SUSTAINABLE ARCHITECTURE IN CONTEXT OF HIMALAYAN HILL REGIONS

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Ensuring sustainability of architecture is necessary for sustainability of its immediate surroundings as well as the larger context i.e. sustainability of urban development and cities, which in turn affect the environment of broader region and the global climate. Though this is important for all areas, it is more so for environmentally sensitive areas like settlements located in hill regions, particularly those with fragile ecology like Himalayan hill regions that have weak geologic strata and are prone to natural hazards, and where unsuitable building practices are resulting in adverse environmental effects, incompatible built forms and loss of character. However, there are number of good examples of hill architecture all over the world from vernacular buildings of different hill regions of the world to ancient historical buildings to contemporary designed ones. These include vernacular architecture of Kashmir, Himachal, Kumaun hill regions, rock-cut temples, hill Forts and Palaces of Rajasthan in India, Buddhist monasteries in Tibet and India, Greek acropolis of Athens and Pergamon, Machu Pichu, European medieval hill towns, besides buildings by master architects like Frank Llyod Wright, Tadao Ando. Therefore, it is important to understand if lack of sustainability of prevalent architecture in hill towns of India is because the context is highly constraining and the options are limited or different, or has sustainability not been understood properly in context of hills. Therefore, in order to understand the requisites of sustainable architecture in context of hills it is necessary to first understand not only the impact of natural environmental context of hills i.e. the influence of landform, the ecological features, the climate, the susceptibility to natural hazards of earthquakes, landslides, cloud burst etc. on planning and design of buildings; but also the impact of design of buildings and construction practices adopted on the sustainability of hill slopes, water sources and micro-climate. Buildings on hills is challenging, however proper understanding of generic characteristics of hills and their implications on sustainability; selection of suitable sites for development; planning and designing in view of paucity of buildable land, natural hazards, different visual qualities, dominance of natural landscape and uniqueness of landform/landscape; and management of acuteness of terrain for buildings, vehicular and pedestrian accessibility and provision of infrastructure is essential for making buildings that are responsive to their natural context. Understanding the laws of nature and the symbiotic relationship between natural and built environment along with innovative solutions while using traditional wisdom can result in creating sustainable hill architecture in context of hill regions.