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RESEARCH ARTICLE

Modernity in tradition: Reflections on building design and technology in the Asian vernacular



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Abstract

Vernacular buildings across the globe provide instructive examples of sustainable solutions to building problems. Yet, these solutions are assumed to be inapplicable to modern buildings. Despite some views to the contrary, there continues to be a tendency to consider innovative building technology as the hallmark of modern architecture because tradition is commonly viewed as the antonym of modernity. The problem is addressed by practical exercises and fieldwork studies in the application of vernacular traditions to current problems. This study investigates some aspects of mainstream modernist design solutions and concepts inherent in the vernacular of Asia, particularly that of the Chittagong Hill Tracts (CHT). This work hinges on such ideas and practices as ecological design, modular and incremental design, standardization, and flexible and temporal concepts in the design of spaces. The blurred edges between the traditional and modern technical aspects of building design, as addressed by both vernacular builders and modern architects, are explored.

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1. Introduction

Currently building technology and sustainable design are considered as fundamental to the growing field of contemporary architecture. Practicing architects have a challenging responsibility to design buildings that are environmentally sustainable with the change in the global concern regarding

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the use of energy and resources (Wines and Jodidio, 2000; Cox, 2009; Friedman, 2012). This new responsibility has prompted a sensible shift in trend from a biased preference of eye-catching, institutionalized building forms to more organic, humble, yet energy-efficient vernacular forms. Additionally, the local forms of construction capitalize on the users' knowledge of how buildings can be effectively designed to promote cultural conservation and traditional wisdom (Oliver, 2003; Rapoport, 2005).

A number of practitioners are also inspired by building traditions, given that the local vernacular forms have proven to be energy efficient and "green," honed by local resources, geography, and climate (Fathy and Shearer, 1986; Curtis, 1996; Lewis, 2014). However, given the diversity of vernacular architecture in the global context, the techniques or technology-based research on vernacular architecture remains surprisingly limited beyond performance-based examples. This limitation stems from multiple factors, one being fundamentally hinged on the conventional notions of "traditional" and "modern" in the discourse of architecture.

In the discussion of vernacular architecture, ambiguities arise from the meanings of certain terms and concepts. The words "modern" and "traditional" are often considered as being in fundamental opposition to each other. One tends to suppose that vernacular architecture is a kind of traditional architecture, distinct from modern architecture. In this dualist view, the traditional is taken to be inept or technologically crude (Bourdier and Trinh, 1996).² This view not only establishes the vernacular as a distinct category, but also implies that it is nearly immutable and static, "indeed unimprovable, since it serves its purpose to perfection" (Tzonis et al., 2001).³ However, a fragmented volume of empirically grounded works on Asian vernacular dwellings suggests that sly details, materiality, as well as adaptive and smart-space solutions and techniques are deployed ingeniously as much (or more so) by the local unknown builders in a traditional setting as by modern illustrious architects.

These findings are shunned by the limited development in research that explicitly addresses the application and use of vernacular knowledge and skills in contemporary architectural examples (Vellinga and Asquith, 2006).

1.1. Scope and approaches

Drawing upon the limitations, this study examines a specific type of vernacular architecture, which is shown to be consistent with contemporary design thinking and practice. The findings are based on a primary fieldwork⁴ conducted in

²Bourdier and Minh-ha, "Foreword" in *Drawn from African Dwellings*. According to the authors, the concept of tradition cannot be merely opposed to that of modernization without falling prey to the pitfalls of binary dualist thinking.

³As quoted from Rudofsky, "Architecture without architects" in Tzonis, Lefaivre and Stagno [eds.], *Tropical Architecture: Critical Regionalism in the Age of Globalization*, p. 101.

⁴The ethnographic and architectural findings, as well as the related visuals, used in this article draw upon a fieldwork conducted in 10 hamlets in Bandarban - the southernmost district of the CHT. The survey area was roughly dispersed around three major *mouzas*, Alikadam, Thanchi and Suwalak. Collection of ethnographic and architectural data was done through participant-observation

the Chittagong Hill Tracts (CHT), the hilly border region in the southeastern part of Bangladesh. From an ethno-linguistic perspective, CHT is the most complex region of Bangladesh,⁵ and this complexity is mirrored in the local hill settlements with distinctive, historically perfected features exhibiting ecologically sound lessons for sustainable or green architecture. Mainly dubbed as "primitive" or "indigenous" dwellings, the atypical upland examples of the Mru people are not seriously researched, remain outside architectural references, and are limited to casual comments and picturesque images (Ara and Rashid, 2003). Traditional hill-ethnic dwellings in the Chittagong Hills generally share striking similarities with some typologies of Southeast Asian traditional architecture rather than South Asian vernaculars (Brauns and Löffler, 1990, 60).

Starting with reviews on the construction of modernism and its fuzzy boundaries in the context of architectural development, the follow-up sections of this paper illustrate how environmental issues and technology are manifested in Asian vernacular examples. Although the approach is largely qualitative, drawings and photos are used sequentially and analytically to ascertain the temporal dynamics of technology and spaces (Grills, 1998; Yin, 2003; Van Maanen, 1983; Ball and Smith, 1992). Analytical points are grouped under themes and then discussed under thematic parts. The approach avoids argumentative points and leans on similarities rather than comparative notes. Selected Asian vernacular examples, aside from the CHT, are drawn into the discussion to illustrate themes. This work has two main objectives. First is to contribute to an important debate on the relevance of any edge between the traditional and modern aspects of design decisions and technology. This perceived gap is a limiting factor in appreciation of local forms and technology. Second is to highlight materiality, design innovations, and ingenuity in local architecture, particularly in Asian vernacular examples, that are at par with or are more instructive than that in modern buildings. This context opens up possibilities for embracing vernacular as a model for technically honed sustainable forms in the 21st century.

1.2. Context, material, innovation, and technology: path to modern architecture

The concept of modernism in architecture is difficult to define despite being clearly conceived in opposition to late 19th century historicism, and rejecting historical precedents and traditional methods of building (Ching et al., 2011;

(footnote continued)

involving interviews, photography, measured drawings (on-site), sketches and other forms of visual notes. Two Marma interpreters and guides helped in the interview process. Notes were audio recorded, written down and transcribed off-site.

⁵Eleven indigenous groups, collectively known as the *jhumias*, reside in the CHT area. The ethnic communities (other than the Bangali) are Chakma, Marma, Tripura, Tangchangya, Khyang, Chak, Bawm, Lushai, Pangkhua, Mro[Mru] and Khumi. The three largest groups are the Chakma, Marma and the Tripura. Mru are the largest of the smaller groups. In general, language, culture, social structure, and traditional economic mode of production of the hill people are uniquely different compared with the Bangali, the mainstream people of the flood plains of Bangladesh.

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