Inquiries into the Cultural Landscapes and Environmental Concepts of Buddhist monastic sites in India

Abstract submitted by

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The archaeological study of Buddhism had mostly been the interpretation of remains or ruins of monuments such as stupas, monasteries or some sporadic settlements deposits, sculptures

and epigraphy. The places inherently connected to the life events and teachings of the historic Buddha such as Sarnath, Bodhgaya, Rajgir or Vaishali create a geographical focus in Gangetic valley. Buddhist monastic sites form a larger part of cultural landscape in India. The site planning principles were rooted to understanding of natural setting, which is yet to be read and interpreted in its full potential.

India being one of the most significant abode of Buddhist sites, though, have been scantily understood and not being studied in depth so far in terms of their environmental and natural heritage value in the cultural landscape dynamics. This research has been oriented toward inquiring and appraising all these potential roles enacted by Buddhist monasticism by directly examining their natural and social contexts of historic and post historic Buddha monastic sites in different environmental settings (forest grove, hilltop and riverine flood plain- the habitats mentioned in Vinaya pitaka suitable for monks). Prototype sites from each category is identified to illustrate the current study. They are Jetavana monastery in Sravasti in forest grove, Sanchi UNESCO World heritage site in hilltop and Bharatpur monastery in riverine flood plain category.

Environmental concepts followed in Buddhist monastic sites had influenced the evolution of ***distinct identity***, ***form*** and ***meaning*** in spatial planning of Indian Cultural Landscapes. The research focuses on this nature based narrative of Buddhist landscape. Going further, the study enquires into the ***unique landscape planning principles*** (ULPP) followed in the planning of Buddhist monastic landscapes. The primary objective of the study is to emphasize on these dominant themes and perceptions towards nature that shaped Buddhist cultural landscapes over time in India.

The study is divided into three major sections to systematically achieve the research aim. Section 01 contains the background and context establishment with analytical literature review, identification of research gap and devising methods and tools (Figure.1). Section 02 deals with the environmental analysis of prototype sites and illustrates the results of the research. Finally, section 03 theorises and interprets the results and findings from previous section as conclusion and provides further study avenues.

The research is comprised of the following steps,

Chapter 1 establishes the cultural, geographic and historic context for the current research work.

An in-depth qualitative literature review of the historical account of Buddhist monasticism was conducted through contemporary, secondary literatures and translated primary texts as mentioned in chapter 2 in main thesis. This chapter investigates into previous studies and interpretations to establish the research gap for the current study.

The aim of chapter 3 is to derive a conceptual and methodological framework for the present study. It also involves an analytical survey of the existing methodologies and tools employed and developed by various scholars and institutes to interpret historical/ archaeological

landscapes of Buddhist monastic sites in the light of environmental principles. A micro-methodology for each section with theoretical framework was also devised to set the rationale of the analysis in this chapter.

The study appraises the current extant form of the prototype sites and investigates the landscape and environmental parameters which is unique in the study of Buddhist monuments and architectural heritage in chapters 4, 5, and 6. Globally accepted theories such as Ian Mcharg's site suitability interpretation through 'Design with Nature', DELFT tradition of European historical garden study had been adapted as a tool for physiographic assessment of the study sites. Landscape interpretation led to the understanding of siting principle of the monuments or built architectural components. Furthermore, INTACH's historical garden conservation principles had also been leveraged to collate with the factor of rootedness to ancient Indian context.

A technical-analytical approach was taken to read the natural parameters that shaped the landscape configuration of the study sites. This comprised of investigating the landscape layers – topography, hydrological regime, vegetation and solar aspect over the extant form of the prototype sites. A Digital Elevation Model (DEM) image helps in capturing three-dimensional topographical details and shows variations in height as a sequential band of colors. When a DEM is visualized on a computer screen, the height associated with each pixel can be examined using Geographic Information System (GIS) software. GIS also enables analysts to overlay images with spatial information from other sources. In this paper, for example, village and ASI boundaries, tanks, temples, and monasteries traced from the satellite images obtained from LANDSAT. All the prototype sites, Jetavana, Sanchi and Bharatpur were examined against this common investigative process to find out their unique site planning principles; covered in chapter 4, 5 and 6.

A field study was undertaken spreading over summer and pre-monsoon season at each of the prototype site to validate the outcome of geo-spatial analysis with the ecological measures adapted by the builders of the site. It was appropriate to search for hints such as exposed drainage corridors, paleo channel, low lying areas or water dots within the preserved boundary as well as its surrounding. They create the interpretive link between natural landscape and built components.

A major part of the Buddhist monastic practice was performed through their association with plants and ethnobotanic activities. Buddhist environmental ethic was inherently imbibed with it. A study on plant and forest associated directly to historic Buddha was carried out from scriptures, museum visits and extant art and wall inscriptions. These were helpful to interpret the influence of nature on their art form and symbolism.

The research suggested a set of interpretive characters to assess the interrelationship amongst philosophical, environmental and spatial parameters in Buddhist monastic sites in chapter 8. The traits are broadly aligned with the essence of Indian architecture theorised by Kurula

Verkey. Eight such traits were found out in the process of interpretation such as – influence of symbolism in site planning, attitude to topography, attitude to water resources, attitude to plant resources, sense of anchor, visual treatment, spatial interrelationship among built elements, search for sacred dimension and proportional order (Figure 2). These interpretive traits are detailed out in main thesis based on spatio-environmental principles on Buddhist monastic spatial planning.

The study explored the opportunity to recreate the landscape of the Buddhist monastic sites under purview. The analytical observations were examined under the influence of the sites' respective landscape settings. The landscape architectonic principles were used to recreate a conjectural image of the Buddhist sites highlighting the architectural elements in milieu of landscape features which are extensively presented with visuals in chapter 9 of the main thesis.

Chapter 10 reconnects the research objectives with the Buddhist environmental ethics and various eco-philosophies derived from modern day tradition of environmental understanding. It establishes an underlying connection among the technical, tangible aspects of study with the embedded intangible philosophical constructs of Buddhist environmental approaches in site planning as concluding remarks.

In the essence, the research reads, theorises and interprets the identifying landscape features of Buddhist monastic sites. These are replete with multiple cultural and environmental dimensions imbibed in their spatial planning at ancient period. The findings could be valuable for conservation, preservation and management perspectives of these religio-cultural heritage sites with a deeper understanding of environmental principles. The framework could be adapted for other Buddhist monastic sites which are yet to be explored with renewed landscape approach.

Keywords: *Buddhist environmental ethic, Buddhist monastic landscape, Landscape archaeology, Historical ecology, Eco-sensitive planning, Design with Nature, Landscape approach, Landscape architectonic interpretation, Ethno-botany, Natural heritage, Sacred sites, Geo-spatial analysis, Arc-GIS analysis*