'physical outcomes'* of the targeted building systems will be determined by acknowledging possible workmanship mistakes that may take place during the training interventions; crucial to this process is the definition of adequate tolerance levels to the building system. The second phase involves the task of identifying the *'factors of production'* – physical, cultural and material – that are necessary to set up the subsequent training opportunities. The final stage explicitly outlines the fabrication *'process'* that must be followed to erect the particular building system, thereby setting in motion the skill-building tasks.

These three design stages, in-fact, confirm to three key technical attributes that must be in place for a successful application of the proposed labour-training strategy. Firstly, the building design should incorporate technological applications that offer training opportunities to build targeted skills to a given labour group. Secondly, physical and cultural conditions necessary for the implementation of training tasks must be addressed during the initial project conception. In that respect, conditions such as the nature and extent of the training program, the physical site where the training task is to be performed, the minimum working module required to build the specific skills, the minimum work gang needed to

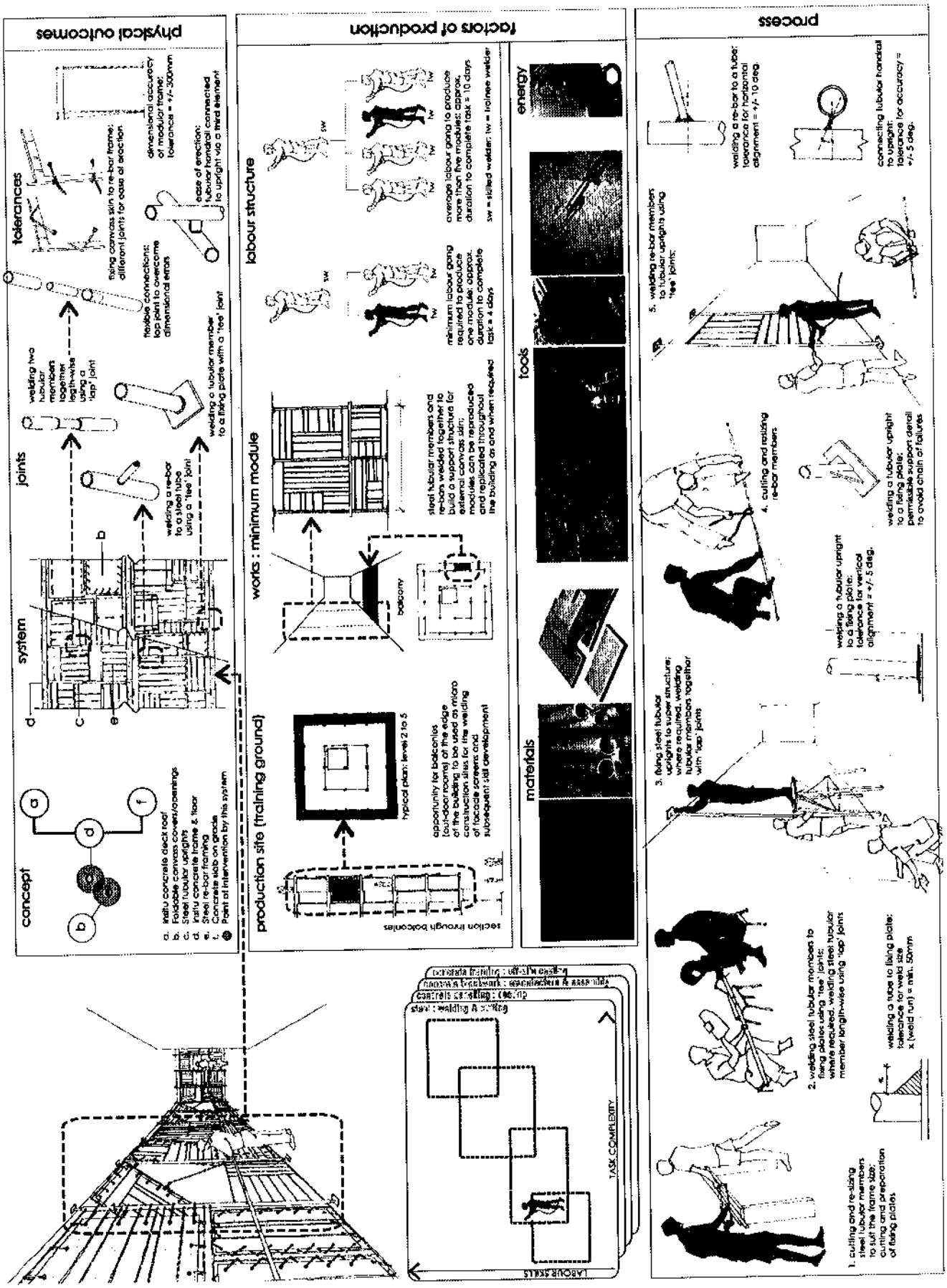


Figure 2: The three reciprocal stages of 'training-focused' building system design.
This particular example details a façade screening system proposed for a motel building in Colombo. The façade skin will be fixed to the motel balconies so that the latter can be used for outdoor lodging; during the construction phase, the balconies, in-turn, could be used as micro-construction sites, thus averting the need for additional capital input in terms of space and resources required for the fabrication and training process.

carryout the up-skilling tasks, etc., are all ought to be dealt with at the building design stage. Thirdly, the building design should be conceived in such a way that the overall outcome of the project is not compromised due to the on-site training interventions. In other words, workmanship errors that may transpire during the skill-building tasks should not lead to a chain of failures in the performance of the final product, neither formally nor environmentally or mechanically. Accordingly, the third stage is conceived to bring together the information developed at the previous two stages by building further tolerances, and delineating a fabrication process that can be executed well by unskilled labour following a modest up-skilling process.

Conclusions: Labour policy-making capacity in architectural design

By proposing such an organic knowledge-building platform, I argue that architectural design in general and real building projects in particular could constitute the intellectual and physical instruments through which labour development opportunities can be conceptualized, determined, and applied. The success of this framework, however, impinges in its ability to build organic links between various parties of the construction process by advocating of partnering and restructuring the networks of clients, design professionals, contractors, manufacturers, policy-makers, legislating authorities and consultant institutions. It, therefore, requires an institutional understanding and support of the framework in place.

In particular, governments can encourage this process through changes to their procurement regulations; clauses, for example, can be introduced at the tendering stage where only the actors who are willing to facilitate labour training are invited to bid for public works. Alternatively, tax and other economic incentives can be introduced to lure construction companies, clients, and professionals to facilitate the proposed labour-training activities through their own building projects. The authorities can also build incentives for workers to participate in their own progressing training by recognizing '*on-the-job*' training as equivalent to suitable levels of formal education, and setting up appropriate grading structures to distinguish their qualifications in the job market.

The bottom line, though, is that architects must be the centre of gravity in this process because, not only that training tasks need to be planned, but the consequent possibility for workmanship errors has to be tolerated within the building design. What is crucial for such a depiction of architect's role is the function of '*design*' in building production. In particular, building design ought to be thought as a problem-solving exercise, aimed at servicing the production process by intervening - physically and intellectually – in its different tasks and operations, including the design of '*training*' tasks. This requires building systems to be designed without the need for care and precision in the making, and to ensure that the clarity of performance does not impinge exclusively on labour skills. Also necessary is a change in attitude and intent on the part of the

architectural profession; rather than using design to create far more segregated niche markets - as is the case with the current interpretation of *'vernacular'* within the *'regionalist'* debate - architects must find new ways to advance the society and expand people's access to better spatial and cultural solutions.

References

Alexander, C 1979, *The Timeless Way of Building*, Oxford University Press, Oxford.

Brawn, M 2000, 'vernacular', *The New Fontana Dictionary of Modern Thought*, ed. Bullock, A & Trombley, S, Harper Collins Publishers, London.

Groak, S 2001, *The Idea of Building*, E & FN Spon, New York.

Lewcock R, Sansoni B & Senanayake, L 1998, *The architecture of an island: The living legacy of Sri Lanka*, Barefoot, Colombo.

Oberai, L 1993, *Population growth, employment, and poverty in Third-World mega-cities: Analytical and policy issues*, St. Martin's Press, New York.

Pathiraja M & Tombesi P 2009, 'Towards a more robust technology? Capacity building in post-tsunami Sri Lanka', *The International Journal of Disaster Prevention and Management*, Emerald Group Publishing Ltd, Bingley, UK, vol. 18(1), pp. 55-65.

Porphyrios, D 1982, *On the Methodology of Architectural History*, St Martins Press, New York.

Tzonis, A, Lefaivre, L & Stagno, B 2001, *Tropical architecture: Critical regionalism in the age of globalization*, John Wiley, New York.

EGYPT'S VERNACULAR ARCHITECTURE, FROM RURAL SETTLEMENT TO EXOTIC RESORTS

Mamdouh Mohamed Sakr

Abstract

For millennia, the Nubians of Upper Egypt faced harsh climatic conditions and scarcity of building materials. Yet they succeeded in building their shelters by using mud bricks to build thick walls, arches, domes and vaults. Nubian vernacular architecture, with its aesthetics and functionality was not discovered and appreciated until the late Egyptian Architect Hassan Fathy had started to study their settlements, architectural elements and building techniques in 1946. Since then Fathy has incorporated the traditional mud brick vaults and domes in his designs. His work is considered to be a revival in Traditional Architecture, and he became known for his theory of "Construction for the poor".

Unfortunately most of his theories were neglected, and what attracted a number of architects was the use of traditional architectural elements. This led to the emergence of what can be called "Hassan Fathy Style", a style that has been applied tremendously in the past three decades to create luxurious resorts on the Red Sea shores. Such appropriation was encouraged by investors and developers to create an attractive and exotic built environment, one that fulfills the dreams of tourists who come to the region to enjoy the sea, sun plus an extra piece of cultural heritage.

The aim of this paper is to trace the evolution and revival of a type of Egyptian Vernacular architecture, and how it is transplanted in a new environmental, cultural and social context. The failure or success of this trend needs to be assessed, as it can either be a step on creating Neo vernacular architecture or just an abuse of Egypt's cultural and architectural heritage.

Keywords: *Vernacular Architecture, Hassan Fathi, Egypt, Tourism*

river, and sand and stone from nearby quarries (el Hakim 1993, 38).
The vault and dome construction is more economical than using reinforced concrete; for example, roofing a room measuring 3m X 4m with a vault would cost 1/7th of the cost of a flat reinforced concrete roof. More importantly the vaults create far more beautiful and spacious spaces. This style of construction represented the cultural identity of the Nubians in contrast to the people of the North, and was the symbol of their artistic heritage.

The Rediscovery of an abandoned Building Technique

"If you had seen some of the works of these Nubians when they were building for themselves, you could not have failed to appreciate at least some of the beauty of what they have made....Today, everything is evaluated merely in terms of its material cost. There seems to be no place for art, no place for creativity"

Hassan Fathy

In Architecture for the Poor, Fathy wrote, "I suddenly felt terribly responsible. Nothing had been done out of consideration for the human beings who spent their lives there (countryside); we had been content to live in ignorance of the peasant's sickening misery. I decided I must do something" (Fathy 1989,4). Thus he began his quest for a means of rebuilding communities that would allow people to live with self-respect despite their economic status. He never turned away from this goal, and the poor became his constant preoccupation. As Fathy realized that people . who possess no cash can hardly become an architect's clients in the usual sense, and that they cannot be simply integrated on command into a cash economy, he set to work devising techniques of producing low-cost, energy-efficient houses. It was impossible to use concrete, as it required skilled labor, expensive equipment, and industrial materials produced abroad, all of these aspects put it out of reach of the budget of the Egyptian peasant. Concrete has another negative aspect, as in hot climates it traps and holds high temperatures unbearably, exactly the opposite of traditional earthen interiors, which remain cool during the day and release warmth at night (Swan 1999, 22). Fathy's solution was to turn to sun-dried bricks made of mud and reinforced with straw. In the early 1940's, he began to design dwellings that demonstrated an unprecedented degree of harmony with the natural environment, climate and local culture, and the spiritual traditions of Islam. With inspiration from the soil of Egypt, he aimed to help the poor build for themselves. Yet roofing remained a problem, the peasants could afford neither wood nor corrugated metal for roofs, nor could they even buy the wood needed to make forms to shape vaulted adobe roofs. The only economically sensible solution was to build adobe vaulting without wooden forms, which were used in Nubia to build ordinary houses, tombs and even royal buildings. Fathy feared that the secret had been lost, but in 1941, in the Nubian village of Abu al-Riche, he found village masons building catenary vaults of mud brick that could measure two stories high, up to three meters wide and of any desired length, without forms. The technique,

Figure 5: New Gourna Market

Figure 6: Public Square in New Gourna

he was exhilarated to learn, was simple enough to teach to any willing person (ibid).

Nubian vernacular architecture opened up a whole new world of possibilities for Fathy. Once convinced of the long history, durability and cultural applicability of mud brick vaults and domes, as well as their low cost and environmental advantages, adobe became his technological passion. Not only because of the adobe's durability over millennia, but also because of its thermal properties: In many desert climates it maintains comfortable temperatures within a range of three to four degrees centigrade over a 24-hour cycle. Furthermore, it is plentiful: Approximately one-third of the world's people already live in houses made of earth. Finally, the flexibility of a material for which right angles and straight lines are not always essential nourishes architectural creativity.

Accordingly, it can be stated that Fathy rediscovered existing architecture in Nubian villages, where he found aesthetically pleasing structures that also had great functional value in hot, dry weather. These forms were not used in the Nile valley, where the flat roofs are the norm, but he succeeded in introducing these structures to other regions in Egypt. The following images show two of Fathy's most important projects regarding the rehabilitation of the rural communities: (New Gourna village in Upper Egypt and Bariz in the Western Desert Oasis)

"Hassan Fathy's" Style and the Tourism Boom

According to Hassan Uddin Khan "Fathy tried to relate processes of building to culture, place, and milieu, but what happens as time goes on is that gradually there is a kind of deterioration, as forms and symbols begin to be used with less and less

Figure 7: Bariz Market

Figure 8: A detail of the market's arcade

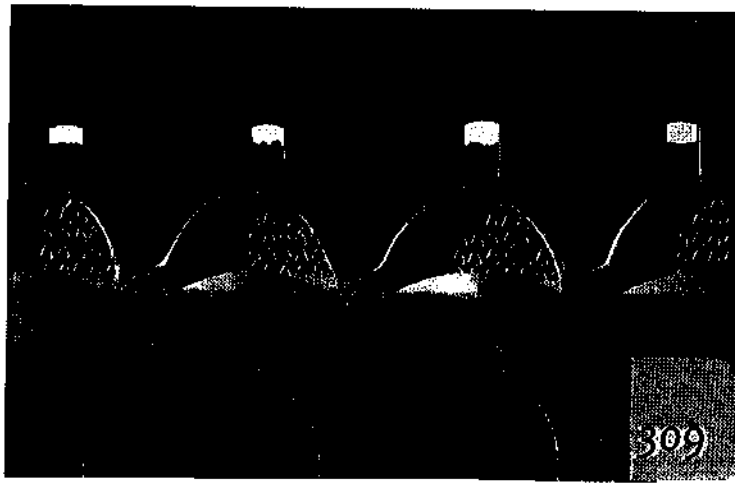


Figure 12: An Overview of el Gouna Golf Resort villas

waterfront context in an elegant manner". The resort's website states that: "The El Gouna Golf Resort is a stylish Nubian oasis of serenity and beauty within one of Egypt's most attractive holiday destination. A sensational experience complimented by stunning architecture, breathtaking landscapes, sparkling lagoons and a stay that grants pure tranquility and joy"..... "Welcome to your very own fairy-tale hotel designed by world famous architect Michael Graves. An inviting, magical mix of Arabic and Egypt's Nubian styles...."

These two examples are considered among the most successful resorts in the Red Sea coast. Yet it is obvious that el Dahan and Farid had tried genuinely to develop Fathy's architectural style and to adapt it to the current economic realities and to the clients' aspirations. On the other hand, Graves work could be easily recognized as an Orientalist's piece of art, where he used arches, domes and vaults differing in color and scale, in a haphazard way to create an exotic location where elements of vernacular architecture are abused as mere decorating shapes, lacking any authenticity. The difference between the two examples is obvious, yet there are numerous other resorts that are trying to find its place in the spheres of authenticity and exoticism.

Concluding Remarks

Suha Ozken eloquently summarized Fathy's journey and career, " Fathy's priority had been to improve the living conditions of the poor by using appropriate architecture, but the outcomes of his endeavors led him instead to the design of exquisite stone masonry villas for the well-to- do intelligentsia of Cairo. Cynics, envious of Fathy's international reputation, voiced this contradictions with slogans such

Figure 13: A cluster of el Gouna resort

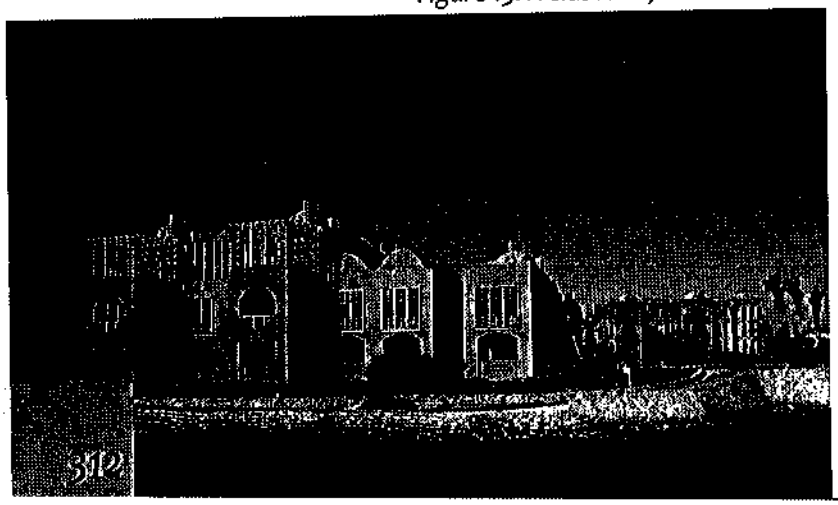
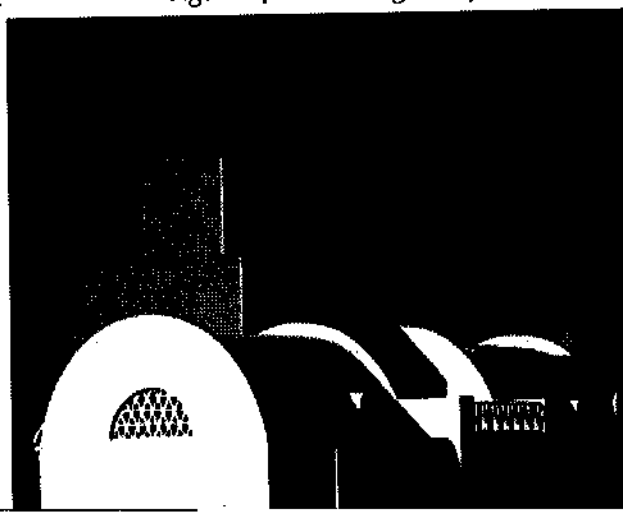


Figure 14: Villas designed by Graves



as:" He is writing about the poor and building for the rich". However, they deliberately ignored Fathy's underlying belief that if the leaders of Egyptian society would appropriate and make good use of his architecture for their high aspirations and lifestyles, the underprivileged would follow suit" (Ozken 2006, 105). However, what had started - almost sixty years ago- as a revival of a type of Egyptian Vernacular architecture has been reduced and degraded – in most cases- to an exotic type of architecture that appeals to tourists and investors.

In fact, Fathy transplanted some of the vernacular architectural elements in a new environmental, cultural and social context, creating a type of what can be called "Neo vernacular architecture". But unfortunately some of the architects who claim a strong intellectual and architectural affinity with him are merely copying shapes, and the spread of the distorted replicas of " Hassan Fathy's Style" buildings is a striking example of how Egypt's cultural and architectural heritage could be turned into kitsch. In order to be fair, we must wait till the Red Sea resort architecture is more mature and re-examine it. The numerous resorts that are being built are depending on the success of few examples that adopted this style. Their popularity is creating a new architectural trend, and as in any trend, there are genuine and fake designs. However the sustainability of these projects, and how successful will they be in responding to the emerging and ever changing environmental, economic and social needs will give this emerging style the needed credibility.

Bibliography

Asquith, Lindsay, ed. (2006) Vernacular Architecture in the Twenty-First Century, Theory, Education and Practice, London.

El- Hakim, Omar (1993), Nubian Architecture, The Egyptian Vernacular Experience, Cairo.

Fathy, Hassan (1989), Gourna : A Tale of Two Villages, Cairo.

Fathy, Hassan (2000), Architecture for the Poor: An Experiment in Rural Egypt, Cairo.

Khan, Hassan, (1999), The legacy of Hassan Fathi, *Saudi Aramco, Vol 50, N4*, Texas

Oliver, Paul (2003). Dwellings, The Vernacular House World Wide, London.

Ozkan, Suha (2006). Traditionalism and Vernacular Architecture. In Lindsay Asquith & Marcel Vellinga (ed). Vernacular Architecture in the Twenty- First Century: Theory, Education and Practice. London.

Pich-Aguilera, Felipe. (1989) Hassan Fathy: Beyond the Nile, *MIMAR, Vol 33*, London

Salama, Ashraf (1999). "Contemporary Architecture of Egypt: Reflections on Architecture and Urbanism of the Nineties." Paper presented at the Regional Seminar of Architecture Reintroduced: New Projects in Societies in Change, Beirut, Lebanon, November 1999.

Siddiqui, Yasmeen (2000) Through a master's pupils: Four projects by disciples of Hassan Fathy. *Medina Magazine*, Issue 15, Cairo.

Steele, James (1988), Hassan Fathy, London.

Steele, James (1997), An Architecture for People: The Complete Works of Hassan Fathy , Cairo.

Swan, Simone (1999), Elegant Solutions, *Saudi Aramco, Vol 50, N4*, Texas

www.elgouna.com

www.michaelgraves.com

www.rdsf.com

THE GRAND AND THE LITTLE TRADITION: TRACING THE LINKS OF TWO VERNACULAR BUILDING TYPES OF SRI LANKA

D.P.Chandrasekara

Abstract

It is accepted that there is a strong link between the vernacular architecture and the grand architecture traditions. The relationship between the two is studied and analyzed in different ways.

The present day architecture/architects often acknowledge the influence of vernacular on the contemporary building designs; the "Little tradition" guiding the "Grand".

On the other hand we see the inspiration of grand architecture paving the path for the emergence of unique vernacular built forms.

This paper will examine the evolution of two significant vernacular building types of Sri Lanka; "Stupa houses" and "Image houses on Stone pillars" and their linkages to built forms of grand architecture. The relationship would be explained with reference to the basic ingredients of architecture; "function", "technology" and "aesthetics".

The Stupa houses of the Kandyan period (15th to 18th century) has a strong connection with the classical architecture of "Watadage buildings" constructed during 7th to 11th century. The former has a simplified the built form avoiding the circular plan form and associated intricate construction technology.

The image houses on stone pillars are considered as one of the finest examples of Sri Lankan vernacular architecture. The technology and aesthetics of the building has a strong connection with the two tooth relic shrines at Polonnaruwa. The latter belong to the grand style. The both building types have adopted the raised floor construction for different reasons. It protected the murals and other elements of "image houses on stone pillars" from rising dampness & insect attacks. In the case of tooth relic shrines the approach enhanced the significance of the main shrine.

The paper would also attempt to understand the relationship of the architecture of the "Stupa houses" and "Image houses on Stone pillars" with the buildings belong to the folk architectural tradition of the island.

Keywords: *Stupa houses, Image houses, Grand tradition, Little tradition*

It is accepted that a strong link exists between the "Grand" and the "Little" or the vernacular traditions. This applies to the field of architecture as well. The relationship between the two is studied and analyzed in different ways.

Redfeild (2008:209-210) explains the interactions between the Little and Grand traditions;

"The two traditions are interdependent. Great tradition and little tradition have long affected each other and continue to do so. Great epics have arisen out of elements of traditional tale telling by many people, and epics have returned again to the peasantry for modification and incorporation"

The present day architecture and architects often acknowledge the influence of vernacular on the contemporary building designs; the "Little" tradition guiding the "Grand".

For example, Geoffrey Bawa and Minnette De Silva have been considered as pioneers in searching and consolidating a distinctively contemporary Sri Lankan architectural style. The inspiration from the traditional vernacular architecture of the island is clearly evident in their designs and has been acknowledged by the both architects. (De Silva, 1998) and (Taylor,1995:13-17) . The regional architectural idiom of Geoffrey Bawa had direct links to the Kandyan period (15th to 18th century) vernacular and the colonial vernacular built forms and detailing. Minnette De Silva was particularly impressed by the Kandyan architecture and crafts attempted to make a fusion with the modernity.

The phenomenon of vernacular influencing the grand could be noticed in the works of other architects such as Hassan Fathy of Egypt and B.K. Doshi of India.(Musgrove, ed. 1992:1395 & 1490)

On the other hand we see the inspiration of grand architecture paving the path for the emergence of unique vernacular built forms. This paper will examine the evolution of two significant vernacular building types of Sri Lanka; " Stupa houses" and "Image houses on Stone pillars" and their linkages to the built forms of grand architecture. The relationship would be explained with reference to the basic ingredients of architecture; "function", "technology", and "aesthetics".

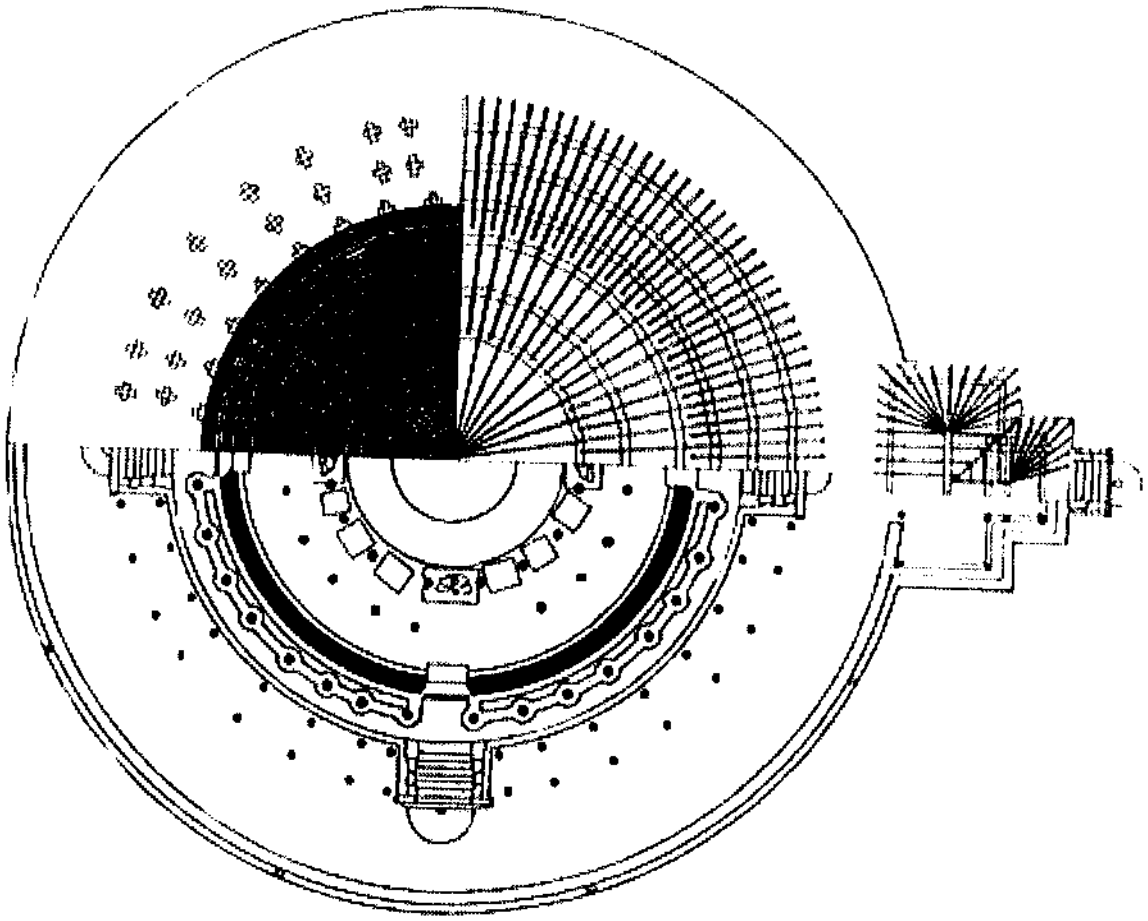
Background

Sri Lanka has a rich tradition of architecture from 3rd century BC mainly developed after the introduction of Buddhism. The stupas, image houses, other buildings of monasteries, palaces, council chambers of Anuradhapura (5th BC to 9th AD) and Polonnaruwa (9th to 12th AD) kingdoms and the 5th century palace complex at Sigiriya belong to the classical or the grand tradition. By the 15th century the capital was shifted to Kandy located in the central hilly region. The Kandyan kingdom was less prosperous and was constantly attacked by the colonials occupying the maritime provinces. Most of the buildings erected during the period are of the vernacular tradition except for the palace complex and the tooth relic shrine at the capital.

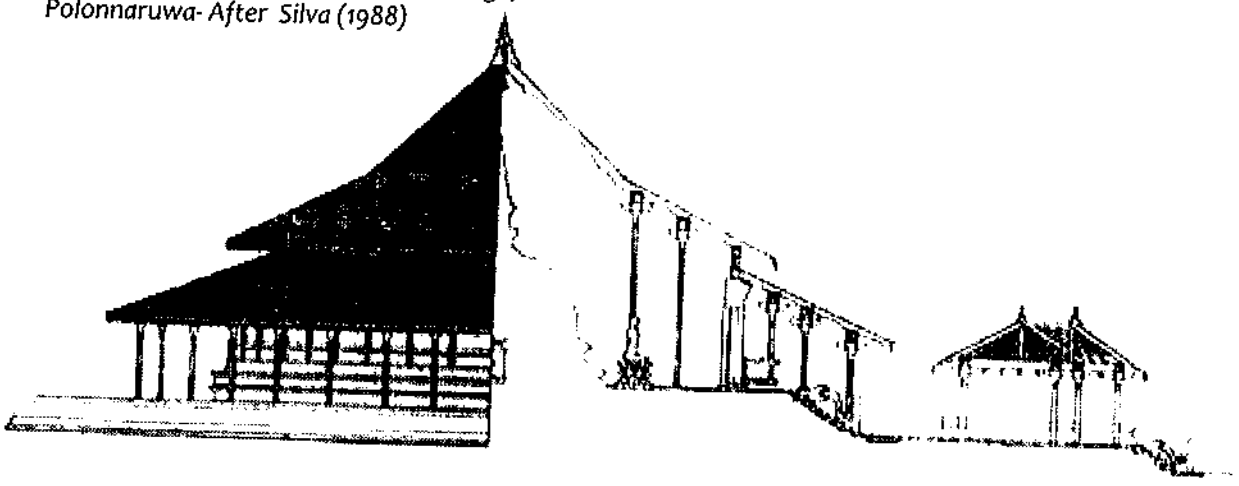
Stupa Houses

Stupa is the most important religious edifice for the Buddhist. It is solid burnt brick masonry structure generally of the domical shape with a cone on top. The bodily relics of the Lord Buddha are enshrined inside it. The stupas of Anuradhapura and Polnnaruwa periods are of gigantic size. For example Jetavana and Abhagiri stupas at Anuradhapura were 400 and 370 feet high respectively. (Musgrove, ed.1992:752) However the construction of smaller stupas protected by a roof also became popular during the periods of

Figure 1: Conjectured Roof plan- Watadageya- Polonnaruwa- After Silva (1988)

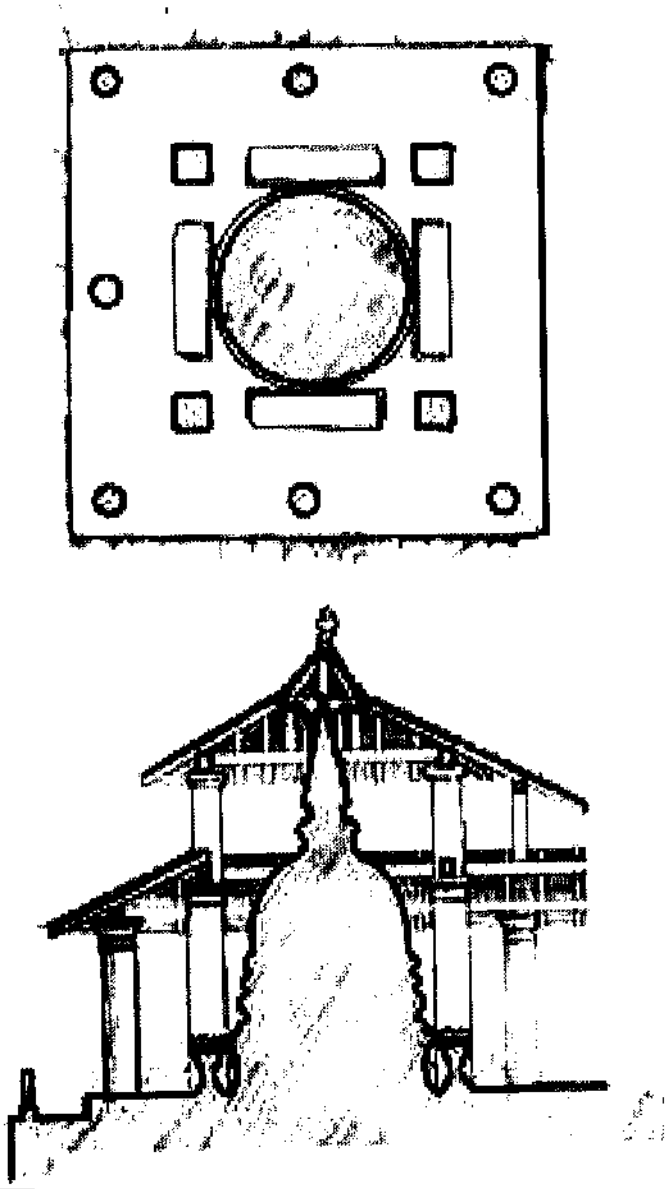


Conjectured Elevation/Section- Watadageya- Polonnaruwa- After Silva (1988)



Anuradhapuraand and Polonnaruwa. The buildings were called *"Watadages"* meaning circular relic houses.

There are more than 14 such examples found in different parts of the island. Lankarama & Thuparama at Anuradhapura, Mihintale, Madirigiriya, Polonnaruwa, Tiriyaya, Rajangana, Lahugala, Kaudualla, Kantarodai, Kandegedara, Devinuwara, Delft, Attanagalla are few such *watadages*. In none of these places the circular timber framed clay tiled roof survives now. The conjecture shows us the form of the roof supported on the stone columns and the brick wall.



The Stupa houses of the Kandyan period (called *kuludage*) although smaller in size had a strong connection with the classical architecture of *watadage* buildings constructed during earlier phase. There are around 20 such buildings *kuludage* buildings survive in Buddhist temples of the island. Unlike in the case of *watadages*, the roofs of these structures are still retained. The *kuludage* has a simplified rectangular or square plan form avoiding complicated construction technology connected with the circular *watadages*. *Kuludage* is an open pavilion type building often with a tiered roof. Both built forms avoided the central support due the positioning of stupa.

In terms of the function both buildings were erected to shelter the stupa which would have been painted in color. The watadage provided shelter to the devotees as well. The Kandyan period kuludages housed only the stupa and the worshippers had to stay outside.

The *watadage* was a shrine with entrance and exit doors. The devotees within the building were completely cut off from the external world due to the circular wall on the periphery. Such an interior would have created an appropriate atmosphere to carry out ritualistic activities or to do mediation having the stupa as the central object. The construction of the roof of *watadage* was a specialized task due to the large spans and the central hub. The joining of timber and the transfer of the roof thrust to the columns demand a perfect detailing .

The architecture of *kuludages* illustrates us that it is a evolutionary form of *watadage* buildings but of less grandeur.

Figure 2: Plan and Section of Stupa House at Kadigomuwa temple

The transformation from "Grand" to "Little" has taken place with the retention of only the core function, reduction of the scale of the stupa and thus the building and the change of plan from circular to square or rectangle.
Silva (1988:93) acknowledges the existence of similar *kuludages* in Tibet and Nepal but argues that development in Sri Lanka is independent.

"It is likely that small thupas with elaborate paintwork required shelters. These were evolved independently in Sri Lanka and in Tibet, to meet the local requirement. The watadage can be regarded as the fore runner of kuludage ,but the later growth represents a declining phase after the former ceased to be in vague after the twelfth century."

The designs of the *kuludage* buildings have variations. The shorter stupas had a basic type *kuludage* with single pitched hipped roof rested on four columns. The stupa houses at Ahugoda, Pangamuwa, Palapathwela are examples of this variety. The *kuludages* at Gadaladeniya and Deldeniya are covered with double pitched hipped roofs . The most interesting architectural form of *kuludages* is the buildings having roofs at two levels. The upper level roof was supported on four columns located closer to the stupa. The lower level roof provides adequate protection from the climatic forces and enhanced the aesthetics of the building. Such designs at Kadigomuwa, Kobbekaduwa, Dambadeniya, Gampola accommodate taller stupas with the additional height of the roof at the central part .

The tooth relic shrines of Polonnaruwa an the Image houses on stone pillars

The image houses on stone pillars are considered as one of the finest examples of Sri Lankan vernacular architecture. The technology and aesthetics of the building has a strong connection with the two tooth relic shrines at Polonnaruwa.
The shrines at Polonnaruwa named as "Hatadage" and Atadage" housed the sacred tooth relic of Lord Buddha. The shrines constructed by two kings, have the similar floor plan. They are of two storied. The ground floor was used as an image house and the upper level as the relic shrine. (Silva, 1988:243)
The sacred tooth of Lord Buddha was considered as the most important relic for the Buddhists of the island. It was always kept in special shrine located closer to the palace complex under the direct supervision and security of the King. The practice was followed during Anuradhapura, Polonnaruwa, Kote and Kandyan periods.
The super structures of these buildings do not exist now except for the stone columns and the brick walls. The floor and the beams of the upper level and the roof structure would have been made out of timber as in the case of other storied buildings of Anuradhapura and Polonnaruwa periods. The steep stairway provided the access to the first floor level. The remains at site and conjecture of the building communicate the imposing nature of the tooth relic shrine buildings at Polonnaruwa.
The image houses built on stone pillars (called *Tampitaviharas*) are a unique type of building developed during the Kandyan period. It's identity is created through the

constructional techniques adopted. The main structure of the building rests on several stone pillars avoiding any direct contact with the ground. The heights of the pillars are generally about three feet. The inner sanctum is located at upper level enclosed with clay walls and entered through a small single door. The walls coincide with the timber beams below. A narrow verandah runs right round the structure with a timber balustrade fixed in between the wooden columns.

More than 60 such image houses on stone

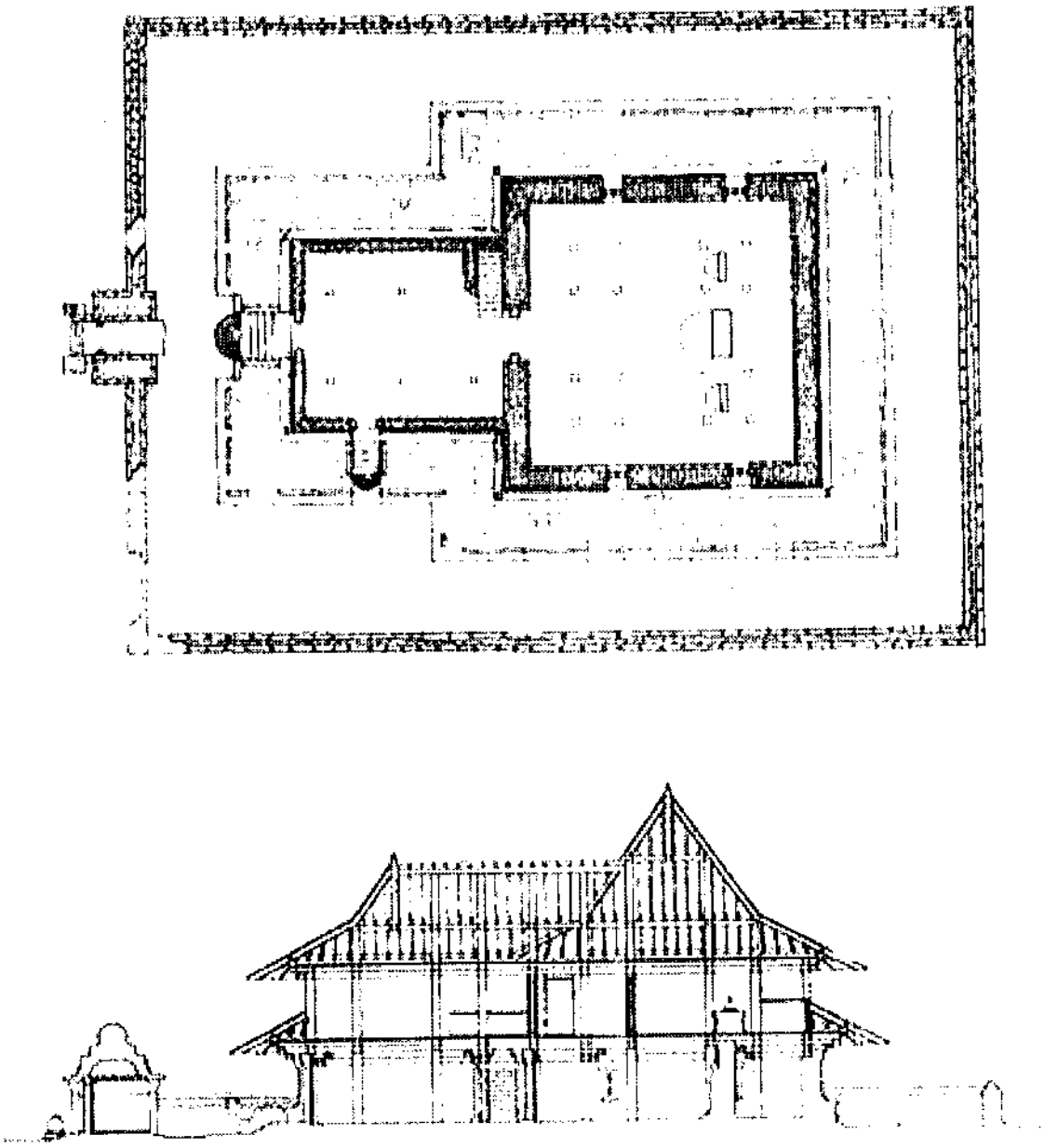


Figure 3: Plan and conjectured section of Hetadage Tooth relic shrine at Polonnaruwa- after Nagakawa (1992)

pillars are found in the village temples located mainly at Kandy and surrounding districts. These buildings are 150 to300 years old now. The building including the roof still remains with very little latter modifications or additions. The image of Buddha in sitting posture is kept directly opposite the entrance door . The inner surfaces of the walls are covered with mural paintings depicting the "Jatahaka" stories.(previous incarnations of Lord Buddha). The scale, proportions and the materials used makes the image houses on stone pillars a vernacular building type.

" Tampitaviharas are typically single storied buildings: the short stone pillars do not make the lower level high enough, both in visual terms and functional terms-to use for any ritual or residential purpose-in order to consider the image house a s two storied structure..... The construction methods and the materials used – timber, wattle and daub and minimum use of stone, as opposed to the extensive use of stone and brick in earlier periods display a direct application of popular tradition."

(Chandrasekara and Silva 2002:13)

Both building types; tooth relic shrines at Polonnaruwa and the image house on stone pillars have adopted the raised floor construction for different reasons. It protected the murals and other elements of the image houses on stone pillars from rising dampness & insect attacks. In the case of tooth relic shrines the approach enhanced the significance of the main shrine.

The evolution of Tooth relic shrine buildings to the image houses on stone pillars has taken place through an intermediate stage. The relic shrine at Dambadeniya period constructed during the 13th century is considered as an important link between the two building types. (Silva 1988 :244)

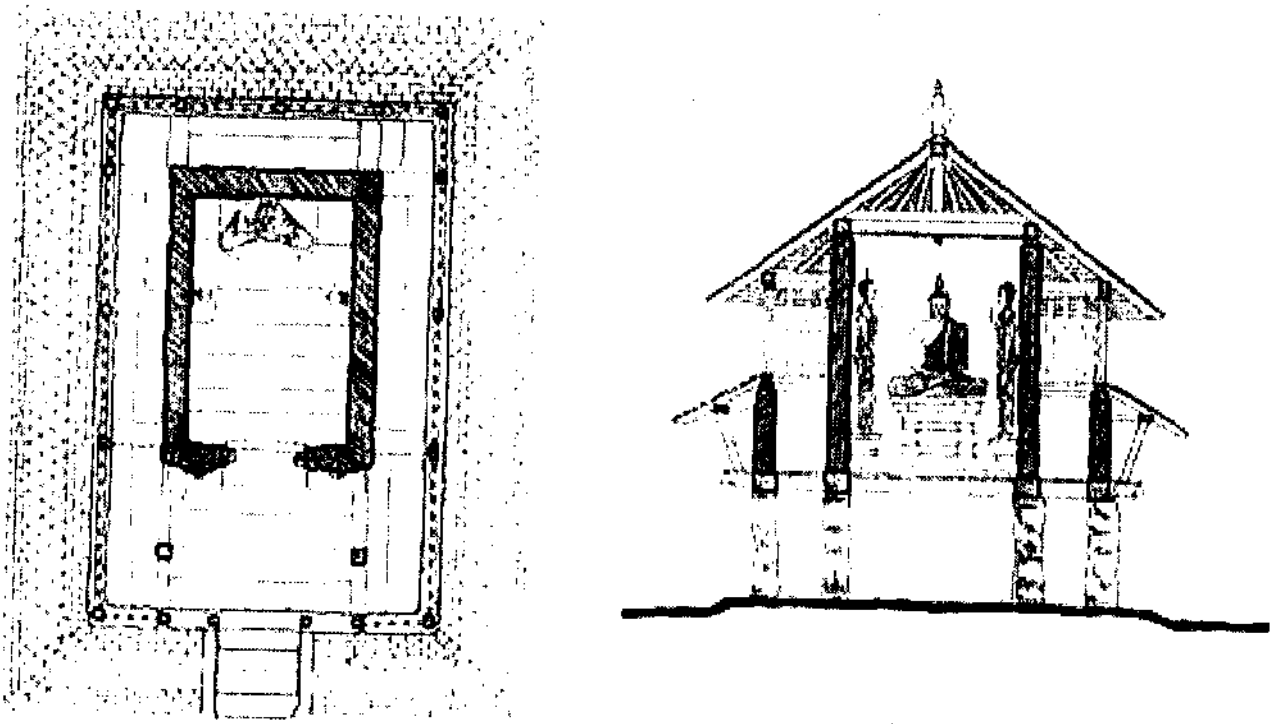


Figure 4: Plan and Section of image house on stone pillars at Hulugalla

Though smaller in scale the relic shrines at Dambadenitya resembles the architectural form of Polonnarwa tooth relic shrines. The image houses on stone pillars were developed when the main statue was shifted to upper level and the lower level of the building was left out without a specific function.

The image houses on stone pillars have maintained distinctively local character with the pitched clay tile roof as the most significant feature and the scale relating to the context of a village temple.

The paper illustrates the development of two Sri Lankan vernacular building types of little tradition influenced from architecture of grand tradition.

The first example of the stupa houses has retained the function but the built form has subjected modifications.

In the evolution of the grand architecture of the Polonnaruawa tooth relic shrines to the vernacular image houses on stone pillars, we could notice the continuation of the architectural language and the technology.

The case studies demonstrate the transition from grand to little could happen in different ways. It is could be the direct change of scale or the modification of the form through intermediate phases or evolution of the architecture responding to the core functional requirements.

	Function	Technology	Architectural language and aesthetics
"Watadage' stupa houses of the grand tradition	Provide shelter to the stupa and devotees	Complicated without a middle support for the roof and intricate detailing	Circular plan form
"Kuludage' stupa houses of the little tradition	Provide shelter to the stupa only	Simplified open pavilion	Square or Rectangular plan from
Tooth relic shries *at Polonnaruwa* of the grand tradition	Worship of the most important tooth relic of lord Buddha	Raised floor (two storied) to signify the tooth relic shrine	Square plan form with front projection
Image house on stone pillars houses of the little tradition	Worship of Statue of lord Buddha	Raised floor to provide protection from dampness and insect attacks	Square plan form with only basic elements

References

Chandrasekara,D.P. and Silva D.M.K.D (2002) *Architecture of Tampitaviharas in Sri Lanka*, Colombo

De Silva, Minnettte (1998) *Life and Work of an Asian Woman Architect*, Smart Media Productions,Colombo

Musgrove, John.(ed) (1992) *Sir Banister Fletcher's A History of Architecture* ,CBS Publishers , New Delhi

Nagakawa, Takeshi. (1990) *Ancient Architecture in Sri Lanka- Studies on Palnning and Restoration of Temple Architecture in the Late Anuradhapura and Polonnaruwa Period*, Tokohshi ,

Redfeild, Robert. (2008) *Social Anthropology*, Transaction Publishers, New Brunswick, New Jersey

Silva, Roland (1988) *Architecture of Early and Medieval Sri Lanka, A Study of the Thupa, Bodhimandala, Uposathagara and Patimaghara*, Durk:Krips Reppro Meppel.

Taylor, Brian Brace (1995) *Geoffrey Bawa*, Thames and Hudson

ARCHITECTURAL HERITAGE & URBAN IDENTITY BETWEEN NOSTALGIA & TRANSFORMATION IN URBAN BAHRAIN

Souheil El-Masri

Abstract

The rich architectural heritage of Bahrain has been subject to dilapidation and destruction as a result of rapid urbanisation and its complex physical, social and economic dimensions. The two major cities of Muharraq & Manama have been undergoing profound changes facing serious challenges and problems that are threatening whatever left of the fine organic traditional urban areas. Large scale developments, high-rise buildings, shopping centres and infrastructure expansions; coupled with political and economic changes; manifest these intricate processes of urban transformations. Remarkably enough, all these come at a time when globalization has dominated all aspects of life with its clichés, challenges and possible potentials. In such a complex situation, an important question could be asked of how urban identity could be sustained in fast-transforming cities?

The paper focuses on sustaining the urban identity of Manama and Muharraq that goes beyond the mere nostalgic romanticism to realistic futurism by employing a combination of observation and participation qualitative research methods. It aims to provide a holistic approach integrating between the various scenarios of restoration, new functional rehabilitation, in-fill and new development. Hence it examines not only the physical aspects but expands the discussion to a wide range of issues and their interrelations including appropriate land-use systems and building regulations, financial resources and incentives, education and heritage, urban and architectural practices, and stakeholders' involvement and institutional developments. The paper acknowledges that the approach should filter between short-term solutions and far-sighted strategies, between private interests and public good, between market efficiency and social welfare, between bottom up approaches and top down ones, between physical development and heritage protection and between large scale and small-scale developments. Based on this discussion, comprehensive policy measures are to be addressed focusing on the possibilities of turning the "wicked" challenges into "potential" opportunities

Key words: *Architectural Heritage, Urban Identity, Urban Transformation, Bahrain*

Introduction

In a fast urbanizing and globalizing world, the issue of city identity has become a matter of great concern. Alienation, animosity and visual pollution, typical characteristics of today many urban areas, have different and serious implications on humanity and environment. The confusion of our cities has become intolerable and requires careful assessments of conservation strategies as well as of 'modern' urban and architectural approaches - their invalidity and inefficiency. It is also becoming evident that the issue of urban identity should not be treated only as a mere stylistic and nostalgic matter. On the contrary, it should be integrated in the heart of the processes which shape, manage and finance urban developments.

Growing urban areas, especially in the Gulf including Bahrain, have become arenas of many contradictory forces associated with the growing of commercialism and consumption attitudes, architectural fashions and professional egoism, and many misconceptions regarding progress and modernization. These fake values, transferring cities into functional mechanism of material values, have overtaken the local genuine forces used to shape the traditional settlements. Therefore, many modern cities stand in isolation from its culture and, in many cases, functioning against the grains of the culture. This discontinuity with tradition is causing an identity crisis, disorienting people and dehumanizing cities of enormous social, economic, physical and environmental problems. Hahn & Simonis (1991:199) best describe these problems as following:

Cities have become a symbol for and a product of the careless treatment of scare and sensitive environmental goods. .... Cities have thus become a symbol for the neglect of organic, cultural traditions and the destruction of the identity of places. Respect of traditions and factors specific to certain places is, however, of highest importance for a symbiotic development of the human environment relationship. As individual characteristics are different so it should be with cities, with urban planning.

As cities becoming more complex and obscure, signs and exhibits grow larger as well as the strangeness feelings minimizing people's self-esteem and sense of potential and fostering attitudes of defence and defeatism. Identity becomes 'bizarreness of uniqueness' manifested in colour, texture, shape and location depending on visibility. It reflects different set of values from the traditional local ones; buildings and space are symbols for economic and political power, importance and status, achievement and wealth, ours and theirs, and finally poor and rich. The prerequisites are visibility and surprise; the creation of a distinct image in the observer's mind for capturing his attention. This goes to the extent of borrowing symbols and motifs from earlier periods or from other culture in order to legitimize a new social order.

Research Approach

The discussion of the recent developments in Bahrain is based on the method of observation and in some cases on participant observation supported by an extensive documentation of local newspapers, informal discussions and project leaflets. As research is the 'art of possible' (Patton, 1990: 13), the method should be seen within the context of limited research

and information on urban issues in Bahrain, and within the evolving situation which is still shaping up. To be part of this dynamic sometimes as an observer and another time as a participant provides insights into the setting. Also the author, as an outsider living in Bahrain since October 1994, has been able to observe these transformations with neutrality and for a considerably long period. The validity, reliability and insight generated from the method capitalise on the information richness and on the observational analytical capability rather than on statistical quantitative procedure. This qualitative approach goes beyond the numbers game and emphasises on depth versus breadth (Patton, 1990: 185).

Urban Developments of Muharraq & Manama

Bahrain spatial planning has been experiencing different stages and developments to respond to rapid urban growth, population increase and socio-economic changes. This has been associated with the establishment of different institutions entrusted in overseeing the design and implementation of urban planning policies and housing projects. More recently, there have been several ongoing processes; most importantly are the Ministry of Works & Housing Management Development Plan (2004) and Bahrain National Planning development Strategies (2006), to enhance urban planning system in Bahrain in response to physical, political and socio economic developments. Adoption of constitutional democratic monarchy, division of Bahrain into five municipalities, encouragement of the private investments and empowerment of women are just to name few. From traditional urban planning system, to modern and more recently to be influenced by global forces, the urban structure and form of both Muharraq and Manama have been undergoing four different stages experiencing rapid changes and transformations in their social, economic, environmental and physical structures (Table1).

Urban Structure: from Tradition to Modernity

Since the 60's, the accelerated urban growths have left many scars on the compact organic traditional areas in Muharraq and Manama. Modern building forms and urban grid systems, with no relation to the local culture and architectural heritage, developed under the increase influences of external forces; the pressure for modernization and rapid construction; and the inability to develop institutional frameworks and traditional architecture to keep pace with the needs of a growing and changing society. This has been articulated by Al Hathloul (2004-642) when describing:

Entering into the new Millennium, the Arabian Gulf Countries will be facing serious challenges due to fast population growth and escalating needs for urban infrastructure; housing and employment opportunities. As such, these countries must pursue a more holistic approach to urban planning and management as to enable them to deal with the macro urban issues and

Stages	Urban Characteristics	
Late 19th C. to 1930's	• Life depended on agriculture, fishing, pearling & trading • Community-oriented & family-driven despite involvement with world at large • Culture founded on Islamic principles hybridised with Middle-Eastern, Asian & African traits. • Slow & measured growth balanced between local & regional forces • Dense & organic urban fabric based on districts (*Farij*) system responded to cultural & natural requirements and reinforced community & territorial identity. • Courtyard house characterised by bent entrance to ensure privacy, flexible rooms' usage, & innovative ventilation techniques: courtyard, Badgir / Wind Tower, Waresh (Al-Oraifi, 1978; El-Masri, 2005a; Waly, 1990; Yarwood, 2002?).	**Form Follows Family**
From 1930's to 1960's	• Shift from agriculture & pearl diving based economy to oil based economy • Desire to keep pace with rest of the world, particularly West • Changes accommodated progressively as demands grew • Construction of extensive road network & extensions over reclaimed lands followed modern grid planning system leaving core of old core almost intact • Infra-structure provision in peripheries extended inwards to improve old stock • Massive foreign labour influx and introduction of 'modern' town planning supported by British colonial power, and the pursuit of modernisation process • Gradual destruction of traditional areas encouraged by: • Desertion of locals to modern housing areas & Invasion foreign labour (cheap accommodation) • Uncoordinated building activities & lack of comprehensive conservation strategy • Misunderstanding the value of traditional areas as opposed of modern housing projects (Mandeel 1992: 91-108).	**Form Follows Function**
From 1960's to 1990's	• Urban changes accelerated under pressure for modernisation & population growth. • Massive government projects: new cities (Isa Town 1963 & Hamad Town 1982), urban renewal & rural projects implemented in prosperous economic condition, based on western model of planning • Formation of many public urban institutions • Private initiatives limited to private housing in the form of villas and residential compounds to cater for increasing number of expatriate, and the need for office buildings (Diplomatic Area neighbouring the old core of Manama) • Further deterioration of traditional areas	
Since 1990's	• Urban developments characterised by slow start from 1990 to 2000, accelerated in 2000 -2006, to be intensified between 2006 -2008, and to strongly being affected by late 2008 economic crisis. • Continuous government involvement in urban projects in addition to emergence of real estate & land market with increase globalisation phenomenon • Neighbouring states moving on the fast tract, Bahrain certainly does not want to be left behind" Goveas (2006). • Massive urban developments: Diyar Al Muharraq & Amwaj Islands in Muharraq; Financial Harbour, Reef Island, Lulu Towers, City Center, Manama Lagoon, Bahrain Bay in Manama; and Bahrain International Circuit, Durrat Al-Bahrain, Al Areen Desert Resort and Al Salam Resort in the rest of Bahrain are visible signs and symbols of a massive architectural / urban production in the age of globalisation. • Recent economic crisis (late 2008) affected implementation of many iconic projects in the Gulf including Bahrain. Cancelling, resizing, phasing or re-evaluating is common trend nowadays.	**Form Follows Finance / Fashion**

Table 1: Urban Development in Bahrain: Stages & Characteristics
Source: El Masri Al Raouf (2006)

the bottlenecks that will impede their future development. Among these bottlenecks are the inefficiency and non-transparency of their land markets; shortage of affordable housing; lack of effective institutional coordination among agencies concerned with the delivery of services as well as agencies responsible for the protection of the urban environment which will be threatened by city rapid growth.

In deed, these are dilemmas shared by many cities in the Gulf (Hamouche 2004, Mahgoub 2004, Al Biss & Al Salafi, 2004). Foreign experts and labour, lack of local expertise and comprehensive conservation strategy, and misunderstanding of the potential and value of traditional settlements led to rapid deterioration or disappearance of traditional buildings and settlements.

Muharraq and Manama architectural heritage does not only share many of the physical characteristics of the Arab Islamic cities but also suffers from the same problems and pressures caused by rapid urbanization. Since the second half of the 20th Century in the Arab region, modern foreign planning and building systems had rapidly replaced the traditional local processes. Desire for modernization, pressure for rapid building, lack of institutional frameworks and expertise, and the recent globalization phenomenon are, to name few, some of the reasons. The traditional and modern processes are of opposite ways with no relations: organic dynamic pattern versus grid rigid system; local materials technologies and skills versus modern imported ones; mix uses of functions versus zoning and separation, social/cultural values versus professionals' preferences and building regulations (Table 2).

TRADITIONAL	MODERN
Process	
Evolving guided by adjustments & innovations (Trials & Errors)	Spontaneous follows styles & fashions
Philosophy	
Harmonious living within society & with nature Respect cultural conditions	Growth, modernisation, progress Influenced by international conditions
Decision	
Local influenced by cultural, social, economic, natural conditions & available materials & skills	Fluctuating between interest groups & influenced by global facto media, trade, exchange of skills, ideas & fashions
Morphology/ Fabric	
Organic, hierarchical, & dynamic Mix use	Rigid of grid system Zoning, land use & building regulations
Identity/Character	
Collective allowing for individual personalization (variations within overall unity) Expression of shared values & common patterns of life Strong community and territorial identity	Individual based on images (rich/poor; modern/tradition) & clie & architect preferences Expression of regulations, status & modernisation No sense of community
Visual Characteristic	
Subtle, harmonious, understandable	Confusing, bizarre, foreign
Effects	
Reinforce orientation, attachment, belonging and sense of community	Loss of orientation, creativeness, appreciation of nature and sen of community

Table 2: Comparison between Traditional & Modern Built Environment
Source: El-Masri, 2007

Urban Growth: Salient Features & Constraints

Bahrain urban growth, including Muharraq and Manama, has been the product of their times and the relationship between society and space. Bahrain urban growths also exhibits many similarities of the urbanisation trends in the Arab Region in general and in the Gulf Region in particular, despite the fact that these countries display striking variations in their patterns and indexes of urbanization; in their capitals agglomerations and overall densities; and in their economic bases and natural resources (Khalaf 1983). These salient features & constraints could be summarised (Table 3).

The rapid urban growth and the recent massive architectural production have not been matched with comprehensive urban planning and urban management system, despite the many positive developments and initiatives. What has often unfolded is a process of 'initiations' of sites and localities for development and urbanisation on the basis of single or multiple projects. These are then followed by 'incremental developments' that emerge and grow around the locations transforming them to significant places although there are few exceptions (Al Khalaf, 2007). Unlike the process of following a carefully orchestrated master plan; a planning process that has been called into question, the ever evolving planning practice has given way to the social, political and financial pressures of the society in which the planners follow, rather than lead, and help shape, rather than give shape to the spaces and forms of urban centres.

This approach, which may be called 'Mushrooming', in fact has transformed a number of significant locations to evolve as hives of activities and places that are likely to generate and survive on their own with marginal linkages and interactions with other locations. A number of such locations can be recognised such as, Seef Mall, Bahrain Mall, Dana Mall, Manama City Center, and the Saar enclave. For sometime, Bahrain

Salient Features	Constraints
Rapid Urban Growth	– High percentage of urban population compared to total population – High population growth & percentage of foreigners – Increase demand for infrastructure, housing & land reclamation – Need for institutional capacity building & comprehensive urban strategies – Need for decentralised urban management and holistic regional planning
Need for Economic Development	– Decrease dependency on Oil & need for economy diversification – Fragmented industrial structure (except Aluminium) – Need to adapt to technological and managerial advancements – Need for job provision
Diminishing Identity of Built Environment	– Rapid construction of modern buildings & need for comprehensive conservation strategy – Rapid socio-economic changes & reliance on foreign planners and architects – Misunderstanding of traditional architecture & inability to develop its potentials – Deterioration of old areas, Disfigurement of urban Structure & lack of infrastructure – Depopulation of local communities

Table 3: General Features and Constraints of the Urban Scene in Bahrain
Source: El-Masri 1998

seemed like having acquired appropriate modern centres of consumption sufficient to keep its populace reasonably well engrossed in the western modernism while retaining strong attachments to Bahraini culture.

Architecture in the Age of Hyper-Production

In the Gulf, the accelerated wave of development is project-driven and has snowballed by means of a number of high profile, iconic buildings and building projects. In addition, a number of other signature-developments are in the pipeline to be designed by the world's most leading architects in order to infuse symbols similar to the already reputed, currently known projects spearheading the present phase (*Form Follows Fashion*). From the Palm to the World; from the tallest building to the cloud; and from the twisted, the up-side, the rotated to the dancing towers, the approach emphasis on icon-ism and visibility. The massive architectural production has been encouraged by increase in oil prices; search for feasible investments after the 9/11; availability of infinite supply of cheap labour, mainly from Asia; ability to provide an atmosphere of political stability and security; and ability to introduce sophisticated financial and managerial mechanisms (Kirchner & Rab, 2007: 18-22).

The Gulf has become an international architectural lab for projects never experienced before in terms of scale, idea and complexity. Architecture in the age of "*hyper-production*" is characterised by several trends/fashions. In many of the projects, the Star / International Architect is a pre-requisite to produce eye-catching buildings and to promote the idea of uniqueness, iconic and landmark. This is something been repeatedly refer to as "*wow factor*". Complementing this phenomenon is the growing field for marketing and branding of the projects; attractive brochures booklets and CDs, containing carefully phrased slogans and glossy highly rendered images, are widely used for promotion and marketing especially in the ever-increasing number of property exhibitions in the Gulf. It is known that demands for 3Ds rendered images, physical models, and printing publicity material escalate for about three month before property exhibition. However, this image driven approach has led Ivy, R. (2009) to question: what has happened to drawing?

The range of techniques and the craft present in the sheets of handwork remind us what we have lost in our transition to the electronic. The analogy lies in the piano's transition to the electronic keyboard, where technical ability has thrived but dynamics has disappeared along the way. Rather than the subtle variations in tone, or the slight tremolo and the staccato attack, the nuance that lies in variation of technique, pianists found little but loud and soft in the new technology, resulting in the tonal equivalent of hitting the same key, forcefully, over and over – banging, rather than playing

This age of massive architectural production is also dominated by another phenomenon of rapid project preparation and implementation. Millions of square meters need to be planned and designed in the course of few months. In the age of globalisation, projects have increased in scale and complexity, but their time frames have been compressed to catch

market opportunities and launching and exhibitions schedules. Ironically, this boom has also led to rising attention to tradition, heritage and culture; project to be inspired or guided by tradition, or dialoguing with or translation of tradition are frequently appearing in many project briefs. The importance of traditional architectural has been commercially recognised in the Gulf to create buildings and spaces founded on cultural heritage of Arabia. The opportunity exists; is it however going to be an exploration of heritage DNA or simply scanning of few books and postcard? The role of architect/ planner is in question and the knowledge of the cultural context is imperative. Equally important is that the available and future research on the subject should be explored, distilled and planned. Research should feed into practice and vice versa; it should be a two ways process based on dialogue and integration.

Bahrain Context

In the last few years Bahrain has been experiencing a political transformation encouraging many socio-economic and cultural developments. Adopting a constitutional democratic monarchy followed by municipal and parliamentary elections represent a benchmark in the history of Bahrain. These progresses are guided by a developmental vision, which builds on the past policies and achievements and responds to global and local changes. Consequently, different ongoing processes have emerged such as: decentralisation and the establishment of five municipalities; the formation of an increasing number of societies and clubs with social, professional or environmental focuses; increased awareness about accountability and transparency; encouraging women participation; and the initiation of many studies such Bahrain Urban Strategy and Management Development Plan for the Ministry of Works and Housing. Undeniably these positive outcomes could pave the path for a prosperous sustainable urban future which promotes place uniqueness and identity. This is the ultimate aim, when cultural / social, economic and environmental aspects are working in mutually complementary and supportive manner.

In addition, there are several other factors which could play positive supportive roles such as: the relative small population and geographical size of the country; the support for and familiarity with the concept of sustainability and cultural heritage; the availability of both financial, institutional basis and human resources; the absence of serious problems encountered by many developing countries; and the various developments in the different socio-cultural, economic and environmental areas. All these factors and developments taken place in Bahrain provide the seeds and a fertile ground for nurturing city identity within the framework of sustainable urban.

Sustaining City Identity

In a fast-urbanized and globalized world, the issue of identity and its implications are increasingly complex and multi-dimensional.

Traditionally, people were able to maintain strong identity in their buildings and spaces because everything was locally influenced, produced and managed. This is not the case of our modern cities, because the power of decision flows between the different groups of capital (commercial, industrial, international, small businesses), the central government, local government and coalitions of special interest groups. Cities are also internationalized through global trade, media, economic connections and free exchange of people, ideas and money.

The current rejection of internationalism and mounting problems of present cities require new approaches to urban design and planning in the pursuit of identity. In dealing with the issue of identity in urban areas, several important concepts (Table 4) should be carefully considered.

Challenges

Designing contextual architecture, which incorporate the culture and ecology of the place, puts people at the centre aiming to humanize the city, to provide a vibrant environment, and to address the problems of space disharmony, estrangement, and disorientation. Translating the previous concepts into actions has to overcome many challenges because it necessitates many changes and adjustments of existing processes and practices. These challenges could be summarized into three main action areas. First is the adjustment of existing planning and urban design approaches from physically economic orientated to incorporate cultural, social and environmental dimensions as well; short term versus long term benefits, international versus local open minded; and growth versus development. Second is the discovery of architectural heritage by analyzing

Concepts	Explanations
Complexity	• City not only physical entity, functional container, accumulation of goods or commodities, or pattern of land uses • City should respond to social, cultural, spiritual, economic, physical & environmental aspects
Dynamicity	• City not static tends to be modified in response to changes in dominant patterns : Local & Global • City Identity not fossilized but seeks to fuse traditional with modern, regional with universal
Locality	• Human needs & aspirations, social systems & cultures different so cities should be with unique flavour derived from local / regional contexts. • Place uniqueness is to be seen as reconciliation between peoples & cities and between human & nature
Authenticity	• Identity not mere superficial elevation treatments, but to be expressed in space arrangements, buildings relationships & architectural vocabularies. • identity not blind copying from the past, but through investigation to learn from its principles, references, values, qualities, images, & wisdoms
Continuity / Futurity	• Relating architecture & urban planning to history of place is to visualize built environment as living memory and to contextualise creation process. • Past is part of present and both will be part of future; continuity between old & new should lay strong foundations for future growth & development ensuring that present efforts & investments are adequately placed in long term developmental frameworks. • Recognizing uniqueness of ecology and natural history of the place, identity has also an *ecological* dimension in adjusting the relationship between man and nature from domination to symbiosis

Table 4: Important Heritage / Identity Concepts

it built forms, devices, images, principles and ideas for adaptive contemporary reuse. Such analysis should lead to a deep understanding of its urban and architectural principles, construction systems and of the potentiality of application at present time. This aims not only to re-establish / re-connect with the past but most importantly to harmonise local and international impulses; all are to form the cornerstones for sustainable urban developments. Third is the improvement of professional practices to cater for the complexity and totality of forces of time, place and culture. They should be aware of the social and cultural obligations of their professions in order to resist fallacies and commercialism and to re-adjust the defects in the dominant public taste.

Directions

Sustaining identity of the built environment is an evolving task aiming for meaningful and humane cities. It would require remedying, as much as possible, the mistakes of the past, adjusting present approaches and practices, and responding to future needs and aspirations. The task is enormous considering the complexity but the situation is not incurable and as Mumford pointed out (cited in Hahn & Simonis, 1991: 199): "There is a way back from the concrete jungle to a green world. It requires both social and technical steps – both planning and invention". Three integrated directions- conservation, regeneration and innovation-could re-shape and shape the city within the context of ecology of the site and the culture of people. Integration means the three directions are planned to operate in mutually supportive and complementary manner; the city is treated as one body of different parts within the regional and national context.

Conservation

Traditional areas and historic buildings echo the 'spirit' of a culture and act as the living memory of the society. They are expressions of the collective attitudes and the common patterns of life, and as such they are a source of identity and inspiration. Old areas should be like living museums where people are not only spectators, but also participants through experiencing architecture – seeing, hearing, smelling, tactility and movement of the body. In many cases of the Arab world including Manama and Muharraq in Bahrain, traditional areas are suffering form deterioration, invasion of commercial activities, and being cheap accommodation for labour. Bringing life to these areas, through conservation restoration, new functional rehabilitation, replacement or in-fill - should tackle fundamental issues. First is integrating between old and new urban areas; old areas stand as isolated island cut from the rest of the city by insensitive urban grid system disregarding the morphological structure of the organic dynamic nature. The survival of these areas depends, to a large extent, on connecting old areas with the rest of the city by introducing compatible transportation systems and infrastructure networks. Second is harmonizing between new and old areas in terms of scale, building typology and urban morphology, as well as enhancing quality within old areas by appropriate in-fill urban

design projects and landscape schemes. Third is developing appropriate incentives, land-use systems, building regulations within a comprehensive planning mechanism capable of translating conceptual abstract manifestos into effective practices. This mechanism should classify opportunities for conservation, functional rehabilitation, replacement or in-fill, than setting clear guidelines for intervention. Fourth are encouraging financial investments from a combination of sources: public, private developers, and from the provision of financial incentives to the owners through soft long-term loans. Fifth is developing traditional construction crafts, which do not freeze up with old techniques and materials, but also able to invent and progress with the use modern materials and technology.

Renewal

Uplifting the quality of modern urban areas is essential to bring back liveability and human scale to our cities. The rationality of sciences and technologies are not the answers to the city crisis; the answers lie in improving urbanity and re-humanizing cities again. Renewal is committed to identify ugly places – vacant plots and neglected buildings - in our cities and to propose remedies by bringing them into effective use. Henderson (1996: 6) declares that: *"Cities are not shaped solely by major developments. They become the sort of places they are as a result of what happens on innumerable small sites"*. The success depends largely on generating funds from urban renewal schemes from private and public sources, ensuring community participation and developing appropriate administrative and legal frameworks.

Rejuvenation of unattractive city areas demands inserting of meaningful open spaces and encouraging pedestrian networks; and redesigning of traffic networks and harmonising between different building styles and types. There are several options to transfer "unloved" areas into friendlier places by: making them safer and providing adequate accesses; and softening and enclosing spaces using imaginative landscaping concepts. This also involves inserting parks and functions such as open museum, gallery and café shops to attract people and to bring them together; and by introducing landmarks such as gates, sculptures and landscape features in which other artists, children and local communities should be involved. Addressing the ugliness of the city can also focus on individual buildings by creative insertion, demolition, repair, and functional re-use. Mix use, appropriateness and imagination could have lasting positive effects in urban renewal projects. Introducing such as roof gardens, insertion new function, and modifications of elevations are few alternatives. Increasing built up-areas, tax on undeveloped sites, improvement maintenance tax could generate substantial funds to carry renewal initiatives.

Innovation

Attempting to reclaim architectural continuity, in newly developed areas, is to find balance between stability and change, between tradition and modernity, and between internal and external influences. The attempts require genuine architectural expressions that respect the values of the past and yet open the door to

a future full of modernity and promise. Architects must also involve in a progressive creativity adding new dimension in the pursuit for truthful meaningful, liveable 'modern' cities. As Yeang (1987: 28) explains:

Whether the designer may like it or not, all new constructions takes place in the present where contemporary influences, technology, context, world trade and economy, all of which are already there in the present and have the contended with. Rather than negating contemporary ideas and forms of construction, the design question to the regionalist is therefore to seek ways in which the imported technologies, materials, ideas and built forms can be effectively localised (where appropriate) to best fulfil the building, the programme and to be beneficial to the local community.

These approaches depart from the simple imitation of the past to the innovative interpretation, reflection and expression. Instead of leaving cities being drifted by the currents of modernization / globalisation, attempts should focus on localizing international ideas, materials and technologies (Yeang 1987: 12-33) in order to synchronise between tradition and modern, and between regional with universal. It bears awesome responsibilities from government to people, from professional to clients, from teachers to students and from society to environment. It strives at creating meaningful, comprehensible and engaging urban areas, which are not ordered by global forces, professional mannerisms, and short terms goals; but conditioned by the inseparable relationships between place uniqueness, human needs, economic growth, and natural integrity with the framework of sustainability.

Conclusion

From modernisation to globalization; spaces, places and people have been uprooted and transformed often beyond recovery in many Indeed, it has been more so in the Arab world particularly in the Gulf and Bahrain is no exception. Since the discovery of oil, international travel, modern industrial productions and generation of energy have driven the engine of globalization and have simultaneously created several urban transformations, at different levels and different intensities, in the Gulf Region. In order to construct a healthy way forward, it is necessary to examine the history and continuity of the traditional cultural practices and forms of spaces and places in the face of modernisation - globalization with their various emerging fashions, influences and trends. During the process, attempts must be made to initiate a more profound, strategically sound principles and efficient sensible practices that are based on understanding the transformations of culture and space and how the problems of these transformations could be viewed more as opportunities rather than wicked, insurmountable problems.

City identity is the product of the planning system, the professionals' creativeness and peoples' awareness. The complexity and elusiveness of the concept are clear. Nevertheless, if any concrete result to be achieved, identity of our modern cities should not be treated as a materialistic stylistic matter in isolation of the social, cultural, economic and environmental dynamism of urbanization and or globalization. Identity issue should, therefore, be integrated within the processes, which shape, manage and finance the cities. In

this way, identity is discussed in relation to maintaining ecological integrity, to developing economic bases and to improving social conditions. This is nor recycling neither copying of tradition, but requires rethinking and innovating, and changing priorities of productions and behaviours.

In the case of Bahrain, the positive developments that have taken place, in the different socio-economic, physical and environmental, need co-ordination and integration in order to preserve and promote place uniqueness, and to move towards culturally rooted planning and architecture approaches. This requires intelligent interventions in comprehending the challenges and conceptualising the appropriate measures to be taken. As has indicated, building on the rich architectural heritage, capitalising on the constructive present initiatives and coordinating between the different aspects and layers of the built environment would enable culturally rooted approaches to flourish in the face of rising tides of modernisation and globalisation. The opportunity is waiting to be captured by open discussions & hard works in order to formulate a holistic framework that integrates conservation, revival and new development.

Reference

Al-Biss, A. & Al-Salafi, J. (2004) "Saudi Architecture between Belonging, Modernism and Globalisation Challenges". Paper presented in the 1st International Conference on Heritage, Globalisation & the Built Environment, 6-8 December, Bahrain: Bahrain Society of Engineers (In Arabic).

Al Hathloul, S. (2004) Planning in the Middle East, moving toward the Future" in Habitat International, Vol. 18 no. 5 pp.641-643.

Al Khalaf, M. (2007) Sources of Form in Seef District Development in Bahrain in Proceedings of the 'Sources of Form' conference held at the University of Kuwait, Kuwait.

Al-Oraifi, R. (1978) Architecture of Bahrain. Manama: Tourist Gallery.

El-Masri S. (2007) Architectural Heritage in a Modern World; Sustainable Conservation Strategy for Muharraq City – Bahrain

2nd International Conference on Architectural Conservation: Opportunities & Challenges, Dubai – UAE, 11-13 Feb. 2007

El-Masri, S. & Abdul Raouf, Ali (2006) Kingdom of Bahrain: Architectural Trends and Issues: Reading in Contemporary Bahrain Architecture, in Albenaa Magazine Vol. 26, No 185, pp: 116-123

El-Masri, S. (ed.) (2005a) Al Muharraq: Architectural Heritage of a Bahraini City. Bahrain: Miracle.

El-Masri, S. (1998) Sustaining Architectural Identity in a Changing World: Concepts, Challenges & Directions. Paper presented in the 1st Sharjah Urban Plan Symposium, 15-16 April 1998. Sharjah-UAE

Goveas, B. (2006) Aiming Higher in Gulf Daily News Special Publication Supporting Bahrain Grand Prix March

Hahn E. & Simonis, U. (1991) "Ecological urban restructuring" in Ekistics 384, 349 pp: 199-209

Hamouche, M. (2004) "The Changing Morphology of The Gulf Cities in the Age of Globalisation: the Case of Bahrain", in Habitat International, Vol. 28, pp. 521-540.

Henderson, G. (1996) "Tackling difficult sites" in Sterlitz, Z, Henderson, G. & Cowan, R. (eds) Making Cities Better: Visions and Implementations. Leicester: Vision for Cities.

Ivy, R. (2009) "Drawing, ca. 2009"(editorial), Architectural Record, No 07, pp.15

Khalaf, S. (1983) "Some salient features of urbanization in the Arab world" in Ekistics 300 May-June, pp: 219-223.

Kirchner, M. & Rab, S. (2007) An Arbian Night's Fantasy, and that's ok, in A Manakh, pp. 18-22. Unveiled on the occasion of the International Design Forum 27-29 May 2007, Dubai, Organised by Moutamarat

Mahgoub, Y. (2004) "Globalisation & the Built Environment in Kuwait", in Habitat International, Vol. 28, pp. 505-519.

Mandeel, F. (1992) Planning Regulations for the Traditional Arab Islamic Built Environment in Bahrain. Unpublished M. Phil. Thesis submitted to the Department of Town & Country Planning: University of Newcastle upon Tyne.

Patton, M. (1990) Qualitative Evaluation & Research Methods. London: Sage.

Waly, T. (1990) Al-Muharraq- Built Environment of a Gulf City. Bahrain: Gulf Panorama Publishing, (in Arabic).

Yarwood, J. (2002?) Al-Muharraq; Architecture of a Traditional Arabian Town in Bahrain (Special Volume, No 36). London: Arts in the Islamic World.

Yean, K. (1987) Tropical Urban Regionalism. Singapore: Concept Media.

Zahran, M. (1979) Validity and Illusions in Architecture. Beirut: Beirut Arab University.

VERNACULAR NAUTICAL ARCHITECTURE IN TRANSITION: A CASE STUDY OF TRADITIONAL SRI LANKAN FISHING CRAFT

Somasiri Devendra

Abstract

This paper concerns the so-called "catamarans" often considered archetypal Sri Lankan craft. These are of great antiquity although their age can only be guessed. The vernacular form evolved from the available bio-resources and the nature of inshore waters. The craft were made only of wood with all fastenings being, by choice, of coconut coir rope , a common Indian Ocean till technology till comparatively recently. They were dual-element craft, comprising of dug-out hull connected to outrigger float by spars. The entire craft was "flexible" and thus could cope with surf-induced torque. The hull being a monoxylon, its tough, rounded bottom could withstand frequent abrasion from crossing sand spits and being hauled up the beach. It was essentially a "skimming" craft, without a displacement hull and, hence, completely different from the double-outrigger craft of south-east Asia and Madagascar and the east African coast. Its origin can, perhaps, be linked to those of Oceania. The Sri Lankan craft remained unchanged for what must have been millennia. In the last quarter of the last century, changes manifested themselves: the gradual use of iron nails; the increasing use of GRP and of nylon cordage; the use of outboard motors and the consequent morphological changes such as the substitution for the double-ended configuration of a fixed bow and stern and others. The reasons for change included deforestation, changing priorities in life, cost of manufacture, loss of skills etc. that are dealt with in the paper. An important aspect is that, even the use of new materials and techniques has not changed the basic dual-element form of the craft. This apparent contradiction raises a fundamental question: when, in the course of transition, does a vernacular form cease to be vernacular? This paper is the first attempt to record the process of the ongoing transition of these craft.

Preliminary Remarks

The relevance of nautical architecture to this seminar

There are many more aspects to the vernacular than the built environment and settlements. Watercraft, which are water-borne work platforms and even floating homes, have their vernacular forms. In this paper I intend to draw your attention to one of these: the Oru, the archetypal fishing craft of West and South Sri Lanka, which is on the cusp of disappearing or of being radically transformed. Given the concerns of this Seminar, it may be noted that the users and builders of these craft also live in seafront settlements that can be also classed as vernacular. Robert Grenier, long time President of ICUCH, told me that, world-over, traditional fisher-folk lived in communities very much like these, and that even the size and their spatial disposition of individual houses were similar to ours. This was nearly twenty years ago. Later, when I was asked to review *"The ARCHITECTURE of an ISLAND: The Living Legacy of Sri Lanka"* (Ronald Lewcock, Barbara Sansoni and Laki Senanayake) I remarked on the parallels between the architecture of vernacular buildings and of the oru, stemming from their shared parentage. (Devendra:)
Our fishing craft are a product of nautical architecture. Common called "Naval Architecture", it is known both as a discipline and a specialization. I, however, use the term "nautical" instead of "naval" as I am dealing with vernacular craft in the building and design of which the scholarly and scientific disciplines of formal Naval Architecture are not followed. Certainly, such craft were purpose-built, by builders who drew upon tradition and experience and not upon drawings, calculations, basin trials etc. They are the products of a design process, far removed from that of "Naval Architecture".

Introduction

Definition and scope

The *Oru* – to use its plural, or stem form in Sinhala (*oruwa* being the singular form) – is an outrigger canoe. It is dual-element craft: a marriage of a dugout log hull and a balance log (or outrigger). They are commonly and incorrectly called "catamarans" in English. This nomenclature is an accident of history and cannot be undone. But a recent dictionary of watercraft (Mariners' Museum, 2001: 123) lists thirteen geographical regions in which the word "catamaran" is used to denote a raft, and is very specific in its overall definition:

catamaran

1. Generic term for a shaped raft of bamboo or logs found in numerous parts of the world...

5. Sometimes mistakenly applied to an **outrigger canoe.**

The word "catamaran" is, in fact, derived from the Tamil word *kattu-maram* which denotes a shaped-log raft. Early English writers mistakenly applied the latter name to denote the *oru*, and this misnomer has, since, become standardized. For readers of this paper it is essential to know the difference. Let me explain. The *oru* of the fishermen is basically a dugout canoe which retains the shape of the log (*orukanda*). It is modified by plank strakes

sewn vertically to the gunwales to increase freeboard (i.e. height above waterline), and a single outrigger balance-log (*kollaeaewa*) connected to the dugout hull by two flexible booms. The composite structure comprising hull and outrigger is the *oruwa*. Other major functional features of the craft are removable: rudders, leeboards, oars, masts and sails. All parts attached to the dugout hull are fastened with coir rope, either by sewing or by lashing. *Oru* are found in several configurations: variation being dictated by function. In calm inland waters, the plank strakes, masts and sails, rudders and leeboards are not used while, at sea – the working environment of the dominant form of *oru* – the type of fishing carried out dictates the size, and such additional features as rowing rails.

My focus will be on the *oru* but I will also touch upon the two other types of fishing craft in use in Sri Lanka.

(1) The "shaped-log raft" already referred to, which exists in two forms – *kattu-maram* and *theppam* – both of which are derived from Indian forms and bear Tamil names. Both are made of logs, shaped to facilitate sailing at sea. *Kattu-maram* ("lashed log rafts") are larger, with 3-5 logs lashed side-by-side with coir rope, with a removable, shaped bow-piece attached to the bow. The smaller *theppam* ("pegged-log rafts") differ from them in size and the absence of a bow-piece but mainly in the manner of lashing: the logs are more finely fitted, and pierced breadth wise, through which two long, two slightly bent pegs passed which protrude outside the logs. These protruding pieces are the "pegs" which make lashing, and the removal of lashings, are made easier.

(2) The other type of fishing craft is the beach-seine boats called *ma-dael-paru* in Sinhala. It is a large, scow-ended craft with vestigial twin-hulls, rectangular in plan, with high freeboard, used for laying off-shore seine nets and not for sailing.

For the purposes of this paper no further description of these types is necessary.

This paper deals with the traditional fishing boats mentioned and the transition they have now undergone. I have structured this paper as follows. It will first try to explain why the *oru* is considered a vernacular form. Next it will describe its form and structure. Then it will deal with the heart of this presentation – an aspect of the *oru* that has hitherto not been explored – namely, the transformation of the *oru* away from a strictly vernacular form, and the parallel process in the theppam and the *ma-del-paru*. Finally, some questions that arise from this transformation process will be discussed.

Is the oru a vernacular form?

I required an objective definition of the term "vernacular" to buttress my own understanding of it which is derived from language studies. On the internet I found www.answers.com which provided definitions of both the noun and adjectival forms. As our interest is essentially the latter form, I give it below, with my emphasis underlined:

1. Native to or commonly spoken by the members of a particular country or region.

2. Using the native language of a region, especially as distinct from the literary

language: a *vernacular poet*.

3. Relating to or expressed in the native language or dialect.

4. Of or being an indigenous building style using local materials and traditional methods of construction and ornament, especially as distinguished from academic or historical architectural styles.

5. Occurring or existing in a particular locality; endemic: a *vernacular disease*.

6. Relating to or designating the common, nonscientific name of a plant or animal.

I can now continue on the assumption that "vernacular" refers, in essence, to something that is particular to a region; is indigenous in style; and uses local materials and traditional constructional methods and ornament. Within these parameters, the *oru* is definitely a vernacular watercraft.

The regional limits of the Oru

I have already spoken of the oru as a single-outrigger dugout canoe. Single and double outrigger canoes are to be found in Madagascar and the east coast of Africa, in and around Sri Lanka, in the Indonesian archipelago, and in the distant islands of Oceania. In each area they are distinctively different, with the main differences being those between single outrigger craft, double outrigger craft and double hulled craft. In the Indian Ocean the double outrigger craft are found in the western and eastern rims while the single outrigger, common in the Pacific Ocean, is found only in Sri Lanka, Kerala and the Andaman Islands. (Hornell: 1943). In Sri Lanka, the centre of this grouping, they are found only in the South and Western coasts: the coasts furthest away from the looming presence of India. James T. Hornell, the pioneer of 20th.century studies in watercraft the world over who once served as an advisor to our Department of Fisheries, made the oft-quoted perspicacious remark that

> No greater contrast can be found in small craft designing than that between the types used on opposite sides of the Gulf of Mannar, South of latitude 9 degrees N. On the Indian, or Tamil, side the catamaran or boat canoe alone are employed; on the Sinhalese side, the outrigger canoe is the national and dominant design, the catamaran being used only in the northern, or non-Sinhalese part of the island and by migrant Tamil fisherman in Colombo, with the dug-out restricted to its proper sphere of usefulness on rivers and inland waters. (Hornell: 1943:) (emphasis mine)

Thus, even though Sri Lanka was the centre of the Indian Ocean single outrigger culture, the heartland of the culture was that area that Hornell delineates: south of the Gulf of Mannar, meaning, the western and coasts. It may be noted, in passing, that with the change of the monsoons the fishermen and their *oru* moved overland from west to east and back again. This migration came to an end in 1983 and hence the presence of *oru* in the east coast has diminished. A Fisheries Department map of 1958 gives the following distribution of *oru*: Western Coast (Kalpitiya to Galle) – 4000; Southern Coast (Galle to Hambantota) – 1900 [*a grand total of 5900*]; and Eastern Coast (Kuchchaveli to Akkaraipattu) – 1500. The west and south were, therefore, the heartland of

the oru where it flourished and, in fact, may have been born. Last year the definitive record of the last of the vernacular oru of this area was, at last, published (Kapitan: 2009). Beyond our shores our nearest neighbours – in terms of nautical culture – are the Laccadive Islands, the Andaman Islands and, in India, Kerala with whom we have had a long history of maritime contact. This is an interesting grouping and, as far as mainland India was concerned the islands were, perhaps, the "lesser tribes without the Law". Eric Kentley, who systematically studied the *ma-dael-paru* of Sri Lankan and the *masula* boats of the Coromandel coast was moved to say:

Although the boats of Sri Lanka share with several other boat types of the Indian Ocean a common technique in fastening planks, indeed a special method of sewing, this is a single attribute and not sufficient to place Sri Lanka within a broad 'Indian Ocean boat building culture'. In terms of maritime ethnotechnology, Sri Lanka has a distinctive culture: sewing may be the only imported trait (though it cannot be ruled out that it developed here first). (Kentley: 2003: 180)

Note that he places our maritime ethnotechnology outside the Indian Ocean boat building culture. This independent authority justifies the position that our nautical culture was a vernacular one.

Form and Structure 1: the operational environment

Oru were in use both on the sea and in sheltered inland waters. On river, lake, canal and lagoon, where there was no turbulence the oru was merely a hollowed-out log joined be spars to a balance log (the pila oru) which was quite stable in that environment. At sea, however, the dugout log could ship water and vertical plank extensions were sewn on to increase freeboard and prevent the hull from being swamped. This required the outrigger booms that curved downwards from the top of the vertically extended hull to the balance log low in the water. With sails on bamboo sprits and being double ended, it could efficiently "change ends" or "shunt" instead of tacking in the western manner. It remains a fast and maneuverable sailing craft able to sail close to the wind, The oru operated in comparatively shallow inshore waters, with shelving beaches, off-shore reefs, heavy surf close to land, a negligible tidal range, and prevailing currents and counter-currents subject to abrupt change. In such waters, the craft had to be of shallow draught and hardy construction with a bottom sturdy enough to withstand abrasion in the sandy shallows and the shelving beaches on which the craft were beached in fair weather. It had also to be able breast, or ride the surf while remaining essentially a workboat. The oru (with no keel), with its shallow draught dual element form and satisfied all requirements. Without a keel it could cross the reefs without difficulty. Its dugout hull with 'sewn-on' extensions made it a 'flexible' craft able to cope with the torque experienced in the surf.

This operating environment required a craft with the following characteristics:

- Tough hulls, of freely available material, that could withstand long-term abrasion and cross sand spits so that the same craft could work at sea and on river

• Fastening with easily replaced "sewing" material, which assured a 'flexible' craft at sea.

• A shallow draught, and bi-pedal configuration which enabled 'skimming' over surf and beaching upright ashore.

Form and structure 2: structural resource

Constructional material was easy to find. The south-west of the island – the heartland of the *oru* – was, until the 19th.century, under heavy rain forest cover which afforded builders a wide spectrum of timbers. Vitharana (1992:), speaking of the last surviving *oruwa* fishing craft, lists thirty-eight different types of wood used for seven major parts of the craft: 03 for the Hull, 05 for the washstrakes, 05 for the Booms, 02 for the Balance log, 08 for the Rudder, 04 for the Mast, 05 for the Oar blade and 06 for the oar handle. A larger palette may have been available earlier. Iron and steel were produced locally, and steel adzes used to hollow-out the log boats. But, importantly, iron nails were not used to fasten parts of the boat together; coconut-fibre rope being the preferred alternative in most of the Indian Ocean cultures. Since this palm propagated itself around the coast, and was also cultivated inland, there was no shortage of rope. Coconut timber and fibre were widely used elsewhere in the Indian Ocean region, too. Gunawardana (1990:), quoting al-Idrisi, says that Arab ships from Oman came here to obtain rope, coconut tree trunks for masts and spars and timber for planking, as well as to place orders for ships which were constructed here. Commercial coconut plantation is referred to in the reign of King Mahadathika Mahanaga (9-21 A.D.). That foreigners knew about this is borne out by Aelian, (170-235 A.D) who says that:

"...this island in the Great Sea which they call Taprobane has palm trees wonderfully planted in rows, just as in lush parks the park keepers plant shady trees."
(Weerakkody 1997: 235)

The bio-diversity of south-western Sri Lanka provided the boat building elements required to build a vernacular craft with the desired characteristics:

• Timber of large size was freely available and building large ships a viable option.

• Other timbers with characteristics essential for specific purposes were also available.

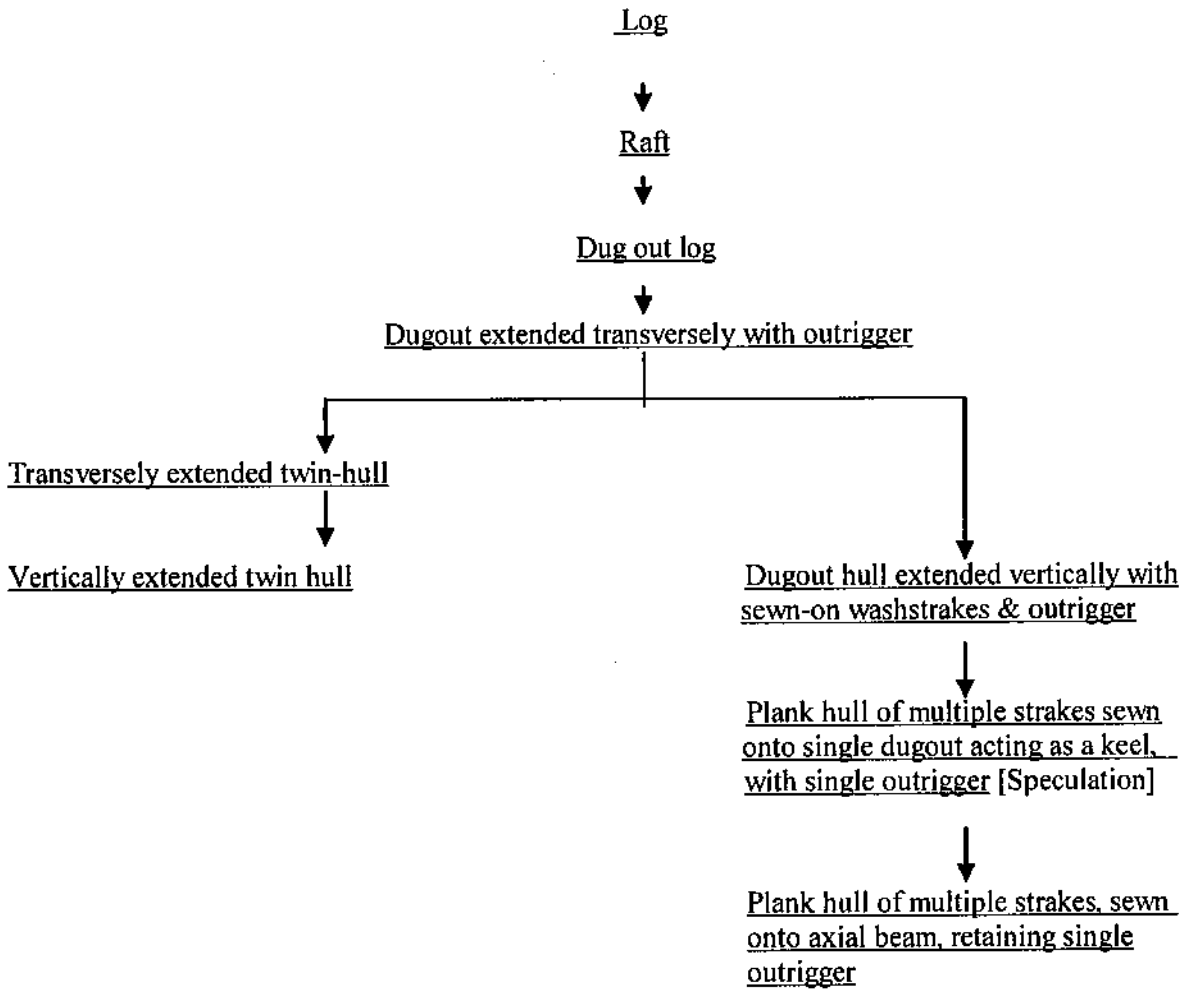
• Coconut rope used, by choice, for 'sewing' the elements together and the tree itself were cultivated commercially for naval use and export

Transformation

Rationale

So far we have traced the birth of the *oru* to a specific heartland; traced how the inshore maritime environment determined its form and structure; and seen how the biodiversity of the heartland provided all necessary boat building elements. The *oru* required very few materials: in fact, only wood, coir rope and cloth for sails. With this modest range of requirements, the craft persisted, changing as necessary, for a period unknown to Man: the oldest found, studied, recorded and dated is of *Artocarpus nobilis* and is C14 dated to 2300BP ±

Fig. 1



100 years (*circa* 380 BCE). The evolution of this vernacular form in sequence is given in Fig.1.(above)

Transformation of this base form sparked off by one, or more factors, such as:

- Drying-up of bio-resources
- Lack of demand for the craft
- Loss of skills required
- Availability of alternatives
- Change of life-styles

No doubt there are other factors but, among all those listed, only the second did not affect the *oru* or the *Kattumaram / theppam* and *ma-dael-paru*. In other words, there was a steady demand for fresh fish in a country where meat-eating was not widespread, and the fishermen and their craft played an important role in community life. However, major socio-economic developments had begun to influence the south and west, stemming from changes that began in the 16th century. Without detailing the reasons it is sufficient to note that this least "developed" region in ancient and medieval times was transformed as the most commercial and urbanized region in the country, and that the new economy touched and radically changed the life of all those who lived there.

The pressures exerted by these factors made

the boat builder and owner to look for ways to build, maintain and use the craft by resorting to various stratagems. Building of new oru ceased to be easy with the clearing of the forest cover for coffee and tea plantations and the urbanization of the west and south. Simply put, suitable trees were difficult to find and the laws pertaining to their felling were equally difficult to deal with. Coconut fibre also became a scarce commodity. Rope has to be woven by hand to reach the standards required for high-risk work, but with coir manufacture becoming mechanized, fishermen were forced to weave their rope themselves. New boats were thus built irregularly and tended to be smaller, and the cost considerably higher. Hence means had to be found to maintain the older ones in operational condition. With new boats not being built, the traditional builders found their skills no longer in demand. For a while, though, a part of their skills were useful for the upkeep of the older boats, but not for long. When the Omani builders of the "Jewel of Muscat", a replica of a 9th century Arab ship came here two years to find specialists in sewing with coir rope, they could find only one who was sufficiently skilled and they recruited them from Cochin. If sufficiently large trees, necessary quantities of high quality coir rope and sufficiently skilled builders were not available, alternatives had to be found – because fishing was an occupation and livelihood and important to the community.

Process

The first constructional material outside those dictated by tradition was iron nails, clenched or riveted. It began with their use to fasten wooden patches on to the hull. The earlier practice had been to remove the damaged section, making a neat rectangular opening which was filled in and covered over by a rectangular wooden "plug patch" sewn on to the main hull. Even in the 1960s, if not earlier, patches nailed/riveted to the hull, instead of being sewn on became common. I can only assume that the reason was mere simplification. Iron nails/rivets corroded in seawater and would have been replaced later by copper nails. The copper or aluminum alloy coins served as a 'washer' (the technical term being 'rove') between the nail head and the wooden hull to reduce rusting and, I presume, that the coins would have been used after iron nails or rivets proved unsatisfactory. Nails were thus the first non-traditional material to be used.

The traditional material that made its absence felt, in a major way, was coir rope. By this time the builders had already become maintainers, and they required quantities of quality rope to keep the *oru* seaworthy. All sewing and lashings on board were replaced within 12-18 months, generally soon after the Sinhala New Year. If there was no rope there was no boat, and so an alternative was found: nylon cordage which was freely available in a variety of sizes by the early 1970s. It had its advantages and disadvantages, but price and availability were strong arguments in its favour.

So far, the transformation was entirely a matter of substitution of one constructional material for another. The next stage was the transformation of the *oru* from a sailing craft to a mechanized one. The first outboard motors (OBMs) made their appearance in the 1970s. In

stage one of the transformation process the motor was attached to the after boom. The OBM provided motive power and steering capability. The effect was to change the entire rationale of the *oru* form. The *oru* was a double-ended craft with each end serving as the bow whenever the set of the sail was changed. Now that the craft had a fixed bow and it could only use its sail when the motor was removed. In the second stage, once the motor had proved its value, one end of the craft was sawn off, creating flat surface ('transom stern') to which the motor could be permanently affixed. This change both improved the sailing qualities of the craft and made it impossible to sail.

While this transformation was taking place, another new material was making an appearance. "Glass reinforced plastic", or GRP, locally called "fiberglass" was already used in building mechanized fishing craft. It first entered to *oru* scene as a material that could be used to apply patches to even old wooden hulls. Soon, small paddled *oru* hulls were made on moulds and found to be satisfactory: however only the hulls were of GRP, with the booms and balance logs being yet of wood lashed to the hull. Hulls of larger, seagoing *oru* were next on the scene, with the stern fashioned specifically to accommodate larger outboard motors. Greater power meant greater speed. The stern-mounted motors, when revved-up "dug" into the water lifting the bow partly out of the water as the craft now planed under power.

The change in the way the hull behaved under extra power required the hull to be redesigned. Accordingly, the bows were sharply raked upwards resulting in the *oru* acquiring a planing hull. To benefit from the planing, spoilers were introduced on both sides of the hull to deflect the bow wave generated.

Yet booms and outriggers from old craft were lashed onto these "state of the art" GRP hulls. I have since noticed that outriggers of GRP are beginning to be used and have seen one smaller craft with both outrigger and booms of GRP. How widespread these are I do not know but I have no doubt that they will be in common use in the not too distant future.

It is interesting that the booms have been the last to fall victim to GRP. Vitharana (---) says

Of any dugout outrigger canoe it is the boom, of all its parts, that comes under almost constant and, at times, the most tremendous strain; and a broken boom means, invariably, a capsized hull. If a mast, rigging and sail stand the onslaught of a gale-force wind and the outrigger remains buoyant, a weak boom – just one of the pair – can spell death to the crew.

Perhaps the requirements of a safe boom cannot yet be met by GRP – though I have seen them in use in beach boats in Hawaii.

- Hulls are not made of dugout logs but mould of a synthetic material.
- Sewing has been limited to simple gunwale beading, as the vertical washstrakes are now part of the moulded hull.
- Sewing, however limited, and the still essential lashing are done with nylon rope,
- The hull form is no longer double-ended, but has a considerably modified .fixed bow,
- Polypropylene fertilizer bags are used as sail-cloth, particularly on the east coast.
- The seagoing oru are no longer sailing craft but are mechanized craft.
- *Theppam*, are also moulded of GRP in one piece without any lashings.

• *Ma-dael paru*, which went were not built a decade or two ago due to the cost, has reemerged in GRP, courtesy of aid following the tsunami of 2004

Question: does " transformation" put an end to the "vernacular"?

This is the question I would like to pose. The *oru* was a regional craft, built of wood and coir rope to suit a particular maritime environment; double-ended, married to an outrigger and powered by sails. To day it is built of GRP and nylon, powered by a, outboard motor, and neither double-ended nor a sailing craft. It uses no single material of which it was originally built. The traditional shipbuilders have gone, and factory-built craft are bought off the shelf. On the other hand, the craft – though considerably modified – still retains its dual-element form and, its use is still limited to the same region. In India and the Gulf States I have witnessed the same phenomenon: old boat forms cloned in GRP. Reviewing *'Boats of South Asia'* (McGrail et al:) for the International Journal of Nautical Archaeology, I raised the question in relation to our own fishing craft:

... how far must the materials of traditional boats change before they [i.e the boats] cease to be traditional? In extreme cases—as in the *vallam*, *oru*, and *teppam* of Sri Lanka and more complex craft seen in the UAE—the traditional form is reproduced completely in fibreglass and made on a mould.

Today I would re-phrase this thus:

If the craft retain the form of the older, vernacular craft, but are built of completely different materials and are used within the same regional limits, can we consider them as belonging to the vernacular tradition?

Conclusion

I present this very early exposition of the process of transformation of a vernacular structural form with due humility. It is certainly not comprehensive enough but, to one whose interest is in pre-modern watercraft, it appears logical that this seminar is the correct forum at which to pose my questions and seek guidance. Thank you.

References

Department of Fisheries. 1958. *A Guide to the Fisheries of Ceylon*. Fisheries Research Station Bulletin no. 8. Colombo

Devendra,S. *Sunday Times Review*

Gunawardana, R.A.L.H. 1990. Seaways to Sielediba, in *Sri Lanka and the Silk Route of the Sea* , Bandaranayake S., Dewaraja L, Silva R., Wimalaratne K.D.G. ed. (Revised from *Kalyani Vols.* V & VI of 1986/87). Sri Lanka National Commission for UNESCO and The Central Cultural Fund. Colombo.

Mariners' Museum, with contributions by M.H.Parry et al. 2001. From *Aak to Zumbra: A Dictionary of the World's Watercraft*. London

Hornell, J. 1943. Fishing and coastal craft of Ceylon. *The Mariner's Mirror*. 29.1

Kapitan, G. 2009. *Records of Traditional Watercraft from South and West Sri Lanka*. BAR International Series 1931 and NAS Monograph Series No.2. Prepared for publication by Grainge, G. and Devendra, S. Portsmouth

Kentley, E. and Gunaratne, R., 2003, 'The *Madel Paruwa* of Sri Lanka – a sewn boat with chine strakes' in McGrail,S. *et al* in *Boats of South Asia*,London and New York

McGrail. S *et al*.2003.*Boats of South Asia*. London and New York

Vitharana, V. 1992. *The ORU and the YATHRA: Traditional Outrigger Craft of Sri Lanka*. Dehiwela.

Weerakkody, D.P.M. (1997). *Taprobane: Ancient Sri Lanka as known to Greeks and Romans*. BREPOLS, Turnhout. (Vol.I of *Indicopleustoi: Archaeologies of the Indian Ocean*)

FRUGALITY: CONSIDERING AN INTIMATE MODERN

Riyaz Tayyibji

Abstract

This paper is an attempt to examine one of the strands of Indian modernity that does not subscribe to the industrial presupposition as the basis of its discourse. Rather this is a modernity situated in a paradigm that is "agricultural" with far reaching implications both culturally and environmentally.

The Paper is comparative, building up contrasts between concepts that underlie a modernity that is "Industrial" and one that is "agricultural". It explores their respective attitudes and modes of "reduction". The first, "Minimizing" and its aesthetic equivalent, Minimalism is located in the industrial and particularly in the processes of mass production. The second, "frugality" is its equivalent in an agricultural paradigm, and is rooted in relationships and concepts whose aesthetic and therefore architectural potentials have not been adequately elaborated. This paper aims to study the architectural implications of "Frugality" with its emphasis on the rural-agricultural rather than the urban- industrial, bodily relationship to space rather than visual and mental constructions of space, and an intimacy with the material, the tactile, and a world that is "Full".

Historically speaking this paper explores the aesthetic and architectural implications of a "Gandhian" Modernity as being distinct from the ubiquitous modernity that is our "Nehruvian" legacy.

Architecturally the paper develops, in contrast to the idea of "transparency", that ubiquitous spatial need of all modern and minimal architecture, the idea of "Porosity", an attitude of material continuity that does not distinguish between differing forms of matter. Where as the first requires a spatial continuity, the latter is based on a continuity of material. Through the description and analysis of Gandhiji's residence, Hruday Kunj at his Ashram on the Sabarmati in Ahmedabad, this paper elaborates on the experiences of such architecture.

Minimalism & Frugality

In a world of diminishing resources and environmental degradation due to excessive plunder of a natural world, 'reduction', has come to have special importance. Here we consider two modes of 'reduction', Minimalism and Frugality, examining the values that underpin their two distinct modernities.

To 'Minimize' is to 'reduce to a minimum, to estimate or make appear to be of least possible value, or amount or importance'. Though simple enough in definition 'Minimal' implies a possible absolute. This also relies on quantification, on measurement, which at least in principle is always approximate. Thus the idea of the 'minimal' must marry the contradictory, desire for an 'absolute determinism', with a process that is 'always approximate'. This contradiction only allows for an accurate description of objective reality, which gives rise to a sense of determinism that was commonplace at the founding moments of European modernity.

The term 'Minimalism' in architecture as in music and the visual arts, generally refers to a work stripped down to its essentials, devoid of expressive elements and artifice, particularly historical reference, to heighten a gestaltic perception of an object. "Parts bound together in such a way that they create a maximum resistance to perceptual separation", said Robert Morris of a specific movement in the visual arts that had its roots in an abstract approach of the International Modernism of the 1920's. Though evolving from developments arising out of a more immediate reaction to the Abstract Expressionism of the 1960' and 1970's, 'Minimalism' shared with Modernism the rejection of both personal subjectivity and historical reference, and was rooted in a temporality that "looks at the present as a site of ones escape from the past"[i]. Spatially 'Minimalism' is intellectual rather than sensorial in its impact.

'Minimalism's' aesthetic concerns grew as much out of the methodological requirements of design for industrial processes, shaping products for mass production; as it grew with reference to the engineer's aesthetic of the 'Marvels' of the Industrial world – the steam ship, the bi-plane and the automobile. From the early proclamation by Le Corbusier, "the house is a machine to live in", this reductive materialism never lost sight of its mechanistic and industrial roots, nor did it loose its emphasis of primarily describing objects. Building Elements were conceived as abstract geometrical entities. Floating lines and planes composed weightlessly in Cartesian space. The mechanistic fascination of modern architecture gave this abstract conceptualization a particularly hard edged tactility which was rooted simultaneously in the disciplines of modern engineering, its material technology and a developing sense of urbanity. 'Minimalism' must therefore be seen as a part of a particularly European Modernity, an industrial 'Less is more'. Arising in a climate of increasing individual free choice. Subsequently this has developed into a 'style' that is associated with a watered down Avant-garde, an individualism that has come to be associated with a sense of exclusiveness and luxury. This has been its trajectory in a globalizing world. It has been flattened from its rigorous Gestaltic intent into a template and diagram for functionality. Its non-referentiality has become an outline within which local, regional and place related details can be filled

in. This has become the most preferred popular response to the social failings of modernism, where the issue of identity and place are supposedly addressed without giving up the efficiencies required for mass construction in a globally capitalized world. In Indian Architecture this is now the legacy of a Nehruvian Modernity- Industrial, Urban and rooted in a particularly European sense of order progress and development.

"Modernity whether in architectural discourse or in other fields has been mainly discussed in asymmetric terms, in which the west is celebrated as the progenitor of the modern. Thus the discourse generated tends to produce theories of modernity which are unilaterally applied to all of humanity" [ii] . "It is now accepted that there are 'different modernity's' in the making that rather than being distinct or successive are simultaneous with considerable overlap" [iii] .Post colonial Indian modernity contrasts itself from European modernity as it is from the present that one must escape. It is significant and unique as it desires to re-establish links to the past [iv]. "Indian Modernity has been both a voyage in and out of the Indian past, making way for a questioning of the meta-narrative of Modernity" [v]. It is within this framework of Modernity that one must consider the second mode of reduction.

The second mode of reduction is 'Frugality'. 'Frugal' draws it's meaning from the word 'Frux/ Fruges' – the 'fruit of the earth'. It is an adjective that describes 'processes' that are tied to the relationship between the earth as medium and bearer of produce when acted on by human labour. This is not labour in a Marxist (political) sense but the action of the human body at work. Frugality is an agricultural attitude of saving and sparing. 'Agriculture itself implies 'the culture of the earth', and 'culture has a common root with 'cultivate' – to revere, to worship- to care for. It is this care that underpins the 'saving and the 'sparing'. To be 'Frugal' is therefore to produce with care for the earth. In principle when we are 'frugal' we remain simultaneously in relation to the earth at one end and our body at the other, experiencing a continuum of matter that is ecologically interrelated. 'Frugality' is an attitude of engagement that is based on 'being' with an environment, rather than the 'perception' of an environment. Here the understanding of ones environment is 'empathetic'.

In common language, 'empathy' is the understanding of another person by putting oneself in their shoes. This engagement is also applicable to understanding objects and phenomena, where one maps oneself onto the world in order to understand it. This engagement is a 'bringing closer' of the subject and object. 'Nearness' is operative in the apprehension of the environment. Deluze and Guattari in their reading of Worringer[vi] , refer to 'empathy' as the 'feeling' that unites representation with a subject, and this form of representation, they refer to as 'organic' [vii]. What Deluze and Guattari imply, is that the signifier and the signified are as much connected by 'feeling' as they are by an abstract idea. For example, when we use the word 'Tree' it is connected to the real 'tree' not only by the platonic idea of the tree, but also its 'feeling' of coolness, shade, the rustling sound of its leaves, the sprinkling of light through its foliage. These are qualities experienced in degrees. Deluze and Guattari call these 'intensities'. Gregory Bateson refers to this continuity as the 'analog' and contrasts it to

the 'digital' where experience is cut up into distinct identifiable parts. The analog draws on direct physical experience as a source of knowledge, where knowledge itself is tacit – like 'knowing' how to ride a bicycle. 'Empathy' implies 'nearness', it contrasts itself with the earlier discussed 'objectivity', a mode of apprehension that requires a clear and critical distance in order to perceive. This distance brings into play our optical apparatus: the cone of vision, perspective and an entire set of mental processes that accompany these. Juhaani Pallasma writes, 'the eye is the organ of distance and separation, where as touch is the sense of nearness, intimacy and affection. The eye surveys, controls and investigates, where as touch approaches and caresses" [viii].

The beauty of this materiality the force of its aesthetic trajectories is born of the body. Experience is sensual rather than cerebral, where 'care' and 'gentleness' are embedded in action and it is possible that Mahatma Gandhi recognized in this engagement the potential for Ahimsa.

'Frugality' has other relations to Mahatma Gandhi's ideas on Indian Modernity. Primarily an agrarian economy at the time of independence, Gandhiji saw the self-sufficiency of the village as the bedrock of this modernity. He also saw the village as part of an agrarian system networked together in a balance with the local environment. The dignity of human labour and its relationship to the primary needs of life (bread-labour) and therefore self-sufficiency (in contrast to individuality) form the basis of his societal thinking. Gandhiji recommended hand spinning (use of the Charkha), as a universal form of bread labour, but he considered agriculture to be its ideal form. He believed that if everybody made with their own hands, one essential item necessary for their existence, they would realize in a bodily sense, from their own labour, the right proportion of resource and the energy required towards their living. He believed that this was the basis for a sensibility rooted in the 'frugal'.

Laurie Baker says "I believe that Gandhiji is the only leader in our country who has talked consistently with common sense about the building needs of our country. What he said of the house. What clearer explanation is there of what appropriate building technology means.

One of the key aesthetic markers of the advent of Modernity in Architecture was the increased possibility of *'Transparency'*, with the development of new construction materials of steel and concrete. Their higher strengths dematerialized into lighter and lighter constructs. The organization of structure allowed for the possibility of a dynamic space. Frank Lloyd Wright one of the first to exploit this with diagonal vistas released through corner windows proclaimed that with modern architecture, man had finally emerged from the cave. In Europe Le Corbusier made a parallel contribution by freeing the building from the ground. His free plan and free façade with its ribbon window free from structure, allowed for *'transparencies'* that have been discussed in detail by Rowe & Slutsky[X] . In our modern world *'transparency'* has developed a moral and ethical value. Susan Sontag says, "Transparence is the most liberating value in art - and in criticism – today. Transparence means experiencing the luminosity of the thing itself of things being what they are" [xi] . A system that is *'transparent'* is assumed to be 'honest', to be 'true'; one does not hide

anything from view. All is brought into the light. Truth is rooted in 'seeing'.

'*Transparency*' has little place in the Gandhian notion of truth, which is ontological. Others have discussed this in greater detail, but for our discussion here it will suffice to say that his notion of truth was based on 'action'. In our imagination of a material continuity, the experience of space presupposes its occupation. It follows that void within the continuity of matter is the place of 'action'. The measure of void in a material is by definition its '*Porosity*'. '*Porosity*', is the equivalent of 'transparency' in this paradigm. '*Porosity*' requires a density, proximity and continuity, which opens up a material 'intimacy'. It is the '*porosity*' of Hruday Kunj, Gandhiji's residence at the Sabarmati Ashram, that marks its particular Modernity.

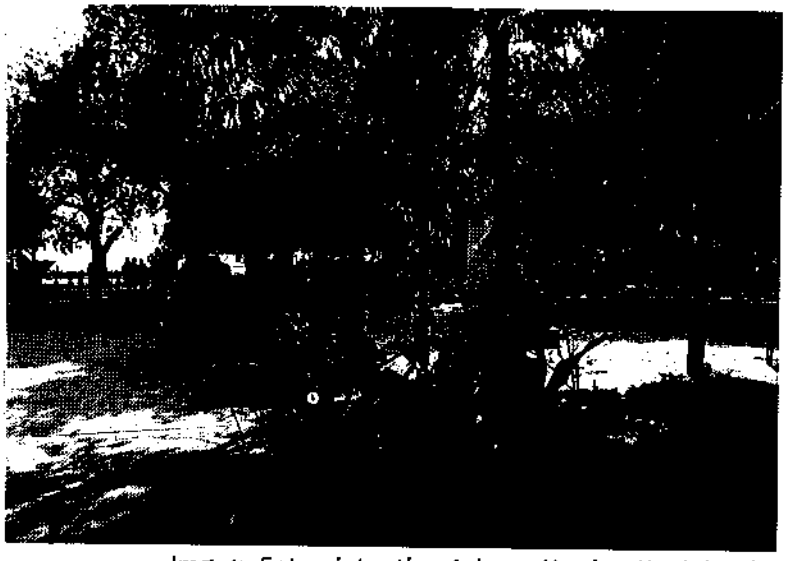
Hruday Kunj: Sabarmati Ashram, Ahmedabad

In 1917, as Europe faced the violent fallout of modernity in the form of the First World War, Gandhiji established his Ashram on the banks of the Sabarmati river a little outside the main town of Ahmedabad. This would be the place from the place from where he would lead the Salt March to Dandi in 1930, signaling publically his political intent and methods against the British towards independence. His own residence, Hruday Kunj, became the centre of both this non-violent political activity and the place of his personal experiments with 'living'. The house mediates between both these scales of habitation with an effortless continuity, with overlapping domains of 'public' and 'private' which are both simultaneously latent and never overtly expressed. This is a building where the character of spaces is determined by activity and use rather than the specificity of its formal container.

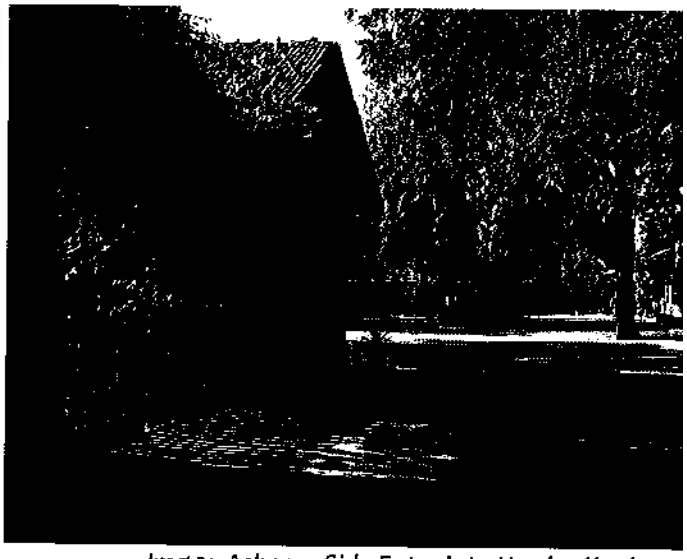
The first striking experience of entering the Sabarmati Ashram, is one
of leaving the city- its hustle and bustle behind. One enters a tranquil space full of trees (Img.1) At most times of the year coolth, silence and shade simultaneously make one aware of having entered the ashram.

As one moves along a path, under the trees, it is impossible to distinguish Hruday Kunj, the residence of Gandhiji, from the other small buildings that seem to be loosely scattered among the trees (Img 2). One first sees this house diagonally across shaded ground. The open side of the 'c' shaped house is the first view we have. This is a view in which the building is scaled to seem like two huts facing each other across a court (Img.2,4 & Drg 4.1) To enter here, opening a wicket gate under a trellis of creepers has the intimacy of moving from one inside to another of greater intensity.

Today, a paved path directs us towards the river. We move right to enter through the house' large verandah. Here the timber columns, the king post trusses and the lattice work (Jaffery), give us the sense that this might be a colonial bungalow (Img. 5, 9 & dwg. 2.1, 2.2, 2.3, 4.4) This seems at odds with the sense of 'hut' that one has had as one entered- a sense that lingers on as ones eyes are drawn to the country tiled roof, the details of the doors and windows. And yet the verandah is not an intimate space. The columns are tall, the eaves are high and the king post trusses give the verandah the scale more appropriate to a space



Img 1: Entry into the Ashram:Hruday Kunj in the Distance

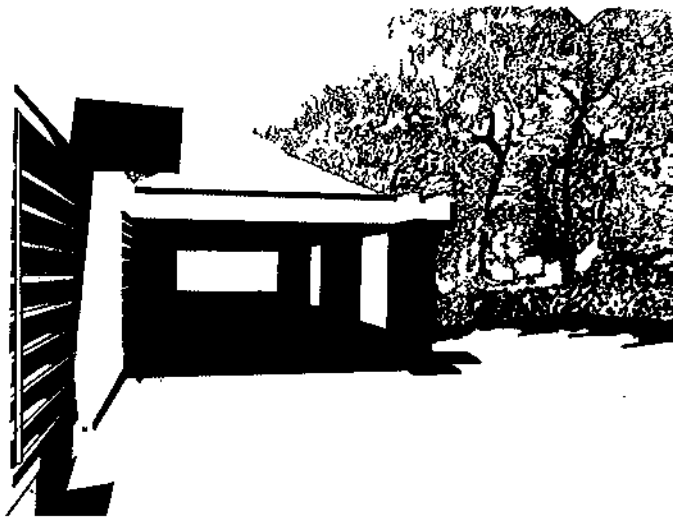


Img 2: Ashram Side Entry Into Hruday Kunj

for community gathering than that of a residence.

Ascending the plinth we are aware of our ability to freely walk across this publicly scaled verandah, into what seemed from the other side the most intimate part of the house. This permeability into the courtyard is surprising, and it is also possible to experience this continuity from outside the building across the verandah into its courtyard (Img. 5). One realizes that Hruday Kunj is a house with no inside. You are outside before you enter, released before you are either held or gathered. This building does not have a front or a back. It simply responds differently to the river on one side, and on the other, to the particular space of the ashram; its shaded outsides, which are the insides of the ashram. And yet this is not a transparent building. It is not the eye that is released. In fact it is not the eye at all, that is at the centre of its experience. If the first scenario described above is a description of entering alone- i.e. when the verandah is empty and any people in the building are either inside a room or in the courtyard, consider a second scenario of entry when the verandah is full- i.e. during a public gathering. In this second scenario, our experience of entry would be considerably different. The intensity of public occupation of the verandah would drown out the possibility of a continuous experience into the intimate part of the house. In terms of activity, the public nature of the verandah articulated by scale and volume is strengthened by its intended use. The increased public intensity now distinguishes this space from the inside. In material terms the inhabitation of this space by bodies has changed its 'porosity', the permeability of experience across the building

Img 3a & 3b: Comparison of Shade and Shadow: Porosity and Transparency 1: Form and Space.



has been reduced. The intimate "space not only recedes but fluctuates in (a) continuous activity" [xii].

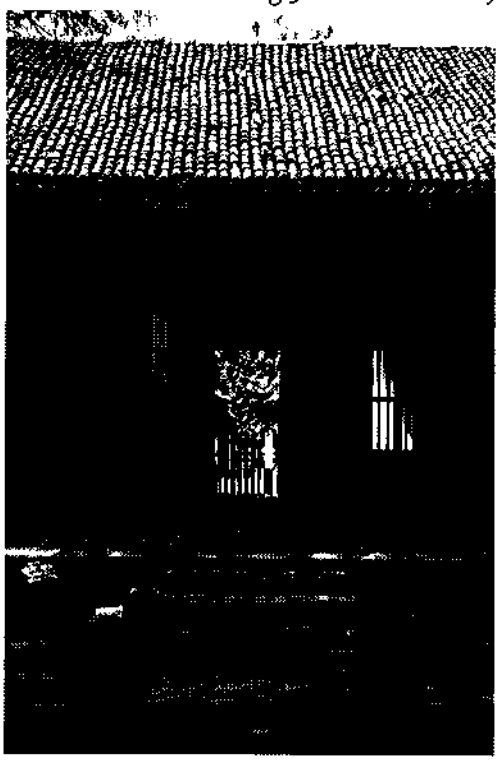
'Porosity' in material terms is defined by relationship. It is by definition the relative amount of void to material. In conceptual terms it is the relationship between surface area and volume. The greater the porosity, the greater the surface area. The greater the surface area, the greater the physical contact between a given mass/volume and its context. By controlling porosity one controls the interaction between a given volume and its environment. At Hruday Kunj this allows for an understanding of the architectural gestures that underlie the occupation of the space and allow for our fluctuating perceptions. On considering the section of the building carefully one realizes that it is the position of the wall that divides the verandah that is largely responsible for the possibility of our dual experiences.

The wall appears at first to clumsily cut across the trusses (Dwg. 4.4) with neither the structural implications of the other walls nor with integration with the roof system. It seems to be a planar separator (somewhat at odds with the articulation of the rest of the house) cutting off public from private. However as one moves across from the verandah to the courtyard it become evident that the wall ties together its own character with the character of the spaces it articulates. If one imagines moving this wall towards the river the verandah would become a linear space- more like a conventional colonial verandah. It would loose both its proportions and its volume that lend it its public character. Simultaneously, the verandah towards the court would increase in width and height, and loose its particular intensity of 'inside'. The wall engages spatially in both directions (Img. 6,7,8) emphasizing its materiality over its abstract planar quality.

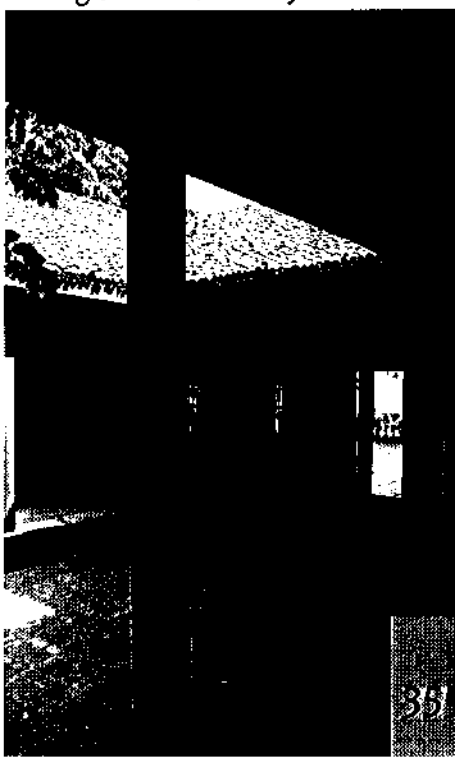
To further understand the architectural implications of 'frugality' it is useful to compare the Hruday Kunj mode of building with the mode of building used by Charles Correa, for his modern pavilion

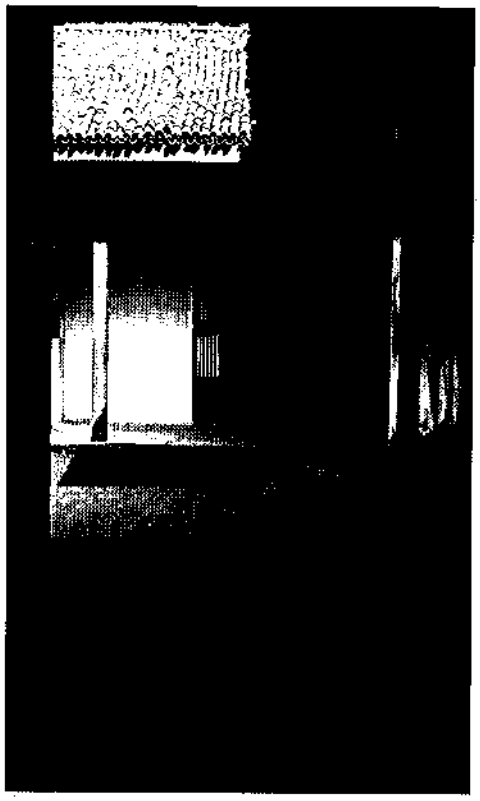
Img 4: Ashram Entry

Img 5: River side Entry

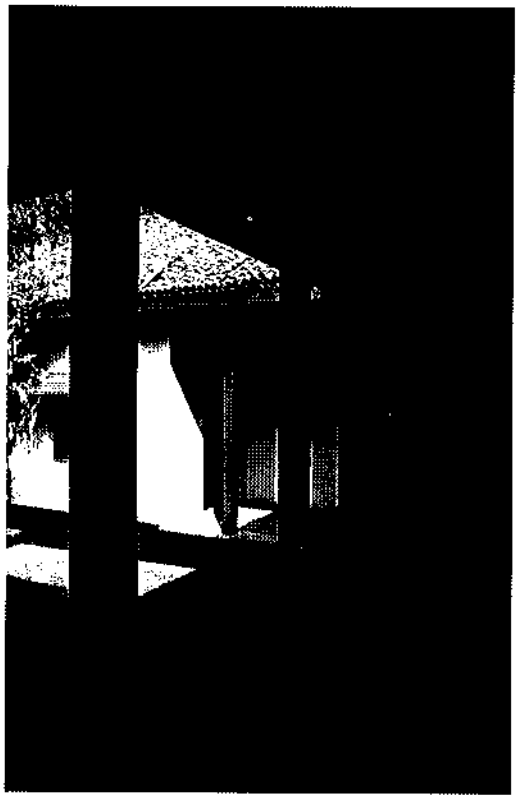


Img 6: Interior Courtyard

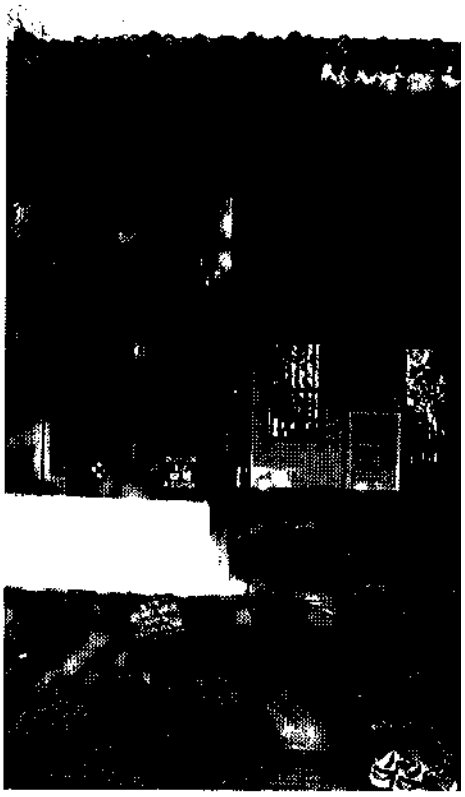




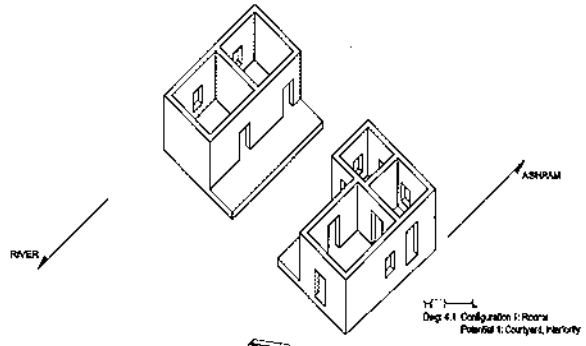
Img 7: Courtyard Intimacy



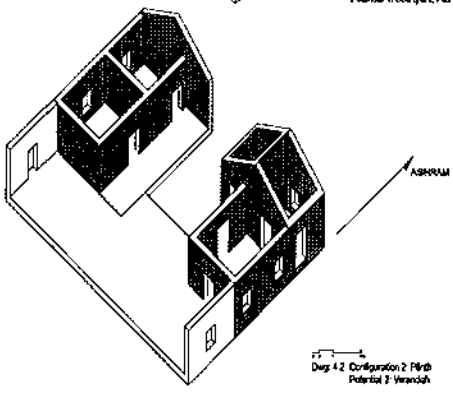
Img 8: Verandah Divided: Towards the court



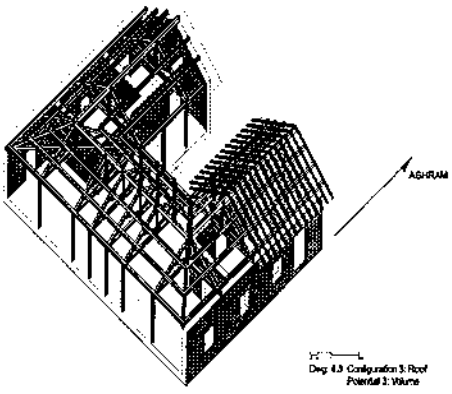
Img 9: Verandah Divided The River Entry



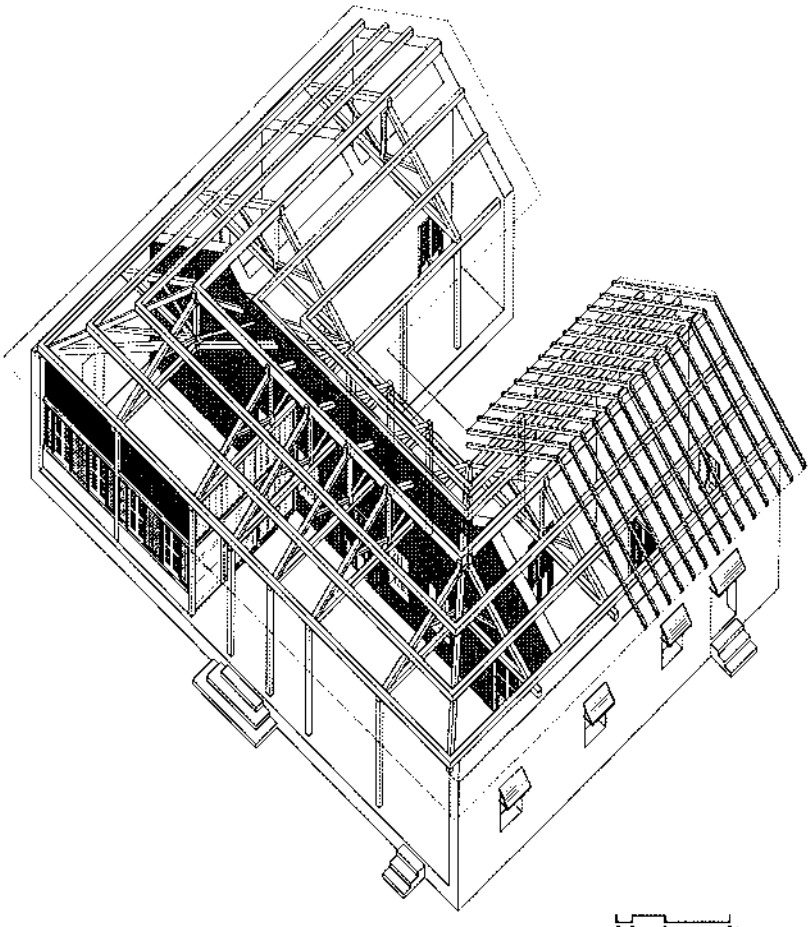
Dwg 4.1 Configuration 1: Rooms
Potential 1: Courtyard, Interiority



Dwg 4.2 Configuration 2: Plinth
Potential 2: Verandah



Dwg 4.3 Configuration 3: Roof
Potential 3: Volume



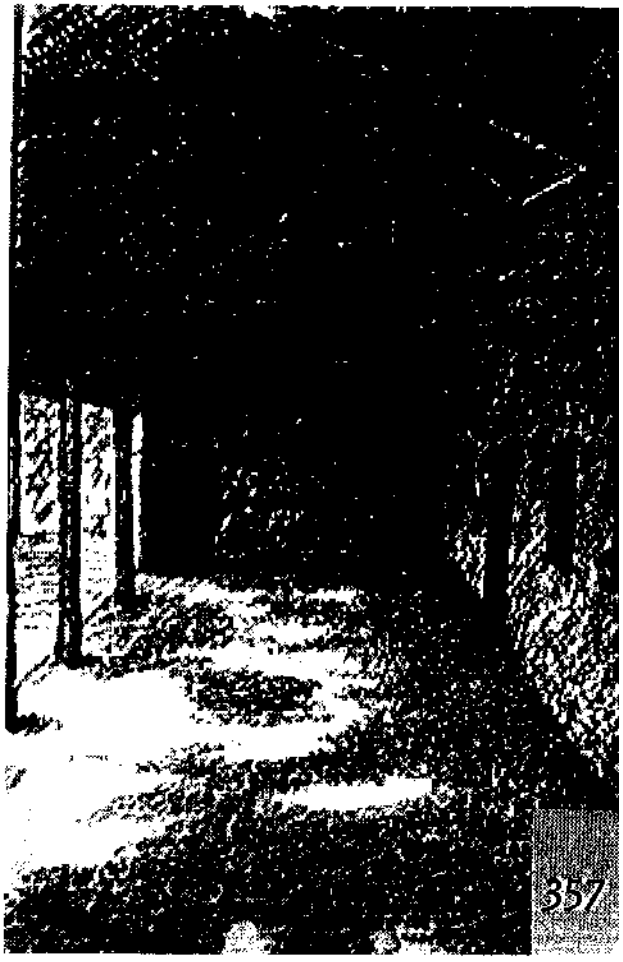
Dwg: 4.4 Configuration 4: Wall / Screen
Potential 4: Porousity

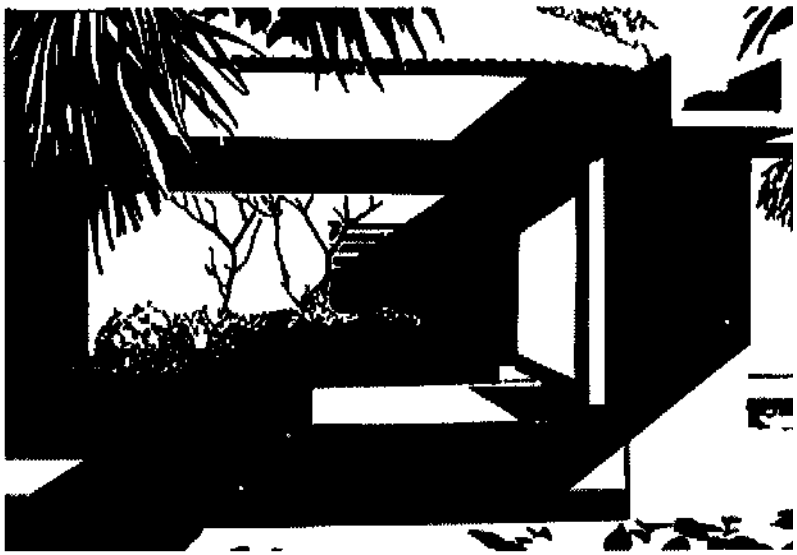
now within the same ashram. To start with; it is evident that there are two different paradigms at work (see comparative sketches Img. 3,10,11,15 & 16). In Correa's Building the structure punctuates space. There are various degrees of inside and outside spaces (Img.12) articulated by controlling transparencies across the diagonal experience of an orthogonally repetitive module (Dwg ..& Img.13) Open to sky courts, reflective pools, and the ambiguity of green spaces within and outside the building, (Img. 14) articulate a spatial richness. The experience of this building is further heightened by the differing trajectories of sight and bodily movement.

The medium of experience in this building is space, which is seen to be continuous, and is punctuated and articulated by material. At Hruday Kunj, on the other hand, the building seems part of a continuous materiality (Img 3, 10). It seems to be made from the same stuff as the trees, the foliage, the ground, and the human body, only to articulate different intensities of use under varying conditions of shade. Shade is the spatial measure of porosity (as opposed to light which is the spatial measure of transparency). It is the shade that characterizes both Gandhiji's ashrams in Ahmedabad and at Wardha. It is the shade that is an indicator of a specific, continuous, yet differentiated materiality.

In an architecture of 'frugality' there is an organized distribution of material in accordance with its substantial characteristics which leads to a simplicity of form that is free of obtrusiveness, and subtlety. Construction as labour (actions of the human body), determine the principles according to which forms grow from their contexts. Resources are close at hand. Concepts and intentions have direct physical implications. 'Configurations' are of greater importance than 'Composition'. In this paradigm one might look at architecture as simply acts of modifying the earths crust, or building with 'care for the earth'.

Img.11: Comparison of Shade and Shadow: Porosity and Transparency 3: Space and Volume



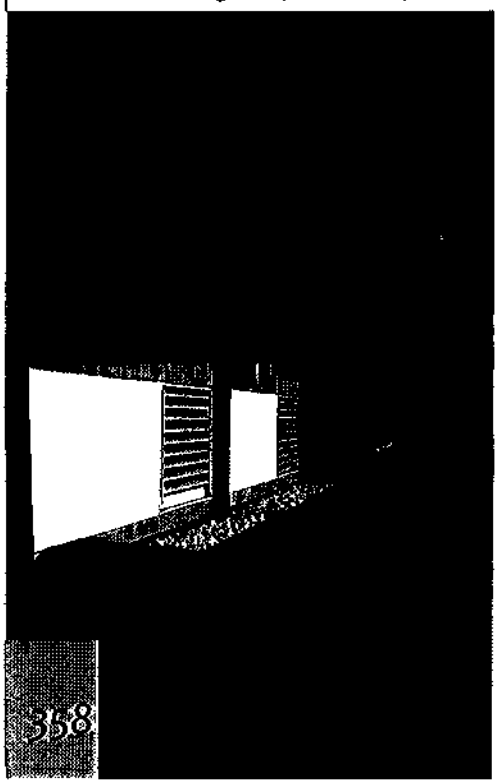


Img.10 : Comparison of Shade and Shadow: Porosity and Transparency 2: The Entrances: Material and Light

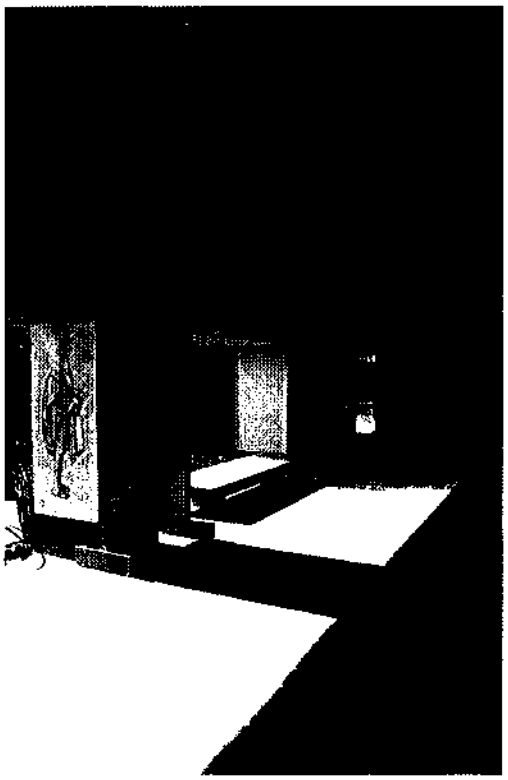
For Frank Lloyd Wright, Le Corbusier and many others Modernity brought with it an emancipation that was literal, from the ground, the cave and the practical restrictions of building with mineral material systems, and simultaneously an emancipation, which was ideological, from the immense weight of the past and the dead load of dogma. In all its forms it brought forth emancipation from 'gravity', that conceptual principle of Earth.

In a hundred years we have come a full circle. We have lived through a time in which the gravity defying endeavors of man from the skyscraper, to flight, to that absolute release from the clutches of the earth: space travel, have come to symbolize the aspirations of progress. These technological advancements all made possible by a fossil fuel based industry have as a by-product also valorized movement. Newer forms of technology have further de-materialized the world, bringing into

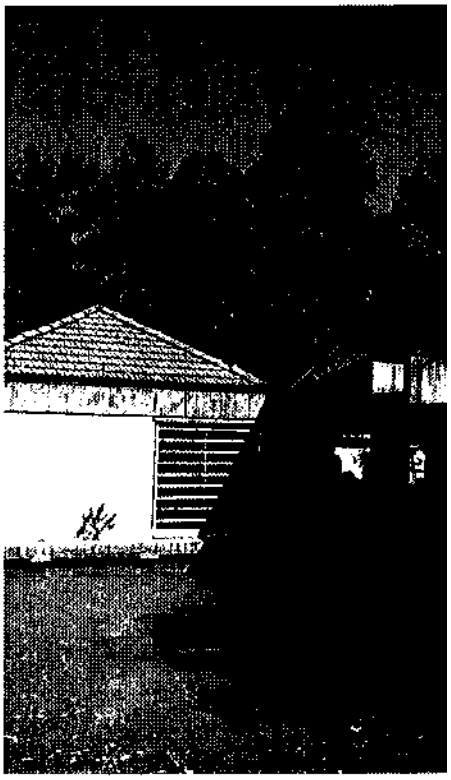
Img 12: Spatial Compostions



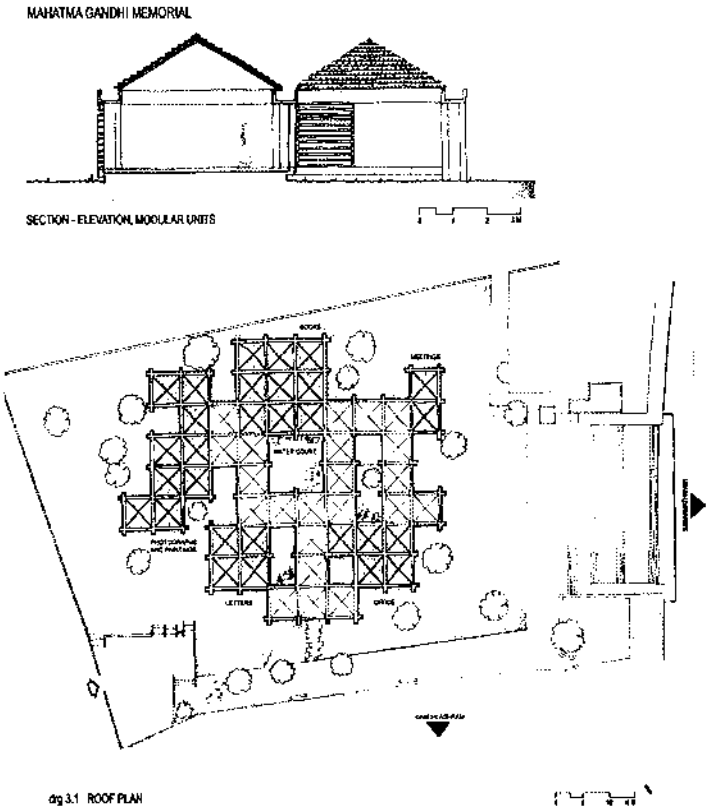
Img 13: Diagonal Vistas



Img 14: Distinction Light and Shadow



question our oldest and most deeply rooted notions of place, distance and time. Never before has man been as mobile and never before has there been such consumption of energy and resources by a single species. Our blind faith in rationality in the critical distance of objectivity has pushed us so far away that we have alienated ourselves from our environment. We have lost the ability to be empathetic to either our bodies or the earth. Our emancipation from gravity, our independence from the earth has made us oblivious of it. With the environmental carnage that has taken and is taking place, perhaps it is necessary to consider other forms of 'Modernity' that care a little more both for the environment and for a greater sense of 'our being at home in the world'.



End Notes

[i] Mand, Harpreet 2005, Alternative Modernities: Representing the Subaltern in (Post) Colonial India, Proceedings Volume of the mAAN International Conference held in Istanbul between 27-30.06.2005, Istanbul Technical University, Istanbul. The author is quoting Partha Chatterjee who is commenting on the difference between the reasons and desires of a European Modernity expressed by Kant, and those of Indian Modernity. Pg 83.

[ii] Ibid. pg 81

[iii] ibid pg. 79

[iv] Ibid, pg. 83

[v] Ibid pg. 81

[vi] Wilhelm Worringer first used the word 'Empathy' in his Doctoral Thesis and his best known work 'Abstraction and Empathy'. However Worringer as a Art historian uses the word in relation to 'Realism' and applies it to European Art from the Renaissance to the beginning of the

modern. The usage of the word differs here and is closer to the usage by Juhani Pallasmaa when he says, "...the cancerous spread of superficial architectural imagery today, devoid of tectonic logic and the sense of materiality and empathy...", The Eyes of the Skin, Pg 24

[vii] Deluze, Giles & Guattari, Felix, Trans. Masumi, Brian, 1987, A Thousand Plateaus, Capitalism and Schizophrenia, Continuum International Publishing Group, 2004. Pg. 550

[viii] Pallasmaa Juhani, 1996, The Eyes of the Skin, Architecture and the Senses, Wiley Academy, John Wiley and Sons Ltd. West Sussex, 2005. Pg.46.

[ix] Bhatia Gautam, 1991, Laurie Baker, Life, Works & Writings. Penguin Books, New Delhi, 1994.

[x] Rowe, Colin & Slutsky, Robert, 1963, Transparency, Literal and Phenomenal, Perspecta Volume 8, pg. 45-54. Yale School of Architecture.

[ix] Forty, Adrian, 2000, Words and Buildings, A Vocabulary of Modern Architecture. Thames and Hudson, London 2004. Pg. 288. In his Essay on transparency, Forty adds a third type of 'transparency' to the literal and the phenomenal as described by Rowe and Slutsky's. Forty quotes Susan Sontag to introduce what he terms as 'Transparency of Meaning'.

[xii] Quoted by Rowe & Slutsky, from 'The Language of Vision' by Gyorgy Kepes. Rowe and Slutsky use the quote to open their discussion on Phenomenal Transparency, which as Adrain Forty paraphrases is the apparent space between objects. It is necessary to point out the differences with what is being discussed as 'Porosity'. Phenomenal Transparency relates to the spatial devices used by Cubist painting and as a concept develops from visual apprehension. This apprehension in turn is dependant on the readability of objects and the spaces between them.

LIST OF PRESENTERS

1. **Nina Carina,** Tarumanagara University, Indonesia

2. **Prem Chandavarkar,** Chandavarkar & Thacker Architects, Bangalore, India

3. **Madhura Yadav,** School of Architecture and Planning, New Delhi, India

4. **Ali Afshar,** Department of Architecture, University Putra Malaysia, Malaysia

5. **Nishan Rasanga Wijetunge,** School of Architecture, Design and the Built Environment, Nottingham Trent University, UK

6. **Lintu Tulistyantoro,** Lecturer, Interior Design Department, Petra Christian University, Indonesia

7. **Rachel Kallus,** Faculty of Architecture and Town Planning, Haifa 32000, Israel

8. **Titien Saraswati,** Duta Wacana Christian University, Yogyakarta, Indonesia

9. **Krystina Kaza,** Unitec New Zealand School of Architecture, New Zealand

10. **Kristine Ann A. Muñoz,** Mapua, Institute of Technology, Philippines

11. **Gauri Bharat,** Faculty of Acrhitecture, CEPT University, Ahmedabad, India

12. **Remy Leblanc,** Victoria University of Wellington, School of Architecture, New Zealand

13. **Antonello Monsù Scolaro,** Università degli Studi di Sassari, Facoltà di Architettura di Alghero, Italy

14. **Kemas Ridwan Kurniawan,** Department of Architecture, Faculty of Engineering, University of Indonesia, Depok, Indonesia.

15. **Dr B S Bhooshan, Architect,** Mysore, India

16. **Manoj Kumar Kini,** Lecturer, CET, India.

17. **Sachin Soni**, Lecturer, Faculty of Architecture, CEPT University, Ahmedabad, India.

18. **V.Balasubramanian**, Associate Professor, Department of Architecure, Thiagarajar college of Engineering, Madurai, Tamil Nadu, India.

19. **Dr. Ranjith Dayaratne**, Assistant Professor of Architecture, University of Bahrain, Bahrain.

20. **Amirhosein Ghaffarian Hoseini**, Department of Architecture, Faculty of Design and Architecture, University Putra Malaysia, Malaysia

21. **Lt.Cdr. Somasiri Devendra**, SLN(Rtd.), ICOMOS International Committee on the Underwater Cultural Heritage (ICUCH). Member, Advisory Board to the Director-General, Department of Archaeology, Sri Lanka.

22. **Dr. Souheil El-Masri**, Director, Architectural Design, Gulf House Engineering – Kingdom of Bahrain.

23. **Milinda Pathiraja**, Faculty of Architecture, Building and Planning, The University of Melbourne, Australia.

24. **Mamdouh Mohamed Sakr**, The Prince's School of Traditional Arts, Egypt.

25. **D.P.Chandrasekara**, Senior Lecturer, Department of Architecture, University of Moratuwa, Sri Lanka.

26. **Henry H Loupias**, Faculty of Arts and Letters, Pasundan University, Indonesia.

27. **Marcus Shaffer,** Assistant Professor, Department of Architecture, The Stuckeman School of Architecture and Landscape Architecture, The Pennsylvania State University, USA.

28. **Riyaz Tayyibji,** Lecturer, Faculty of Architecture, CEPT University, Ahmedabad, India.