Sustainability in Vernacular Architecture: Laurie Baker and Hassan Fathy's Approach

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ABSTRACT

The age of climate change is threatening the human welfare and their environment globally. The energy resources are depleting day by day. Being the large consumer of the energy resources, the contribution to the climate change is majorly by the building industry. Numerous researches and thoughts have been developed to find the solution by keeping in mind the conventional building techniques which are taking place in urban areas. But the suburban and rural areas are mostly not taken care, which is major part of any developing country. For a sustainable development of built environment, minimization of input energy and low energy intensive material is an essential part. The successful coexistence of nature and built environment in vernacular architecture has proved that a sustainable and environmental friendly development is also achievable through the indigenous quality of a region. There are Architects, at least few in numbers, who are seeking and learning from the traditional societies and applying the vernacular principles to their architectural practices. But there approach is remarkable, because of their impetus they had to apply against the prevailing conventional architecture of their time. Two architects, Hassan Fathy from Egypt and Laurie Baker from India sought the strong relation of man and nature in their works and provided a traditional solution for the sustainable development in present time. In this paper the author shall discuss the approaches of these two architects which in turn found them a role model for the sustainable development through traditional architecture.

Key Words: - Vernacular architecture, Sustainable architecture, Laurie Baker, Hassan Fathy.

Introduction

Since its inception the word 'sustainable' had been used in its general meaning the ability to be sustained, supported, upheld, or confirmed' or 'able to be maintained at a

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certain rate or level.' But it engendered a specific and contextual meaning derived mainly from its definition by the United Nations Brundtland Commission in 1987. According to this definition," "*those paths of social, economic and political progress that meet the needs of the present without compromising the ability of future generations to meet their own needs* (Brundtland, Gro Harlem, 1987). The commission recommends the social, economical and environmental development of the globe and discusses urban challenges. Its ekistics part, in detail, was incorporated at a later stage in the form of one chapter of Agenda 21- United Nations Conference on Environment & Development held in Rio de Janeiro, Brazil in 1992. It conveys the promotion of sustainable human settlement development with special attention to indigenous people. The chapter seven of Agenda-21 further suggests to strengthen indigenous building material industry, to enhance the utilization of local materials by construction sector, to promote labor intensive construction and self housing buildings. A review of implementation of Agenda-21 in 2012 by Stakeholder Forum for a Sustainable Future signals a few progresses in this area in two decades.

The indigenous settlements were studied a lot in the light of history and anthropology but the aspects of materials and technology were negligible. Art historians illustrated it as a part of art history, ornamentation and decoration while Architectural Historians pulled them up to forms, scale and proportions only. A very few practicing architects, having insight of application of the indigenous concepts to the contemporary world, there work was generally blamed as historicism. The aspects of sustainability through indigenous architecture, is the prime concern now a days as an alternative to the conventional approaches. However its early example can be seen in the work of Hassan Fathy, an Egyptian architect. He was an early thinker of impact of built masses over environment. His works prove a sustainable approach for the major part of the population. However, Fathy's architecture, by some critics, was seen only as a safeguard of tradition and culture and a mere nationalist expression against western power (Ghirardo, 1996). Although the indigenous sustainable architecture cannot be separated from the culture in which it was developed. And indigenous buildings due to culture based designing results into a regional and economical aesthetic. According to Thomas and Trever (2007), "*Architecture and urban design need to be located in an environmental, historical and cultural context. The environmental crisis creates an opportunity for a varied architecture which responds to site, setting and context.*"

Modern Vs Traditional Architecture

The Modern architecture as a whole rests over the notion of dissatisfaction with the past, rapid mechanization and emergence of new materials and techniques. The rationality of machine design was seen in the design of houses as could be evidenced with Le Corbusier's famous saying "a house is a machine for living in". In contrast to Corbusier's approach Fathy (1986). says, "*A machine is independent of its environment. It is little affected by climate and not at all by society.*" In the most part of the world the legacy of architectural tradition was climate responsive. However it was marginalized under the influence of modern architecture mainly due to colonial interval in most of the countries. After independence these countries attempted to seek their national identity though a discontinuity in architectural legacy and disruption of technological development under the contemporary socio economic situation lead them to a chaos. In nineties an approach to sustainability evoked the simple technologies of indigenous architecture and regional historical buildings as a source of inspiration. In his previous work, author has also discussed the different elements from Mughal buildings which may inspire designers for sustainable development in the contemporary world (Ali, 2012).

Fathy's Approach

Hassan Fathy, an Egyptian architect, born and brought up in an elite family of Alexandria at the dawn of twentieth century. Through his sensitivity towards form and

space, Fathy made us visible a built environment which was already present around us. Fathy's architecture embraces the human culture and its history. The austerity and simplicity of his work sometimes mislead the observer, however the harmony and balance of the form is an expression of his creative intellect. And his creative phenomenon is much more than a vernacularism. Due to shortage of steel and cement during World War II, he was prompted to learn from indigenous buildings which could be built without these materials and new local-modern architecture was produced with clay that was based on vernacular practices (Perera, 2013). The excessive repetition of limited visual elements in his projects can be seen as his quality of imaginative excel. He writes "*If the architect does not respect the God-made environment, be commits a sin against the God. God-made environment is the landscape; the atmosphere, the flora, the fauna, and the human beings who live in this environment. In this God-made environment there is nothing which is inharmonious. If we become one with nature, beauty is defined as it is. Beauty, then, is obtained when form consider the forces that are working on it. It is only when man has ignored the environment and has been cut off from nature that problems arise. We must not distort any of the forces in nature* "(Steele, 1992).

Baker's Approach

Laurie Baker had worked in India for about a half century. His projects range from residences to churches and from institutions to hospitals. His designs are the response to the specific needs of individuals, local climate and traditions. In his approach he rejected the idea of universality of specific set of designs and standard materials. He put emphasis over the user's actual needs culture and lifestyle which in turn reflected in its architecture. Baker's architecture as a result is a true reaction to the climate of region, and available materials. His approach to architecture was influenced by his long stay at Pithoragarh district and guided by Gandhian philosophy, which he directly extracted from Mahatma Gandhi during his confrontation with him in the early days of his professional life. Gandhi guided him regarding design of a village house that the construction material should be procured only within five mile of radius. After studying in England, on a mission to India, to convert the refugee centre for Leprosy patients in to hospitals with minimum expenditure, baker worked throughout the country. From 1945 to 1948 he worked with an organization and later he settled in Pithoragarh for next sixteen years. During his stay at Pithoragarh he realized the importance of appropriate and intermediate technology which in his view could be learned from local people. Baker left Pithiragarh in 1963 and shifted to a village Vokaman of central Kerala and later he settled in Trivandrum. Modern technologies were supposed to provide a solution of housing in India and to improve the standard of life for everybody. The rapid industrialization is the main cause of cause of growth of demand of housing. In India, the government attempted to improve the situation but unable to achieve the demand for houses. Industrial economy emphasized over the improvement of living conditions instead of a humanistic concerned. It evolved a new kind of architecture which was not in any way a continuation of tradition and led a chaos for the inhabitants. Baker's work in India is a contemporary vernacular, and parallel to the Hassan Fathy's work in Egypt and John Turner in Latin America. Baker's work is an innovation without imitating the traditional style. His approach to exploit new building materials in context with local climate and tradition gave a new dimension to his architecture. For example concrete as a material for roofing with terracotta tiles and brick walls with unusual bond is a compromise between tradition and modern design techniques. In contrast to the architectural practices in India, Baker's work shows a continuation of past at least in a region. The challenges of housing demands in the country provoke to re evaluate the present technology adopted and its relation with the life styles of the people. Modern architecture in India is a poor imitation of the west in terms of forms and technology. The industrial revolution and mechanization of materials have influenced the global architecture and set a new definition of aesthetics. The modern building in India lack contextual unity with the past. History of architecture is adopted by

some revivalist as a dictionary of elements instead of assimilation with true meaning. Baker used historical elements but not as decorative elements but with their true meaning of spatial and climatic contexts. As a result, baker's architecture is a reflection of cultural and traditional continuity by using the elements with their true meanings likes window jaali, courtyard and screened walls. These elements which are the need of a region not only cop up with the climate but also reflect their life style and it cannot be considered merely an iconic architecture by Baker or Fathy.

Conclusion

Fathy considered vernacular architecture as a paradigm but with a rational approach. His approach to the design cannot be considered only a historicity, and a safeguard of tradition. In his projects, every single feature was given a thought in terms of response to climate, orientation, material as thermal mass, openings and form was all play an important role regulating temperature and ventilation inside the building in a hot and humid region. He claimed that the indigenous architecture of a place embodies the sustainable elements. These elements on one hand respond to the environment and on the hand they evoke the cultural continuity of a place.

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