



Settlement of Eastern Himalayas from Traditional to Modern House Type: A Case Study of Sikkim

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Abstract

Sikkim's settlement patterns and housing have transformed significantly over the past five decades. Traditional dwellings—rooted in local materials and the cultural practices of Lepcha, Bhutia and Nepali communities—are increasingly replaced by concrete structures shaped by modernization, mobility and changing aspirations. This paper outlines major vernacular house types, examines spatial and architectural shifts since the 1970s, and discusses the socio-cultural and environmental implications of this transition. The analysis highlights the need to integrate traditional ecological knowledge into contemporary planning for culturally grounded, climate-responsive development (McDuie-Ra & Chettri, 2020).

Keywords: *settlement, vernacular-traditional settlement, housing transformation, Bhutia, Lepcha, Nepali, Sikkim house types.*

1. Introduction

Sikkim's mountainous terrain, seismicity and monsoon climate historically shaped its settlement forms. Vernacular houses constructed of timber, bamboo, stone and thatch were adapted to environmental risk and resource availability (CEPT University, 2014). After Sikkim joined India in 1975, improved connectivity, market integration and socio-economic changes accelerated a shift toward modern construction (Subba, 2008). Today, concrete-based architecture dominates even remote regions (McDuie-Ra & Chettri, 2020).

2. Housing Categories and Everyday Patterns

Government classifications distinguish pucca, semi-pucca and kachcha houses (Census of India, 2011). Semi-pucca timber-frame cottages remain widespread, particularly in rural areas. Material choices vary by altitude and accessibility, reflecting both ecological constraints and socio-economic conditions (Sharma, 2017).

3. Vernacular Traditions of Major Ethnic Communities

3.1. Bhutia Houses

Bhutia houses (Khim) follow ritual site-selection practices and employ timber pillars on stone bases (Lepcha, 2013). Rounded roofs, storerooms on lower levels, and prayer rooms (Chesum) reflect spiritual and functional priorities (Subba, 2008).

3.2. Lepcha Houses

Lepcha dwellings (Dukeymoo-lee) are elevated structures using bamboo lashings instead of metal fastenings, enabling earthquake resilience (Deep, 2020). Site selection by a *Boongthing* priest highlights the cosmological relationship between landscape and dwelling (Arora, 2006).

3.3. Nepalese Houses

Nepali settlements introduced terrace agriculture and stable, permanent homes with a central hearth, attic storage and separate cattle sheds (Sinha & Varma, 2014). These spatial layouts reflect agrarian lifestyles and extended family structure.

4. Spatial Reconfiguration

Earlier clustered settlements near springs and terraced fields have now shifted toward dispersed, road-oriented patterns due to expanding transport networks (Risley, 2010/1894; Chettri & Sharma, 2021). Urban growth around Gangtok has replaced farmland with residential and commercial construction. Houses now are taking a shape of solid box five storey building.

4.1 Architectural Modernization

Traditional timber-and-mud houses are increasingly replaced by RCC structures, reflecting aspirations for durability, prestige and modernity (McDuie-Ra & Chettri, 2020). Hybrid forms combining concrete cores with wooden façades represent transitional aesthetics (Sharma, 2017). After merger with India, the connectivity became more reliable which in turn made easy to bring materials from the near-by markets in Siliguri. This first transformed the design of urban houses from inside which later on even transformed rural houses as people in the rural area started using tiles instead of mud-earthy colours for longevity.

4.2. Changing Socio-Cultural Practices

Communal labour systems and multifunctional living spaces within vernacular houses have weakened as contractor-based construction becomes dominant (Subba, 2008). Traditional houses are increasingly adapted for tourism—homestays, cafés and craft shops—reshaping community relations (Arora, 2006; Gurung & Chettri, 2022).

After boom in tourism sector in Sikkim the houses also became a source of income, the concrete building which were given on rent had very low return. They were transformed into hotels where the top floor is been kept for the owner and lower three to four levels are given on lease for hotels.

The houses in the rural area are now transformed into homestays and getting a good earning from it as agricultural activities is not done in mass due to lack of availability of labour. The agricultural field is converted into small compact farm where people started making it more attractive for the tourist by keeping fish pond, milking animals and poultry for which government is providing aid at micro level.

4.3.Environmental and Cultural Implications

Modern materials often have higher carbon footprints and may reduce thermal comfort in high-altitude climates (CEPT University, 2014). The decline of traditional craftsmanship raises concerns about cultural erosion and reduced seismic resilience (Deep, 2020). Heritage- and eco-tourism initiatives offer opportunities to revive vernacular materials such as bamboo and timber (Gurung & Chettri, 2022). Sikkim being one of the tiny and the youngest to become part of Indian Union still holds its aesthetic. To preserve it, the government of Sikkim has introduced the concept of eco-tourism, the recent development in this field is that government is working on the concept of green space.

5. Conclusion

The evolution of housing and settlement pattern in Sikkim illustrate the deep connections between geography culture and modernization. Over last few decades, the region has shifted from linear in the urban area to cluster in rural area to concrete based urban landscape. Modernization has brought better infrastructure and new economic opportunities, but it has also brought challenges related to environmental sustainability and preservation of cultural identity. Balancing these two forces requires huge brain storming, mindfulness and thoughtful planning to integrate traditional wisdom with modern techniques. Sikkim's architectural heritage offers valuable lesson for building in harmony with Eastern Himalayan environment.

Sikkim's shift from vernacular to modern housing reflects broader socio-economic transformation. While modernization improves mobility, amenities and economic opportunities, it risks weakened cultural identity and environmental sustainability. Integrating vernacular ecological knowledge with modern techniques can support culturally rooted, resilient architecture in Eastern Himalayan context (McDuie-Ra & Chettri, 2020).

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