



International Journal on Emerging Technologies (Special Issue-ICTOAD-2017) 8(1): 49-53(2017)
(Published by Research Trend, Website: www.researchtrend.net)

ISSN No. (Print) : 0975-8364
ISSN No. (Online) : 2249-3255

Process, Material and Method in Architecture - Analysis of Vernacular and Current Building Practices

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(Received 22 March, 2017 Accepted 25 April, 2017)

(Published by Research Trend, Website: www.researchtrend.net)

ABSTRACT: The paper emphasizes the link between processes of vernacular and current architecture practices. With examples in Bangalore, the paper demonstrates how process and making is important in vernacular and current design practices. How vernacular is not stagnant but is manifested in the current architecture practices through processes of making. The paper intends to investigate the importance and link between vernacular and current architecture forms by analyzing examples of houses and other buildings from late 19th century and setting them against houses currently designed by architects. The paper will look at the tectonics and process of creation that were employed in vernacular buildings in Bangalore region. The vernacular is always associated with something that is not 'conventional'. That which is not scalable or usable in current practices of architecture and even looked down by designers as just something, which has a visual charm but nothing more. On the contrary there are interesting tactile and tectonic processes that provide a basis for architectural design practices today. The area of study is Bangalore. Bangalore city has houses, which use earth, stone, brick and wood and employ traditional methods of construction in the 19th century. These houses are between 100 to 150 years old. These examples illustrate the vernacular processes in the region. The examples juxtaposed against the houses built by architects in the last decade, which use comparable material and ecological concepts show an exciting process overlap between the two. Vernacular processes give the current disarrayed design methodologies a strong toolset, which is investigated in the paper.

Keywords: Vernacular; Process; Current architecture practice; Bangalore

I. DEFINING VERNACULAR

The etymology of Vernacular comes from the Latin word 'vernaculus' that means native. Vernacular is native, built by people, communities with available resources [3]. Vernacular can also be defined as buildings built with local know-how, refined over generations. In the context of India this includes houses and places of residence, which have always doubled up as space for life stock, community activities and even schools. As Paul Oliver suggests "Although changes over time are to be seen in most building traditions, the persistence of distinct and distinctive building types and forms, of material resources and methods of construction, and of space use and associated values, is undeniable" [3]. These qualities of vernacular make it

very relevant in today's context, to provide the current practice a toolset for design.

II. VERNACULAR AND CURRENT PROCESSES

As Juhani Pallasma (2012) suggests, "architecture should seek deep and permanent essences of human existence instead of obsessively trying to generate a passing experience of newness" [4]. An embodiment of the spirit of tradition becomes important for consequential creativity. Vernacular and the processes of building employed in it can create a sense of real not extreme individuality. Vernacular, many a times is valued just for its visual appeal and the gush it arises because of its rustic and native nature but the real learning and appeal would be in the material, processes and methods it adopts to produce an existential quality, which newness may lack.

V. HOUSES OF DEVANAHALLI

Devanahalli fort area is unique since it is fortified and the setting of these houses remains constant for study. It is useful to examine the mechanism by which a link between the life style and built form is achieved in vernacular architecture [10].

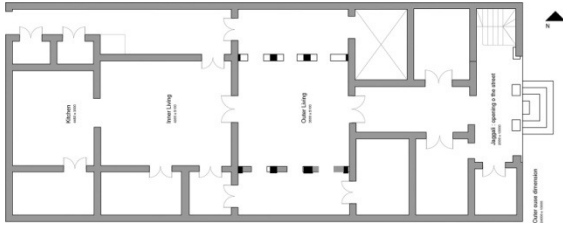


Fig. 3. Typical plan of vernacular houses in Devanahalli with central raised living spaces.



Fig. 4. Typical Elevations of the Devanahalli region houses.

VI. TYPOLOGY, MATERIAL AND TECHNIQUE

The social environment shapes the typology of these house. The houses sit in a narrow lane with a Jaggali (a front porch that is elevated for sitting and conversing with people walking on the street at eye level.). The plan of the houses is modest with the central largest room higher to bring in light and ventilation, in a site, which is very tight and has no chance of having openings on both the sides. The typology characterizes outer and inner living spaces, which gives hierarchy to the use of spaces by guests and inhabitants. The typology has come about with regard to social life of the inhabitants. Many of the homes have courtyards and invert looking spaces, which is necessary in the climate that it's situated in. Like the present tight urban context, even at this site the adjacent houses are attached and there is no possibility to get light from the sides but raising the inner spaces and providing ventilators have arrived at the solution. A court surrounded by rooms is found in these houses and in most tropical regions. It serves to provide, light, ventilation and privacy in an inward looking plan while doubling up as circulation

space. The roof structure in most of these houses dominate the form.



Fig. 5. Interior courtyard of a vernacular house in Bangalore.



Fig. 6. Bamboo ceiling of a 'Jaggali'.

The structures are built with locally available granite and wood. The flooring is red oxide with simple patterns to give distinctiveness. Parts of roof are madras terraces, which as the name suggests has been brought from old Madras region in Tamilnadu. The use of Madras terrace is a technique of roofing with bricks, terracotta tiles and lime primarily. This kind of room used local skills and material and also some binders, which were made with local fruits.

Some of these houses have used mud roofs with bamboo as reinforcement. Some smaller houses in the area also have mud roofs with bamboo framework. The Bengal terrace, a similar to the Madras terrace technique is interestingly used in many buildings built and commissioned by the British in the 19th century. The St. Andrew's Church on Cubbon road is one such example. Bangalore sees a mix of vernacular and colonial influences in the architecture on 19th century. The 19th century witnessed the industrial revolution and owing to this the mechanization and standardization made quick changes in processes too. Mechanization changed the shared traditions of building practices of the vernacular [11]. This was happening in Bangalore too. The introduction of steel and mechanized production of construction material such as tiles and bricks changed the making of architecture. After the sustainability and ecological architecture movement gained momentum in Bangalore and many other urban centers of the world, the architects have consciously looked at vernacular for solutions. Bangalore has seen constant influence of global trends in construction, which most times are isolated, and not in tune to the real problems that architecture should reflect and solve. In the last few decades' architects have tried to adopt vernacular methods and processes to provide for a more sustainable use of already depleting resources. The techniques are many times adapted to the present time, available resources and technology. The vernacular houses use stone and mud as the two primary materials for walls and roof. Today many architects use the compressed soil block technology, which uses earth blocks compressed instead of burning it. The soil is mixed with a small amount of cement for higher performance. Centre for ASTRA in the Indian Institute of Science developed these blocks in 1970s in Bangalore. The panel roofs are also used in many recent houses to create roofing systems, which use much lesser cement and steel. The framework for these panels is now made with fabricated steel unlike wooden molds used earlier. The useful traditional techniques are adapted with contemporary forms. The techniques and processes form the essence of these sustainable buildings while reinterpreting and providing to the new ways of living.



Fig. 7. A modern house with rammed earth and Jack arches.



Fig. 8. A contemporary house built in Bangalore with Stabilized compressed earth blocks, Jack arches and rammed earth.



Fig. 9. Early 20th century Madras terrace exposed roof.



Fig. 10. A house under construction in Bangalore, designed by local architects, using Jackarche technique with steel.

VII. CONCLUSION

To learn from vernacular built forms, it is crucial to focus on the processes and traditions of building. Buildings built by communities, people and families always considered the context and adapted the techniques to the available resources. There is a discrete link between vernacular and current practices of building. The present design practices adapt and take from vernacular processes. The material and context changes many a time though. Vernacular is not obsolete but continuously changes and adapts even in mainstream processes in Bangalore. The building processes provide for a useful toolset for architectural thought. The principles of design are seldom formed by looking at vernacular buildings in academia or in practice in India. The richness and sensibility of vernacular could be readily engaged in design concepts today, instead of borrowing from very different climatic regions and ideologies, which may have little meaning in this context. There is an embedded knowledge in the vernacular buildings around us and this could provide a basis for design concepts in the present. Bangalore Architects and Engineers, in the last three decades have attempted to learn and integrate from vernacular

building practices in smaller attempts, but processes and 'making' still remain to be actively pursued as a design methodology.

REFERENCES

- [1]. Juhani Pallasmaa, "The Eyes of the skin", John Wiley and sons, England, 2005.
- [2]. Mamun Rashida and Dilshad Rahat Ara, "Modernity in tradition: Reflections on building design and technology in the Asian vernacular", Elsevier B.V. 2015.
- [3]. Paul Oliver, "Built to meet needs - Cultural Issues in vernacular architecture", Architectural press, 2006.
- [4]. Juhani Pallasmaa, "Newness, Tradition and Identity: Existential Context and Meaning in Architecture", 2012.
- [5]. T S Elliot, 'Tradition and Individual Talent' (1929), New York: Alfred A. Knopf, 1921.
- [6] Paul Oliver, "Built to meet needs - Cultural Issues in vernacular architecture", Architectural press, 2006.
- [7]. Kenneth Frampton and John Cava. 1995. *Studies in Tectonic Culture: The Poetics of Construction in Nineteenth and Twentieth century Architecture*, Chicago, Graham Foundation for Advanced Studies in the Fine Arts, 1995.
- [8]. Marcel Vellinga, 2006. *Inventiveness of tradition: Vernacular Architecture and the future. Perspectives of vernacular architecture*, Vol. 13, no 2, pg 115-128
- [9]. Maulden Robert, "Tectonics in Architecture." Masters Thesis, MIT, 1986
- [10]. Subhas C. Basu and K. S. Jagadish, "Vernacular Architecture in Karnataka", Seminar Art and Life, Indian Institute of Advanced Study, Simla, 1988.
- [11]. Peter Guillery, "Built from Below: British Architecture and the Vernacular", Oxon: Routledge, 2001.

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