Vernacular Architecture in India : A Solution to Modern Architecture Aberrations

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ABSTRACT

The contemporary modern architecture that is practiced over the world is based on modern notions of housing. Exhibiting luxurious and lavish lifestyle. This model of architecture is being imitated all over the globe creating deep anomalies between countries and within countries. It marginalizes the local ecology and already existing knowledge of architectural style, popularly known as "vernacular architecture". The essay seeks to problematize the mindless imitation of hegemonic architectural paradigm which creates major challenges interms of architectural sustainability and the longevity. It tries to uncover the paradox of luxurious and lavish lifestyle through their architectural impetus. In fact, these architectural setting enhances the ecological footprint and are not energy efficient in their functioning. The essay analyzes the structures of vernacular architecture through political economy approach and what support does the vernacular architecture got from policy makers by scrutinizing policy documents. These Vernacular architecture in themselves signifies diversity. It is not a homogenous category of architecture. They are dynamic and adapting in nature. It argues that vernacular architecture still offers itself as a viable option of housing in rural setup and offers design solutions. Its features acts as a complementary agent in fixing the anomalies created by modern architecture which could be strengthened and explored in urban landscape through policy intervention.

Key Words : Vernacular architecture, Modern architecture, Knowledge, Sustainability, Ecology, Policy, Ecological footprint, Unsustainability

INTRODUCTION

Vernacular architecture is a type of architecture has been in practice since ages. These types of architectures are locally developed. In response to the local needs and local demands. Hence, they are attributed to the local knowledge systems. This type of architecture gives priority to local requirements and utilizes traditional local material (Niroumand *et al.*, 2017). It has been defined variously by different scholars. Vernacular architecture is the product of centuries of experience of the masses habitable under various climatic conditions around the world (Oliver, 1997). It is the architecture of the people, by the people and for the people. Anything that has been in existence since ages cannot be rigid or fixed in nature. As the changing time and space always require changing approaches to deal with changing circumstances. The vernacular architecture has been used for the indigenous as well as for the traditional architecture (Kawathekar *et al.*, 2004). This

type of architecture is driven by the local resources available in any region. The availability factor of any resource is the most crucial factor of vernacular architecture. This factor leads to the differentiation in the style of vernacular architecture of various regions. These system of architectural design is in itself are product of the knowledge system. Vernacular architecture has been a way of life which suited social, cultural and micro-climatic conditions of a specific region. As they are the product of the past they contain a vast repository of knowledge. The knowledge that them asses have for many centuries. Thus, it is a type of architecture which is based on local needs and material used in construction signifies the area's tradition (Khandekar *et al.,* 2017). It is sometimes associated to orthodoxy, conservatism and primitive mental frame work. However, this is not the case. As it was the product of the local masses, the common masses used to rectify the mistakes overtime. It is far above the suggested notions of primitive design which lacks intelligent thought (Wahid, 2012). This gives the aspect of transformation to the vernacular architecture. Fulfilling its requirement and replenishing it with newness of mindsets and practices. Thus, it evolves overtime which reduces its fixation, changing continuously, adapting with the cultural needs and the immediate surroundings. It has been used by tribal, non-tribal and other since ages, responding to the needs of the local masses based on local environment (Dhote *et al.,* 2012). It has all the attributes of that region or the region where it was based. It was not only the structure under which people used to dwell. It was also the space for recreational activities. It was completely systematized according to the gender roles, domestic routine, the economy, family type, food and lifestyle habit, region and belief system, symbolism, tradition and transmission, environmental values, aesthetic values and other. It was a kind of architecture which was continuously living and dynamically sustaining itself to the changing needs of the time based on ecological value and requirements of that place. These architectural styles evolved overtime by the notion of feed-back mechanism which has its roots in the trial and error method framework (Singh *et al.*, 2011). This system of knowledge is in itself is scientific knowledge system. As there is special attention given to the site, the climate, the design and the construction a teach and every level of construction (Singh *et al.*, 2011). Since the climate is the major source of it. Climatic pre-conditions of the area was the main driving force which affected the structures or the architecture of the buildings (Gautam, 2008). It is the form of architecture which is informal functional structure, mostly situated in rural areas, built using local materials and structured to meet the basic needs of the masses (Khandekar *et al.*, 2017) it is the 'architecture of the masses'. However, in these changing times and the modern necessities of the people. These structures are rapidly losing their presence. They are under the threat of collapsing. We can even say that these knowledge systems of architecture are on the verge of extinction. In the study of these knowledge systems, the institutional response has been very bleak. The notion of vernacular architecture has been relegated to a non-subject matter and which is supposedly considered an unnecessary hindrance to the agenda of modernism (Desai, 2010). Since the wave of the modernist outlook towards life started, there has been a shift inattention away from these systems. In the contemporary times, the focus of the institutional study is on the modern architecture which resulted in homogenizing the study matter, lacking heterogeneity (Desai, 2010). They have been changed with reforms being made under the traditional cultural habits and the value system of the residents (Oliver, 1989). It is increasingly loosening its sheen, its importance, and its holistic nature. It is on the margins of being extinct, as it has been abandoned by the local people to follow the so-called 'modern conventional architectural style' (Chandel *et al.,* 2016). With the emergence of the modern times and homogenizing tendencies that are hovering over the globe, it is losing its relevance. The emergence of modern technology has negatively affected and gradually eroded our

communities' knowledge based on traditional construction skills. This paper tries to evaluate the contemporary relevance of the study of vernacular architecture. This paper will try to cover the aspects of design issues in the modern urban architecture. Assessing the energy consumption that these modern architectural designs requires. Through focusing the ecological footprint impression of these buildings, it would also be scrutinized through the policy formulation and studying the design of policies of the state. Whether they are being made by the state in order to protect these systems of knowledge or not. In the later sections of this paper, it would be argued that the senotions of vernacular architecture and its principles are not homogeneous in character rather they have been dynamic in character. Lastly what is needed is to revisit these knowledge and implement these already existing techniques.

Design issues in modern architecture:

The growth in the Indian housing sector is seeing a phenomenal rise. Indian housing sector growth has even surpassed the average rate of growth around the globe. The Indian real estate sector is growing at the rate of 9.2% compared to the world's average of 5.2% (Singh *et al.*, 2011). This construction sector which includes the housing and other sectors of constructions constitute the real estate sector. This construction phenomenon is taking place at both the urban areas and rural landscape. Since, the growth of liberalization. The Industrial culture is rapidly expanding and there is an increase in each sector's growth rate. It results in migration from the rural to the urban areas. This phenomenon of migration has led to the growth of real estate sector in most of the urban areas. To match the demand of the ever increasing residential, commercial and other constructed structures. The builders are shifting towards chemically produced products and material resources which are not locally located. To fill this rapid increasing demand, the builders are shifting towards the materials which is available all through out the year, which basically is of non- natural sources. The prospect of fulfilling the demand, the structures that are built in urban areas are leading to the Design issues in the structural design of the architecture. These structural design faults are ultimately resulting in other issues related to broader sustainability issues like poor ventilation, poor usage of natural day light, non-natural material sources and other things. In these contemporary times, the architecture is completely depended on artificial means of cooling-heating, even if the outside conditions are pleasant (Chandel *et al.*, 2016). Modern buildings are poorly designed for the existing situation of the climate resulting in extensive us age of the electrical equipment and energy to maintain the normal thermal comfort (Singh *et al.*, 2009). These issues not only emerges from the rapidly demand fill scenario. These issues are also emerging because of the poor skill level development of the workers of the modern architectural design. As the demand requires urgent supply, the builders tends to compromise on the aspects to skilled labor in the modern architecture buildings. This results in hiring the local unskilled labor who are not trained in skills required to construct properly structured building. In contrast to this, the Vernacular architecture which is considered to be primitive, considered all the factors of comfort while building the structure. The builders of these architectural designs have the knowledge of the traditional design structures. The principle that governs the structure of these Vernacular architecture ranges from Vastu Shastra (Direction based energy science), Vastu purusha mandala (where the structure of the building is considered to be different parts on the human body, each having their own value, each of them represented certain value and accordingly rooms were made to have the energy associated with different body parts), as well as the Madala science (Sarkar, 2015). These designs plans are not only sustainable, infact it reduce the impact of natural hazards like the earthquake. The Vernacular

architecture style of Rajasthan which is Bhonga is constructed in the circular manner to negate the impacts of earthquake (Sarkar, 2015). This illustratest hat these vernacular architecture were

not mindless reconstruction of structures of the past. Instead, it embody in themselves the complete knowledge of the past in designing the structures. They are not only the structures those have structural design knowledge, they also embody in themselves the notions of living in harmony with the nature. In India, the architectural design are governed by the principles of the National Building Code of India. The National Building Code of India acts as the nodal agency which portrays the guidelines to be followed while constructing the design. These guidelines acts as the torch-bearer for designing the building, it holistically covers all the aspects that comes under the process of designing. In Section 5 and Section 6 of the National Building Code, 2016, it covers the aspects of Materials to be used for construction and the structural designs. It highlights that structural designs are made by keeping in mind the threat to the building from the natural hazards such as earthquake, which are signifies by the earthquake zonation and wind impact on structures (National Building Code, 2016). These things are considered while making the vernacular architecture for instance the design of Bhonga of Rajasthan is made to withstand the earthquake and reduce the impact of heavy winds on the structures of the house.

The issue of sustainability:

The issue of sustainability has become the pressing need of the time. The issues related to the sustainability forms the core of any building structure. Without sustainability each and everything is bound to fail. As the things used in the Vernacular architecture are locally available, which need not require the material elements from different regions. This feature of local availability adds more value to the sustainable architectural design of the vernacular architecture. Vernacular Architecture gives priority to local requirements and uses traditional and locally available material (Niroumand *et al.,* 2017). The aspect of sustainability does not work in isolation. It covers broad range of other categories which are implicitinit, to make anything sustainable. According to Krishna Dhote, there are five aspects of the sustainability approach.

It encapsulates the physical, social, economic, cultural and the environmental aspect (Dhote *et al.*, 2012). These five dimensions of sustainability are holistically covered by the Vernacular architecture.

Energy Consumption :

The lifetime energy consumption in modern architecture star from inception, occupation to its sustenance (Gupta, 2017). The built structures of the so-called structures of modern science, are heavily dependent on the use of energy. From the initial phase to the material required, from the processing of those material, to building structures using machines, all requires energy. We are witnessing that the real estate sector in India is spreading its foothold on the day to day basis. This upward shift in realestate sector leads to heavy energy usage. Not only in the design but post completion also, these structures requires more energy to sustain itself. As these structures are made in order to show the aesthetic sense through the use of material which requires energy. It leads to compromise on the issue of sustainability. These structures are made in quick time to meet the ever-increasing demand of urbanization, they possess the risk of structural fault or design risk. This design risk automatically translates into the energy consumption due to poor ventilation and other phenomena. It is inefficient in making use of the energy of the sun or the solar energy. The Vernacular architecture were designed in such a way as to make effective use of solar radiation (Singh *et al.,* 2011). These 'solar passive' feature were employed to warming the indoors during the winter for warmth and to block out the radiation during the summer for the cooling part, it provided sufficient indoor natural illumination (Nayak and Prajapati, 2006). There were methods adopted in shading and opening and using natural ventilation which resulted in low energy consumption for hospitability (Singh *et al.,* 2011). As the Vernacular architecture were designed by keeping in mind the climatic conditions of the region, they acted as climate adaptive architecture. These architecture which are deemed to be cultural building traditions are not only affordable, but they also offers the scope of saving energy and thus becomes sustainable (Niroumand *et al.*, 2017).

Ecological footprint:

The energy usage doesn't only strain the pockets of the masses. It also impacts the ecology of the region and the increases the ecological footprints of the masses. As these structures of architecture are energy consumers they becomes the structures of ecological deprivation. The Vernacular architecture had the resource base which were local ranging from timber, adobe, stone, clay and other, so, they offered a renewable sources of material (Sarkar, 2015). In contrast, the modern urban structures have their resource base artificially constructed, chemically produced and other things. This aspect of artificially producing and chemical synthesizing makes them ecologically harmful substances to use. They might possess toxins and other harmful elements which negatively impact the local environment and the local ecology. These contemporary modern buildings contribute to serious environmental problems (Dhote *et al.*, 2012).

Policy:

The policies of the state are the signifiers of support to and any knowledge system. The policies and the plans formulated by the government embody in themselves some knowledge system. These policies might have some pre-conceived notions about certain knowledge system. These structures show the hegemonic dominance of some knowledge system over the other knowledge systems. The Indian state policy system has been molded by the colonial knowledge. It still finds its

traces in the policy making. Our policy did not reflect the 'already existing knowledge' related to architectural design. The policies are made to be implemented and without the awareness of the masses, they are unfruitful. In India, the people did not had the knowledge about the policy, when the survey was conducted on the aspect of awareness on the use of earth material to be used in construction (Niroumand *et al., 2017*). Codal Provisions related to the policies are ambiguous and needed to be further detailed (Chandel *et al.*, 2016). There are very less efforts from the side of the government apparatus to make use of the local resources while building structures. Little has been done to incorporate the principles of sustainability practices in the contemporary buildings (Singh *et al.*, 2009).

Conclusion:

The Vernacular architecture has been the structures of the ages, they in themselves embody the vast repository of already existing knowledge system. They are the product of evolutionary process of self-rectification which is not only confined to mud houses, but exceeding them, they are far from being the primitive models of design, lacking intelligence (Wahid, 2012). They are not the homogenous category of architecture. Infact they varied from region to region and adapting itself accordingly to local climatic conditions. They are proved to be the dynamic structures, where they are continuously changing in order to suit the lifestyle of the local masses. Still, these knowledge systems are being abandoned. Due to the changing needs of the masses and as the masses are shifting towards the so-called modern architectural buildings. These modern architectural buildings lacks the local identity, in fact they are done by some specialized agency and it is imitated by the unskilled labors, which leads them to make faulty design. It ultimately results in making the modern building architecture unsustainable and uninhabitable. It creates a 'domino effect' which continuously leads to successive chain of more expenditure burning the pockets of the masses, more energy consumption, high risk to life due to faulty design, environmental damage to un harmonious ecological relation. These modern living which creates a façade of a happy and lavish lifestyles posits in themselves the dangers of non-sustainability. The Vernacular architecture could be used to address the problems of sustainable design in order to maintain high style sustainable architecture (Wahid, 2012). Naciri (2007) for instance emphasized that the 'weather-oriented structures of Vernacular architecture are full of lessons that might motivate the architectural designs in passive climate controls. The need of revisiting the knowledge of vernacular architecture not only lies in the fact that they offer bio-climatic solutions to the issues of modern architecture. But it also stems from the fact that it inherently carries within the Tradition, the culture and the lifestyle which was in tune with the nature, which has been passing from generation to generation. Sidelining vernacular architecture would mean that we are side lining our tradition, our habits, and our lifestyles. This results in the twin issues of environment and the ecological balance problem. Vernacular architecture is not the panacea for the modern architecture aberrations. As they have functional and technological limitation (Wahid, 2012). However, they still offers many solutions and techniques to solve some of the architectural fault and sustainability issues within the built structure. The modern problems requires an already existing solutions. These knowledge systems also needs revisiting as the world is facing high levels of poverty and this revisit of vernacular architecture offers a sustainable answer to it. The role of the state becomes of prime importance as the state is decision makers, they can promote these already existing knowledge system through their holistic policy implementation. Not only do they have to consider these knowledge in the policy formulation but they also has the responsibility to make the masses aware of these policy interventions by enunciating

their ecological, environmental, economic, cultural, socio-religious importance. The vernacular architecture which are the architecture of the masses if fast losing it space in these modern times. The responsibility lies with us to safeguard these for our own betterment and a sustainable future.

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