



A STUDY OF DOMESTIC ARCHITECTURE OF THE NAGAS

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE
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BY

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The present work is original in its content, and has not been submitted in the part or full for any other degree or diploma in any other university/ institute.

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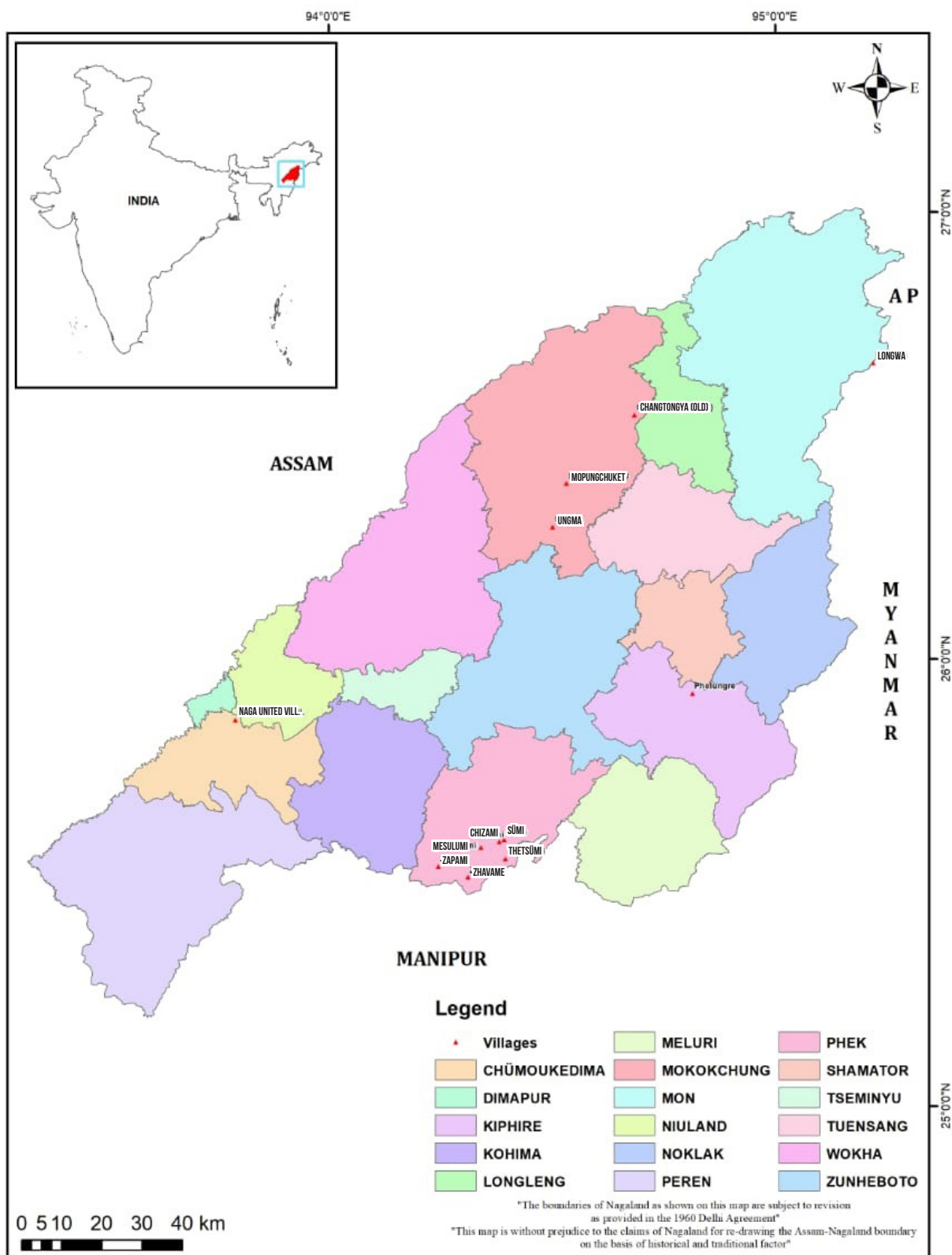
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LOCATION MAP OF STUDY AREA



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CHAPTER-1

Introduction

1.1. Conceptual Background of the research:

Those who came into contact with the Nagas make these statements, “The Nagas are magnificent; the Nagas are a fine people; the Nagas are unique.” Researchers and anthropologists returning from the Naga Hills make a similar comment, and administrative officers longing to be posted to Naga areas take a liking to them before even setting foot on their soil. As noted, British anthropologist Verrier Elwin puts it, “It is because of the Naga’s free and independent outlook, typical of highlanders everywhere.” The Naga, as he says, are a people of whom their country can be proud: “They are strong and self-reliant, good looking at, with an unerring instinct for color and design, friendly and cheerful, with a keen sense of humor, gifted with splendid dances and a love of the song” (cited in Stirn and Ham 2002, p 29).

The Nagas are hill-dwellers, occupying hilltops or the highest possible points along a hill slope; reaching almost any of their villages is an arduous task. Such a settlement pattern is largely a result of the custom of headhunting, formerly prevalent throughout the Naga cultural realm. Inter-village feuds being frequent, it was necessary to situate villages out of reach of raiding parties. Hilltops, of course, provide ideal advantages and viewpoints for detecting enemy activities or imminent attacks. Yet other considerations also influenced the setting of Naga villages, for instance, climate. Below 500 meters, the climate is hot and unhealthy; above 1500 meters, it is unpleasantly cold in winter, and, during monsoon, the cloud is perpetual. Abundant springs are infrequent above 1500 meters, and water tends to be scarce (see Stirn and Ham 2002). Besides, topographic features are also another likely factor that might have influenced the architectural designs of houses.

Naga village layouts vary significantly between tribes, ranging from seemingly unstructured arrangements to well-organized clusters resembling terrace-house designs. Each village has its unique layout, with no two settlements being identical. Some villages feature tightly packed homes enclosed by a fence or stockade, while others are dispersed in small clusters among vegetable gardens and bamboo groves.

Traditionally, Naga villages are independent units located on hilltops, typically at elevations ranging between 900 and 1,200 metres above sea level. Historically, these elevated locations were chosen as a defense strategy against invasions from neighboring tribes or villages. This strategic placement helped ensure economic self-sufficiency and security. The selection of village sites was often accompanied by elaborate rituals and sacrifices to ensure the settlement's prosperity and protection.

Early explorers documented that Naga village gates were heavily fortified and meticulously maintained. These fortifications commonly included large wooden doors carved from a single piece of wood, secured from within the village. Protective measures also involved thorny creeper ropes, stone boulders, pitfalls, and ditches lined with sharpened bamboo spikes known as *kavümhi*. In Angami and Chakhesang regions, thick stone walls measuring 2 – 3 metres wide were commonly built around villages for added protection. In Ao territories, villages were often encircled by fences reinforced with *kavümhi* (spikes bamboo).

Over time, with the introduction of Christianity and the intervention of British and Indian forces, intertribal conflicts and external threats gradually diminished, reducing the need for extensive fortifications and transforming the security practices among the Naga villages.

The domestic architecture of the Naga generally with single story are built on the slopes or hill tops after being dug down to a rough level. In width the Naga houses vary from 6 to 12 metres and in length from about 10 to 20 metres and divided into three or four compartments according to the taste and wealth of the owner. Of the apartments the largest is for common use while others are appropriated to the hearth, local brew vat store, children bedroom and peer group bedroom, place for keeping pounding table, paddy

storage, and a common platform. Architecture for the developing peoples; as they are now was called-the millions of India, Africa, and the Middle East who are fast becoming part of the modern world poses great problem, particularly since education is acquired more quickly than wealth. An architect, if he wishes to devote part of his life to helping such people should know the basic requirements of tropical building and the great difference in building for a hot – dry or a hot – wet climate. The subject is a complicated one, for there are differences not only in housing but town planning and the methods of siting buildings (cited in Drew, 1963, p.57-58).

Domestic architectures are much more than physical structures. They represent a home – a place of work, rest, and worship (Bourdieu, 1977, p. 90). Houses are buildings that are inhabited by different individuals or groups, such as households of kin, related gods or spirits of ancestral inheritance, or kept specific objects such as ritual paraphernalia (Carsten & Hugh-Jones, 1995, p. 7). Houses are maintained by individuals, families, or specific social groups with a particular purpose and function (Lévi-Strauss, 1987, p. 160). As such, houses express symbolically through architectural design, decoration, and layout (Rapoport, 1969, p. 46). Houses speak to the members of a community about socioeconomic categories and values, and they also inform others about their purpose and the status of their inhabitants (Lawrence, 1987, p. 42).

Such traditional architecture is also the appropriate space where traditional knowledge and skills are learned. The traditional Naga *Morung* is one of the best examples where elements of traditional knowledge associated with the art of weaving, costume-adornment, dancing, oral traditions, hunting skills, and techniques of traditional warfare are shared with young members of the village (Mills, 1926, p. 51).

In another aspect of traditional architecture, most Naga groups build temporary field huts in the agricultural season, particularly if the fields are far away from the village. The designs of such field huts differ according to the group that built them. Among the Konyaks, the *Anghs*’ field houses are unique in shape and resemble a giant turtle or reptile (Shimray, 2001, p. 112). Some other tribes build field huts that are smaller in size, without

distinctive design, and very simple, primarily to protect themselves from rain and the scorching heat of the sun (Oppitz et al., 2008, p. 235).

In studying the house as a multifaceted category, one may approach the complexities of social life in the region and seek new and enhanced understandings of profound social and cultural phenomena and processes (Carsten & Hugh-Jones, 1995, p. 2). Domestic architecture and built structures have always attracted interest, but just as the study of interdisciplinary subjects has changed drastically over the years, so has the study of architecture within the fields of anthropology, sociology, history, and archaeology (Rapoport, 1969).

Recent studies in architecture have begun to focus on domestic settings in order to better understand the day-to-day lives of the common citizen. The examination and study of private household buildings, when combined with established knowledge of elite, political, and religious spheres of society, offer a more versatile, well-rounded perspective. Architecture is often a canvas for changes within a society or culture. Social, economic, or political shifts within populations materialize as modifications in the built environment. As Hiller and Hanson (1984, 27) assert, the most far-reaching changes in the evolution of societies have usually involved or led to profound shifts in spatial form and in the relation of society to its spatial milieu; these shifts appear to be not so much a by-product of the social changes, but an intrinsic part of them and even to some extent causative of them (cited in Drennan, 2010, p 1).

Therefore, based on the importance of architecture as an interdisciplinary subject, this study examines spatial methods – specifically the meanings attached to space among different tribes in the construction of architecture – using tools like access analysis and visibility patterns within domestic architectures in Nagaland. It also traces historical links between architectural forms across the region (Rapoport, 1969, p. 4). The core aim of this research focuses on morphological and functional variations in the construction of Naga domestic architecture and the symbolic meanings associated with these structures (Carsten & Hugh-Jones, 1995).

As the study probes the central role of houses among the Naga tribes, it seeks to reveal how domestic architecture functions as an adaptive mechanism – demonstrating how people shape buildings and how buildings, in turn, shape people (Rapoport, 1969, p. 12). It also explores how spatial layouts and usage impact social relationships, the influence of ecological and environmental factors, and the application of traditional methods such as measurement techniques, construction tools, and architectural forms. These forms serve social functions such as expressing status, marking kinship systems, organizing administration and rituals, and symbolizing gendered space (Mills, 1926, p. 58; Oppitz et al., 2008, p. 235).

By placing Naga architecture within a universal frame where spatial boundaries address not just physical but existential needs, the study redefines architectural space as a form of aesthetic and symbolic expression. This perspective recognizes the value of traditional building materials and practices within global architectural discourse, challenging earlier typologies that have overlooked indigenous knowledge systems (Waterson 1990; Rapoport, 1969, p. 8).

Understanding Naga domestic architecture thus requires close attention to the physical, technological, sociocultural, and political-economic contexts that shape its concrete reality. At the same time, it also involves interpreting how humans – as symbolic beings – translate these realities into meaningful architectural philosophies (Carsten & Hugh-Jones, 1995, p. 3). The physical environment offers the material basis for construction; technology enables the manipulation of those materials; and sociocultural and political – economic forces frame and reshape the built environment. The difference between shelter and architecture lies in the distinction between real, concrete space and philosophic, existential space. Ultimately, architectural history is shaped by the changing relationships among these forces over time (see Rapoport, 1969, pp. 9–10).

The Nagas of Northeast India comprise of various Indigenous communities whereby their domestic architecture is deeply rooted in their cultural and religious beliefs. The traditional Naga house is called, *Che*, *Ke*, *Ki*, *Kuh*, etc., and it serves as a community center as well as a residential space for families.

Traditional Naga houses are typically constructed on stilts using locally sourced materials such as bamboo and wood, with thatched roofs made from palm leaves, straw, or hay. This stilted design elevates the house above ground level, offering protection against flooding, especially in plain areas during the monsoon season (Stirn & van Ham, 2002). In hilly and sloped regions, roofs are often constructed to nearly touch the ground, providing a shield against heavy storms and strong winds. These architectural choices also contribute to the structures' resilience against earthquakes, a common occurrence in the region (Stirn & van Ham, 2002).

The main entrance of a traditional Naga house is accessed via a wooden ladder or door, leading into an interior centered around a hearth used for cooking and warmth. The interior space is typically divided into sections designated for sleeping, storage, and communal activities, with the layout varying based on the house's size. Walls are adorned with woven bamboo mats, displaying various styles, and in wealthier households, the front walls and main posts are decorated with animal horns, heads, and other traditional Naga motifs, symbolizing social status and cultural identity (Waterson, 1990).

A prominent feature of traditional Naga architecture is the living house, reflecting the Naga people's deep connection to the land and their understanding of the natural environment. The use of lightweight, flexible materials like bamboo and thatch facilitates easy construction and dismantling, allowing adaptability to the community's evolving needs. This architectural approach is shaped by a combination of social and cultural practices, religious beliefs, and a profound connection to nature (Waterson, 1990). Historically, Nagas believed that all elements of nature, including trees and rocks, possessed spirits, and that life was cyclical, composed of balancing opposing forces. Consequently, their architecture is designed to harmonize with nature and embody this balance, reflecting a commitment to sustainable living (Eliade, 1959).

The built environment encompasses various aspects of the physical surroundings, including site selection, planning, building, architecture, and layout. The longstanding relationship between the people of Nagaland and their natural environment has fostered an understanding of the value and utilization of natural resources. Social and religious

elements are intricately woven into domestic buildings, symbolically expressed through design and decoration. Construction techniques and materials are thoughtfully chosen to accommodate the land's physical features, including seismic considerations. Rituals performed during different construction stages, the timing of material collection, and the orientation of the house are all significant in maintaining ecological balance (Stirn & van Ham, 2002, p. 52).

Beyond residential structures, various traditional Naga dwellings reflect the region's unique cultural and geographic conditions. For instance, the Angami and Chakhesang tribes are known for their distinctive curved gable-roofed houses, while the Ao, Konyak, Sangtam, and other tribes feature houses with characteristic front verandahs (Stirn & van Ham, 2002, p. 60). These architectural features are not merely functional but also embody complex symbolic meanings tied to clan identity, prestige, and mythological narratives (Waterson, 1990).

In recent years, many Nagas have migrated to urban areas, constructing modern houses made of concrete and brick. Despite this shift, traditional dwellings remain vital cultural symbols for the tribes. There is a growing movement within some Naga communities to preserve and revive domestic architecture as a means of promoting cultural identity and sustainability (Stirn & van Ham, 2002).

Thus, the domestic architecture of the Nagas is a rich and complex subject, encompassing a wide range of cultural, social, and environmental influences. A comprehensive examination of this topic necessitates consideration of both historical and contemporary contexts of Naga life, exploring the various factors that have contributed to the development of their domestic architecture. This includes contextualizing the architecture within historical, social, and cultural frameworks and analyzing the implications of modernization and globalization on traditional architectural forms (Waterson, 1990; Stirn & van Ham, 2002). As Eliade (1959) suggests, traditional dwellings represent more than shelter; they encapsulate a cosmological order, where construction and habitation are acts that mirror the creation of the world itself, thus embedding profound existential meaning into everyday life.

1.2. Brief profile of Nagaland

Nagaland is the sixteenth State of India, situated in the extreme Northeast corner of the country. The State of Nagaland is bounded by the Indian States of Assam in the west and northwest, Arunachal Pradesh in the north, Manipur in the south and the country of Myanmar (Burma) to the east. Physically, the state covers an area of 16,579 sq.km and lies between 25° 6' and 27° 4' latitude North of the Equator and between 93° 20 and 95° 15 East longitude. The altitude varies approximately between 194 - 3048 meters above mean sea level. The State is mostly mountainous in terrain, with several ranges breaking into many offshoots. Amidst the hills, there are features of several river valleys, and is rich in biodiversity with dense forests. The forest cover comprises both tropical and sub-tropical forests. The State experiences a subtropical climate with distinct wet and dry seasons. The lush vegetation, numerous rivers, and diverse wildlife add to its unique landscape and ecosystem. The natural resources and agricultural potential of the State play a vital role in its economy and livelihood of its people. Mount Saramati is the highest peak in the State measuring 3840m above mean sea level (AMSL) located in Kiphire district. The other important mountains are Japfü Peak (3014m in Kohima District), Mount Pauna in Peren district standing at the height of 2841m, and Zanübou at 2750m in Phek district.

In terms of their administrative units, the State created four new districts - Chümoukedima and Niuland carved from erstwhile Dimapur District and Tseminyu from Kohima on 18th December, 2021, on 19th January 2022, Shamator District carved from Tuensang, and Meluri, erstwhile a sub-division under Phek became Nagaland's 17th district officially notified on November 2, 2024. . Presently, the State is divided into seventeen Administrative Districts, inhabited by seventeen major tribes along with other sub-tribes. The administrative districts are Chümoukedima, Dimapur, Kiphire, Kohima, Longleng, Meluri, Mokokchung, Mon, Niuland, Noklak, Peren, Phek, Shamator, Tuensang, Tseminyu, Wokha and Zunheboto, with Kohima as the capital of the State. The seventeen major tribes consists of Angami, Ao, Chakhesang, Chang, Khiamniungan Kuki, Konyak, Kachari, Lotha, Phom, Pochury, Rengma, Sumi, Sangtam, Tikhir, Yimkhiung

and Zeliang. According to the 2011 census, Nagaland has a total population of 19.81 lakhs with the literacy rate of 79.55 percentages.

The traditional ceremonial attire of each Naga tribe is distinct, reflecting the unique cultural identity of each community. Elements such as multicolored spears, daos adorned with dyed goat's hair, intricately woven bamboo headgear interlaced with orchid stems and colorful wool, and decorations featuring boar's teeth and hornbill feathers are emblematic of this diversity. Historically, warriors earned the right to wear these items through acts of valor, symbolizing their achievements and social status (Fürer-Haimendorf, 1939).

Agriculture serves as the primary occupation for the majority of the Naga population, with over 85% directly dependent on it for their livelihood (Nagaland State Portal, n.d.). While Christianity is the predominant religion among the Nagas, some communities continue to practice traditional animistic beliefs, integrating them into their cultural practices.

Each Naga tribe celebrates its own seasonal festivals, characterized by vibrant dances, folk songs, music, and feasting. These festivals are deeply rooted in agricultural cycles and often involve rituals to honor deities and ensure bountiful harvests.

Nagaland boasts a rich linguistic tradition, with each tribe possessing its own language, customs, and attire. Despite these differences, there exists a shared sense of unity and cultural cohesion among the tribes.

1.3. Area of Study:

The proposed study covers selected districts of Nagaland by following an intensive village to village survey. Practically it is not possible to cover all the districts, therefore a selective area of study was conducted for sampling due to the following reasons: Relevance to research question particularly to the study's objectives and hypotheses, access to reliable and comprehensive data sources has influence the choice with readily available demographic, economic, and social data preferred to ensure robust analysis. Some of the pre-existing literature can provide a stronger context for new findings and better

comparative studies with other communities. To test a hypothesis derived from theoretical framework, aiming to validate or challenge the existing theories based on initial observations or previous experiences highlight particular issues worthy of investigation.

The districts and villages sampled for the present research includes Chümoukedima of Naga United Village, Kiphire District – Phelungre village of Sangtam community, Mokokchung District – Old Changtonya, Mopungchuket and Ungma of the Aos; Mon District – Longwa village bordering Myanmar; Phek District – Chizami, Mesulumi, Sumi, Thetsumi, Zapami and Zhavame villages.

District	Village Name	Total Household	Total Population	No. of Males	No. of Females
Chümoukedima	Naga United	288	1,671-1,820	739	753
Kiphire	Phelungre	208	1,018-1,109	451	458
Mokokchung	Changtonya (Old)	496	2,518-2,743	1185	1063
	Mopungchuket	743	3,441-3,748	1568	1504
	Ungma	2294	10,576-11,520	4809	4634
Mon	Longwa	732	5,748-6,261	2657	2475
Phek	Chizami	285	1,437-1,565	652	631
	Mesulumi	508	2,281-2,485	1042	995
	Sumi	112	569-620	263	245
	Thetsumi	639	3,181-3,465	1461	1379
	Zapami	232	1,465-1,596	682	626
	Zhavame	637	3,593-3914	1642	1566

Table 1: Districts sampled for study (Population 2022/2023 est. Census; *Source:* <https://IndiaGrowing.com>)

1.4. Review of Literature:

A comprehensive review of the literature on the domestic architecture of the Nagas provides valuable insights into the various aspects of this field of study. Traditional architecture focuses on designing and constructing residential spaces, including houses, apartments, defense gates, sitting platforms, field huts, *morung*, and other living quarters. It encompasses various topics, such as tools, measurement techniques, historical development, cultural influences, stilt, spatial layout, raw materials, and sustainability.

The study of domestic architecture has gained significant attention in recent years, as the design and functionality of living spaces directly impact individuals' well-being and quality of life and the continuity of its influences. Scholars and researchers have delved into the domain, exploring diverse theories, methodologies, and case studies to understand domestic architecture's evolution, characteristics, and significance in different contexts.

The review of literature on Naga traditional architecture offers a comprehensive exploration of the construction techniques, measurement tools, and symbolic elements that define the architectural heritage of the Naga people. This review delves into scholarly works, academic papers, and research articles related to the subject, aiming to understand and appreciate the richness and significance of Naga architecture within its cultural and historical context. Most importantly, the review of literature on domestic architecture helps to provide a synthesis of previous research and helps identify the context for research questions and the gaps in knowledge that the present research aims to fulfil.

Arya and Joshi (2004) in their book *The Land of the Nagas* emphasizes about various tribes' festivals, ceremonies, rituals, sacrifices etc., taken place at different place and occasion in Nagaland. General descriptions are found on the distinctive shape of the Palmyra-thatched house of the *Angh* (chief) of Shangyu village and a huddle of huts in a Konyak village in the north eastern Mon district of Nagaland.

In a book titled *The Hidden World of the Naga: Living Traditions in Northeast India and Burma*, Stirn and van Ham (2002) eloquently summarize the art and culture related to Naga traditional architecture. This celebration of Naga culture, art, music, and way of life is the first comprehensive examination of the tribes that comprise the "Hidden World of the Nagas." It contains a wealth of never-before-published images of landscapes,

peoples, and Naga artworks from museums and private collections. For centuries, the Nagas lived in relative isolation in the mountainous area of Northeast India and upper Burma. This magnificent book explores the art and culture of the Naga people living in a remote region known as the “Last Great Mystery of Asia.” Looking beyond the Nagas’ past as fierce head-hunters, it focuses on their unique way of life that rarely separates the spiritual from the social. Images of important festivals and ceremonies reveal a proud people whose animistic beliefs and shamanic practices are displayed in gorgeous artwork, jewelry, costumes, traditional architecture, and musical instruments.

The Nagas: Hill Peoples of Northeast India: Society, Culture and the Colonial Encounter authored by Julian Jacobs (1990) writes about the Nagas’ various feasts of merit, social organization, ornaments and status symbolism, *morung*, chief and democrats, fertility etc., depicted with photo images and other illustrations. Drawing on a diverse range of historical materials, the author examines how the notion of tribes came to be applied to the Nagas and point out its subsequent importance in the development of contemporary Naga nationalism.

The book also informs us of the shared social and cultural traits, the thousands of small Naga villages that often vary greatly from one another, and the Nagas display of both unity and diversity in their dress and ornament. Their vibrant material culture is generously illustrated here in color photographs that display textiles, basketry, jewelry, weapons, metalwork, and carvings.

Alemchiba (1967) in his book *The Arts and Crafts of Nagaland* offers an illustration that the Nagas have numerous traditional handicrafts and there is much beauty to be found in their arts. The author maintains that arts and crafts have been one of the earliest creative experiences of the Nagas. Traces of this impulse are to be found in and around his dwelling and clothing, much long before reading and writing emerged as an essential need. The book also discusses the technological processes involved in spinning and weaving, wood carving, basketry, pot making, black smithy and the symbolic designs in textiles.

Also the paper *The Living Culture and Typo-Morphology of Vernacular-Traditional Houses in Kerala*, by Susilo (2013), accounts for observations of traditional-vernacular

houses in Kerala using the frameworks of typo-morphology and vernacular architecture. The observation yielded five general types of residential buildings concerning structural and spatial arrangements and their nature of development. The paper draws the idea that a rectangular hall with a verandah or porch provides the basic form for the more elaborate design in Kerala's traditional architecture. The observations also yield a glimpse of the living culture and the characteristic feature of Kerala's vernacular and traditional architecture, which shares characteristics with Southeast Asian architecture. This study confirms the existence of an uninterrupted continuity between the architecture of South India and Southeast Asia.

The methodology utilized by the author is the typo-morphological analysis (see Argan, 1965; Moneo, 1978) which examines existing types of residential houses and their complementary. Typo-morphology mapping is done to identify all possible factors that espouse the conceptualization of forms and space of the house. Using *Vernacular Matrix* (Papanek, 1995), the analytic categorization of types is cross-checked with other aspects such as culture, history, society, and geography to acknowledge driving forces embedded in the formation of Kerala's traditional-vernacular houses and living culture.

Naga Cultural Milieu: An Adaptation to Mountain Ecosystem is a book written by V. Nienu (2015). His works has contributed to the issues concerning Naga origin, physical and natural environment, climate, headhunting, symbolism in Naga culture etc. The book draws special references to the habitat, settlement patterns and the types of traditional Naga houses and structures. In the chapter Habitat and settlement patterns, Nienu gives an account of the traditional Naga houses and other structures dividing them into three categories (1) Public buildings; (2) Dwellings; and (3) Non – dwelling structure, primarily the log-drum shelter, skull house, granary, field rest-house, and field hut.

Change in the Naga culture and tradition has been observed in the writings of some scholars and researchers. Horam (1988) states that Christianity has given the Naga people new things but damaged the old images and cultural values of the Naga people. It destroyed Naga's religious and cultural dimension values, threatening family norms, social ethics and cultural identity, and meanings in the name of modernization. Added to this

view, Chasie (2004), in one of his works *Administrative and Social Factors: The Change in Naga Society*, observes that with the advent of Christianity, the world of the Nagas was now truly turned upside down as beliefs and value systems changed, traditional institutions and practices on which depended the fabric of society were undermined and relegated to the background, lifestyles changed, developed new habits, etc. All Naga beliefs and cultural practices were looked upon as pagan and to be shunned. They introduced change, but change threatened to completely sever all vital links to the Naga's cultural and historical roots.

Woodthorpe (1882) in his journal article *Notes on the Wild Tribes Inhabiting the So-Called Naga Hills, on Our North-East Frontier of India-Part II* discusses a peculiarity among all non-kilted tribes, which Woodthorpe again distinguishes them from the Angami tribe is the presence in their villages of a conspicuous building called the 'Bachelor's House' (Woodthorpe, 1882). In the larger villages, it is found two to three of such houses and in these types of houses, all the young men of the village, from the age of puberty till the marriageable age set up a house for them. According to Woodthorpe's observation, among the Rengmas, Lothas, etc., the bachelor's house is not a very imposing-looking building, being only rather longer than the other houses in the village, all of which are smaller as compared to those of the other tribes. The house is divided generally into a front room and the floor itself is the ground and a fireplace. On the floor, many of the household duties are performed, where vegetables are dried and in some houses are of bamboo matting, with thatched roofs. The crops are generally stored in rows of small raised houses just outside the villages. Again Woodthorpe's observation on the topographic influence in domestic architecture is best known from the manner in which the houses were set up. The hills here present long narrow ridges, along which are built the villages and the ridge itself, forming the main street, and all the houses built on either side facing inwards. This plan of allowing the front of the house rest on the ground, and running it out to the back on piles, does away with the necessity for leveling sites, and renders the houses more airy, though the smoke and dirt which thickly cover the interior

of the houses, walls, and roof alike, render them anything but pleasant habitations to anyone more fastidious than a Naga.

The popular Naga monograph series written by Hutton (1921) on *The Angami Nagas* and *The Sema Nagas* both published in 1921 and Mills *The Lotha Nagas* (1922), *The Ao Nagas* (1926), *The Rengma Nagas* (1937), J.H. Hutton's on *The Mixed Culture of the Naga Tribes* (1965) in the journal *The Journal of the Royal Anthropological Institute of Great Britain and Ireland*, gives detailed accounts on the house constructions, types of *morung* of various tribes, the layout of the streets in the villages and the orientation of the house. There are also accounts on superstitious beliefs and rules associated with the orientation of the houses in Naga villages.

Jamir, Vasa and Tetso (2014) in their book *Archaeology of Naga Ancestral Sites: Recent Archaeological Investigation at Chungliyimti and Adjoining Sites* (Vol-1) attempts to draw attention to the two seasons of excavation undertaken at Chungliyimti. Their work discusses about Naga ancestral sites dated between 10th century AD to as late as 17th century AD yielding a wide list of cultural assemblages – cord and paddle mark potteries, kaolin wheel made pottery, glass, jasper and carnelian beads, rice, millet, wheat and barley. The tool assemblage from stratified context yielded evidence of iron tools along with few ground stone tools. As reported by the authors, one of the key interesting features of Chungliyimti is the evidence of domestic architecture in the form of stone walls, rock-cut drainage, earth-cut storage pits, and evidence of residential structures which are typical of Ao, Chang, Khiamnungan, Konyak, Phom, Sangtam and Yimchunger house types.

The book *Traditional Naga Village System and its Transformation* authored by Nshoga (2009) describes the types of domestic architecture related to feast of merits performed by various tribes in Nagaland. The author also explains the types of raw materials that are used during the time of house construction.

In the edited volume *New directions in archaeology: Domestic architecture and the use of space: An interdisciplinary cross-cultural study*, Kent (1990) suggests that domestic architecture and the use of space investigates the relationships between the built environment and the organization space. The contributors of the volume are mainly

classical and historical archaeologists, anthropologists and architects, who from their various backgrounds provide some important insights into the interdisciplinary relationship. They explore the fundamentals of culture as expressed in technology, symbolism, socio-political organization and economics, and draw case studies from past and present groups from North America, South America, Africa and elsewhere.

Prianto, Bonneaud, Depecker and Peneau (2000) in their joint paper *Tropical - humid architecture in natural ventilation efficient point of view: A Reference of Traditional Architecture in Indonesia*, published in the journal *International Journal on Architectural Science*, Vol-1(2) enumerates that the environment for human in ancient times constitutes sources of life. This regulation has been prevailing and the traditional society gave us the understanding about the relation between building physical performance and climate condition. Their observation suggest that traditional architecture constitutes the component of climate in tropical-humid area such as air, temperature, wind, sun radiation and humidity that are needed to harmonize building and its surrounding nature. Their study aimed to provide explanation and description of tropical humid traditional architecture history in tropical-humid region in Indonesia and the influence of technology progress on residential building design to solve environment problems.

The House in Southeast Asia: A changing social, economic and political domain by Sparkes and Howell (2003) is an edited collection of papers that examines critically the concept of the house in Southeast Asia and to expand the concept in the changing social, economic and political environment in the region. Each chapter considers the notion of the house from the perspective of the author's ethnographic experience in the field, the result being a number of investigations that utilize various interpretations and aspects of the 'house concept' that converge and diverge throughout the collection. Thus, the different societies of Southeast Asia in this collection offer an incredible range of religions, kinship systems and architectural influences that reveal the usefulness and versatility of the concept.

The Living House: An Anthropology of Architecture in South-East Asia is a pioneering work by anthropologist Roxana Waterson (1990) that has become a classic in

its field. It is the first book of its kind to present a detailed picture of houses within the complex social and symbolic fabric of indigenous South-East Asian people.

The main focus of the book is on Indonesia, but in tracing historical links between architectural forms across the region, it reveals a much wider field of inquiry-covering all of the Austronesian people and cultures extending as far afield as Madagascar, Japan and the Pacific islands to New Zealand and Hawaii. As it probes the centrally significant role of houses within South-East Asian social systems, the book reveals new insights into the kinship systems, gender symbolism and cosmological principles of the people who build them, ultimately uncovering fundamental themes concerning the concepts of life force and life processes inherent in all of these cultures.

Some of the striking explanations in this book titled, *Inside Austronesian Houses: Perspectives on domestic designs for living* edited by Fox (1993) are the Lahanan Longhouse which holds the whole concept of ritual structure. The author describes the Longhouses as the archetypical form of Bornean domicile, although this form of dwelling is also found in other parts of the world. Much larger than most visitors expect, longhouses are built on piles and comprise a row of individual domestic units accommodated under one roof. This unusual form of architecture has provoked considerable speculation concerning the reasons for its development and for its persistence in contemporary societies which are otherwise rapidly changing.

In the late 20th century, indigenous construction methods began to incorporate modern materials and tools. Traditional elements such as thatch roofs were replaced with CGI sheets; timber and bamboo structures gave way to brick and reinforced concrete (RCC) frameworks, utilizing rods and binding wires. These changes led to more polished and refined symbolic designs, facilitated by advancements in technology.

1.5. Statement of Problem:

Although there exists numerous works on Naga society and culture, the emphasis on domestic architecture of the Naga tribes such as on the origins of such architecture, their adaptation pattern, as a symbol of power, wealth and identity and a host of other issues is found to be greatly deficient in many works emphasizing on the society and culture of the

region. Houses are often markers of ethnic identity; therefore, the present research attempts to study pertaining to the relevant components of domestic architecture such as the associated rituals in site selection, kinship pattern, marriages and other related symbolic meanings that are specific to each Naga community.

Waterson (1990) maintains that the house in South-east Asia represents the ‘circulatory of the process of life and death’, standing for the continuity of life, providing an abode for the spirits and undergoing a constant renewal or even a rebuilding on the same site. Also examining ‘the house’ can give insights into how societies reproduce themselves, how ancestors control the living and influence their lives and how immortality is achieved through ongoing reproduction or incarnation. Such critical concepts on the notion of the ‘house’ and other domestic architecture although seems equally relevant remain unexplored in a region like Northeast India, particularly with the Nagas. In the midst of the fast pace of influence of modern style house architecture in Naga rural villages, there has been drastic decline in the construction of traditional house architecture and along with it, the decline in traditional knowledge and associated skills with such construction. Given this context, the research also demand an urgent need to document the dying knowledge and the meanings associated with such architecture before they are lost.

1.6. Objectives of Study:

Based on the survey of both primary and secondary sources, it is apparent that there are now several scholarly works on Naga traditions, culture, folklores, festivals, attires, socio-polity etc., but failed to notice any works specifically directed towards the domestic architecture of the Nagas. Therefore, the present study is an attempt to fill this gap with the following objectives in mind:

- i). Explore the history, science, and technology of domestic architecture of the Nagas.
- ii). Examine the nature of adaptation of domestic architecture based on geographic and climatic factors, and also attempt to identify the various architectural forms and types.

iii). Identify the socio-cultural attributes and belief systems in the context of Naga traditional architecture.

iv). Aims to understand domestic architecture as a symbol of wealth, power and socio – cultural identity.

1.7. Hypotheses:

The following hypotheses are verified to be validated from the present research:

i). The varied Naga domestic architectural forms are a product of an adaptation process that evolved in the region.

ii). The variation in stilts and non-stilt in Naga architectural forms is a result of different adaptation patterns.

iii). Naga domestic architecture with its associated intrinsic values provides insights into other aspects of culture and social life.

1.8. Significance of Study:

Naga domestic architecture evolved through the ages is vividly reflected in the multiform house patterns and planning concepts, conditioned by the quintessential traditions, beliefs, and practices. The prevailing geophysical and climatic conditions have played a pivotal role in the choice of material, structural parameters and the selection of sites for dwelling.

Traditional Naga architecture is often based on eco-friendly principles. The use of locally-sourced materials and sustainable building techniques can offer valuable lessons in sustainable construction practices. This knowledge can be used as inspiration for contemporary architects and designers seeking to develop environmentally conscious designs. The architectural style of a community plays a vital role in shaping its identity and sense of place. By analyzing and understanding the unique architectural features of Naga homes, we can gain insights into their cultural identity and how they perceive and relate to their surroundings.

The study of Naga domestic architecture can also contribute to tourism and economic development of the region. As people become aware of the uniqueness of the

architectural heritage of the Nagas, such sensitivities can attract tourists and researchers interested in experiencing and learning about their built heritage. Architecture can also help explore clues about historical trade ties from affinities shared with other communities of the Northeast region. Architectural influences from such neighboring regions can be further examined and analyzed. This, in turn, can contribute to the local economy and promote cultural exchange.

Studying the domestic architecture of the Nagas holds several significances. It provides insights into the cultural practices, social structures, and historical development. By examining architectural styles, construction techniques, and spatial arrangements, researchers can better understand the Naga people's way of life, community dynamics, and adaptation to the environment. This study can also shed light on how traditional practices have evolved in response to modernization, influencing contemporary Naga society. The study on Nagas' domestic architecture will thus contribute to preserving the cultural heritage and promoting a deeper appreciation of the unique identity of the community under study.

The research directed on the importance of domestic architecture of Nagaland aim to draw relevant conceptual tools to understand the domestic architecture of the Northeast region and also at the same time, develop a better understanding of their variation and types in relation to the tropical climate, topography, technology, economy, belief systems etc. As domestic architecture of Nagaland is rooted in its history, culture and traditional religion, the study has vast scope to contribute to the relevance of not only to the various fields of architecture or art history but also to all other interdisciplinary subjects.

1.9. Methodology:

In order to study the continuity and change in the cultural tradition of any human society, it is necessary to take into account historical expansion. Unfortunately, in the case of the Nagas, documentation on traditional architecture is scanty. Most authors who wrote about Naga cultural tradition did not make the subject of domestic architecture their priority, and so the written documents are limited.

The research is a case study, engaging both in qualitative and quantitative methods. For the purpose of documentation, the research is based on both primary and secondary sources. Primary data have been collected from the field through the use of prepared questionnaires, personal and group interviews, and direct field observation methods. To study the surviving traces of house architecture, detailed village-to-village surveys have been undertaken in the villages sampled for the study.

In addition to the primary sources, various secondary sources pertaining to the research have also been utilized, such as published and unpublished archival materials pertaining to colonial accounts of Naga architectural forms, references to old images produced by colonial anthropologists, journals, and seminar papers, etc., related to the area of research.

1.10. Theoretical Framework:

The domestic architecture of the Nagas is influenced by various cultural, environmental, and functional considerations. Naga houses are often designed to reflect the community's social structure, traditions, and rituals performed while also adapting to the local climate and available resources. Many Naga communities practice stilted architecture, which helps protect against floods and provides storage space beneath houses. Additionally, the use of locally sourced materials and construction techniques, use of tools, and measurement techniques are common, promoting sustainability and minimizing environmental impact.

The most holistic approaches to Naga domestic architecture house constructions embrace contextual architecture, vernacular architecture, sustainability, social organization, symbolism, ritualism, and adaptability. A focus on these fundamental aspects shed light on the holistic nature of Naga domestic architecture, which not only addresses the physical requirements but also reflects the cultural, social, and spiritual dimensions of the community. Naga architecture is deeply rooted in community's ethnic identities and traditional lifestyles. In the present research, the theoretical framework for understanding Naga domestic architecture is approached from few interrelated aspects.

The work of Roxana Waterson (1990) is the main source of theoretical inspiration for the present study. Waterson's work on the Indigenous architecture in Southeast Asia conceptually views architecture, "...not just the provision of shelter from the elements, but the creation of a social and symbolic space – a space which both mirrors and moulds the worldview of its creators and inhabitants" (Waterson, 1990, p. xv). In addition to their technological and cosmological considerations, and the ideas and beliefs about buildings considered powerful, sacred and alive, she also examines how the 'house' maybe viewed not only as a physical structure but how kinship and social relations define the use of spaces within houses and how such rules about spaces in these houses in turn drive individuals to act out these relations (see Waterson 1990). Her premise emphasizes the understanding of a house as a living and breathing organism that reflects the cultural beliefs, social hierarchies, and economic circumstances of the community it belongs to. It highlights how architecture goes beyond mere functionality and aesthetics to become a carrier of meaning, memory, and rituals. While her work offers valuable insight into the architectural traditions of Southeast Asia, it may not fully capture the distinctiveness of other architecture elsewhere. Naga architecture, like many indigenous architectural styles, has its own unique characteristics, cultural significance, and adaptations to the local environment. Therefore, when studying Naga domestic architecture, it is essential to recognize its specific attributes and consider them in the present research to gain a more comprehensive understanding. Comparative analysis within the Southeast Asian context can still be informative, but it should be complemented by a detailed examination of the Naga architectural traditions in their unique cultural and geographical setting.

Amos Rapoport's (1969) *House Form and Culture* offers a valuable theoretical framework for understanding Naga traditional architecture, particularly through his emphasis on the cultural determinants of house form. Rapoport argues that the design, orientation, spatial organization, and decoration of houses are shaped primarily by cultural beliefs, social organization, and symbolic meaning, rather than by technological or economic constraints alone. This concept is directly applicable to Naga architecture, where the form and layout of homes, *morungs* ('youth dormitories'), and ceremonial

structures reflect deep-seated cultural values tied to kinship, ritual practices, and identity. Rapoport's attention to orientation – where cardinal directions, cosmological beliefs, and landscape features influence house siting – also resonates with Naga traditions, where omens, terrain, and spiritual considerations guide the placement and direction of structures. However, while his broad comparative approach provides valuable insights, the study of Naga architecture must also incorporate locally specific cultural knowledge drawn from oral histories, indigenous cosmologies, and postcolonial experiences unique to the region. Combining his theoretical lens with ethnographic work on Naga spatial symbolism, ritual practices, and contemporary transformations offers a richer, more contextually grounded understanding of how built forms encode cultural meaning in Nagaland.

Mircea Eliade's (1959) seminal work, *The Sacred and the Profane: The Nature of Religion* also offers a vastly relevant theoretical approach for examining Naga domestic architecture, especially in relation to sacred symbolism, cosmology, and ritual spatiality. His core argument – that space is not neutral, but rather divided into sacred and profane realms – provides a cosmological framework through which the Naga house can be interpreted as a sacred microcosm. This is particularly applicable to traditional Naga houses, where the act of house construction, the spatial layout, and the symbolic carvings are deeply embedded in ritual meaning and cosmic orientation. Another key element in Eliade's conceptual framework is the orientation of sacred structures toward specific cardinal directions, celestial bodies, or sacred landscapes. Traditional Naga houses also reflect this orientation logic: houses are often aligned to face eastward, symbolizing the rising sun – a marker of life, fertility, and renewal (Nshoga, 2014).

CHAPTER-2

Naga Domestic Architecture: Tools and Measurement Techniques

2.1. Introduction:

The survey of tools and measurement techniques in Naga domestic architecture has shed light on the unique building practices and cultural significance of the structures within the Naga tribes. The Nagas, residing in Northeast India and parts of Myanmar, have a rich architectural heritage influenced by cultural practices from their ancestors, geographical conditions, and available raw materials.

The traditional constructions of Naga architecture, while utilizing a range of locally available raw materials, tend to share one characteristic feature; they are held together entirely without using iron nails but utilizing a variety of skilled techniques of joining and mortising and sometimes reinforced by pegging, wedging, or binding with bamboo and creeper ropes such as rattan or cane.

While constructing domestic architecture, Naga ancestors were yet to use modern scientific technologies such as tools or measurements. According to Naga oral tradition, domestic architectural construction was one of the competitions based on economic lines to earn social status. The more an individual accumulates wealth, the better feasting and longer days of rituals performed, which is exhibited in their traditional architectural constructions such as their symbolism and designs. It is not easy to assess, particularly its conservation or innovation, because it differs from society to society bereft of any written records, and the images that might help us identify continue to change and develop in styles.

Historical continuity is one of the most crucial factors determining traditional architectural form, especially in rural areas. During the survey of several Naga villages, no written accounts were found, but most of such accounts were in the form of oral

tradition. In the quest for the domestic architecture of the Nagas, only a few villages maintained the traditional system of house construction, while the rest were on the verge of complete extinction, in search of modern tools, materials, and technologies that are easier to construct and more durable.

With the advancement of technologies, the indigenous forms of traditional architecture have witnessed a drastic change and development through the use of readymade materials, tools, and symbolic designs which are more sophisticated and refined. The CGI sheets replaced the natural thatch, while the bricks replaced the timber or wooden plank, and bamboo, and finally the MS iron rods and binding wires replacing the creeper ropes.

The tools used by the Nagas to construct domestic architecture include various hand and power tools. Some modern tools commonly used are hammers, saws, drills, levels, grinders, measuring tapes, screwdrivers, chisels, and welding tools for more efficient cutting and assemblages. The main tools and materials used during construction of Naga domestic architecture in the olden times are still available. Men and women use various tools; however, specific tools are used only by skilled labourers or persons. Also, there are tools considered as taboo to be used by women and minors.

2.2. Dao:

The ‘Dao’ (an Assamese term referring to a ‘chopper’) variously known by different names in the local vernacular language, is an indispensable tool which serves as a multipurpose tool of the Nagas that plays a vital role in the design and construction of houses, wood cutting, bamboo, and vegetation purposes (Plate 1). The significance of the *dao* in Naga architecture extends beyond mere construction; it holds deep cultural, social, and spiritual importance for the Naga people. The various structural designs of the *dao* are an expression of the unique bravery and cultural identity of the Nagas and the uses of specific building techniques, materials, and spatial arrangements are tied to their traditional way of life and belief systems.

The primary tools for construction of domestic architecture are the *dao*, axe and spade. *Dao* is used for felling trees, cutting bamboo, creeper ropes, and other manual work. The other primary purposes, besides the construction of traditional architecture, are its use by the craftsman for splitting bamboo to make handicraft bamboo baskets or mats in the absence of rod or metal. In the past, restrictions were maintained between the genders using *dao*. It has been narrated by elders that, women or young girls were barred from using *dao* freely because of fear of injuries and accidents (*Ephuteni*), and socially women were considered inferior to men. Overall, the use of *dao* in house constructions can create spaces that are functional, beautiful, and in harmony with the natural world and past cultural traditions (on the colonial accounts of *dao*, see Mills, 1926, 1927; Hutton, 1921a, 1921b).

In Naga culture, the *dao* is considered both a sacred object and a practical weapon, deeply embedded within ceremonial rituals that accompany house construction (Mills, 1922; Hutton, 1921). The *dao* is understood to possess protective qualities, warding off malevolent spirits and negative energies that might threaten the safety and sanctity of the home (Oppitz et al., 2008). During significant moments of the construction process – especially during foundation – laying and the gathering of raw materials – the *dao* is often ritually invoked to ensure the house is blessed and protected from unforeseen harm (Mills, 1922; Shimray, 2007).

Traditionally, the *dao* serves as a versatile tool used for woodworking, bamboo work, carving, and shaping structural elements such as wooden beams, posts, and walls (Hutton, 1921). Intricate wooden carvings, a hallmark of Naga houses, are frequently created using the *dao* alongside the axe and adze. These carvings bear symbolic meanings representing family lineage, social status, spirituality, and connections among clans and communities. In the early stages of construction, the *dao* plays an essential role in felling trees, splitting bamboo, and preparing raw materials required for posts, beams, walls, and roofs (Mills, 1922).

The *dao* also serves as a status symbol, representing the house owner's wealth, social standing, and craftsmanship (Shimray, 2007). The design, decoration, and

craftsmanship of the *dao* vary across Naga tribes, with each *dao* often reflecting the prestige of the family building the house. Many of these *daos* are passed down through generations, carrying unique personalized features and motifs that symbolize familial and clan identities, further solidifying their importance in Naga cultural identity (Oppitz et al., 2008).

Additionally, the *dao* carries spiritual connotations tied to the Naga belief system, where specific rituals involving the *dao* invoke blessings from deities, ancestors, and nature spirits to ensure the prosperity and stability of the home (Shimray, 2007). This ritual usage is particularly important during site selection, material collection, and the initial stages of construction. As a result, the *dao* occupies a dual role in Naga domestic architecture, functioning as both a practical tool in physical construction and a spiritual instrument integral to the rituals and cultural practices that ensure the home is both structurally sound and spiritually protected (Hutton, 1921).

2.3. Spade:

In Naga traditional architecture, the spade also holds significant importance, symbolizing cultural heritage, craftsmanship, and functional design. Though primarily an agricultural tool, the spade's role in house construction extends beyond practical utility to encompass cultural, spiritual, and social meanings (Hutton, 1921; Mills, 1922). Spades are essential in the preparation and gathering of materials for traditional Naga homes, which are built from wood, bamboo, and thatch. Spades are used to dig and shape the ground, excavate post-holes for foundations, and create drainage channels – practices crucial to ensuring the stability and durability of traditional structures (Plate 2).

The spade is also a symbol of craftsmanship in Naga society. The ability to use it effectively in tasks such as leveling the ground, digging foundations, and preparing land for construction demonstrates the artisan's experience and expertise. Effective use of the spade not only ensures structural precision but also highlights the artisan's respect for traditional construction methods, which are passed down through generations (Mills, 1922). In certain parts of the construction process, the use of the spade is ritualized,

accompanied by prayers or offerings to seek blessings from spirits and ancestors, reinforcing the Naga worldview of respectful coexistence with the land and environment (Hutton, 1921).

As Naga society is deeply communal, house construction is a cooperative effort involving the entire village, where the spade becomes a key tool in this collective labor. Its use symbolizes communal cooperation, with each individual contributing to the shared goal of erecting a house, thereby reinforcing social bonds (Shimray, 2007). The spade also reflects sustainable practices, as it is used to dig, clear, and harvest materials in a manner that respects ecological balance. By relying on natural materials such as bamboo, wood, and thatch, and using simple tools like the spade, the Naga people practice sustainable construction rooted in environmental stewardship (Oppitz et al., 2008).

The spade's significance also extends to defensive architecture. In the past, Naga villages and houses were designed with defensive elements to protect against inter-tribal raids. Spades were crucial in digging trenches, creating protective earthworks, and fortifying village boundaries, illustrating how this humble tool was central to both construction and defense (Hutton, 1921; Mills, 1922). Such practices reveal the historically volatile environment in which the Nagas lived and the critical role tools like the spade played in community survival.

As a transmitter of cultural knowledge, the spade is also integral to inter-generational learning. Young Naga boys are traditionally taught to use tools like the spade, *dao*, and axe as part of their initiation into the *morung* (bachelor's dormitory), an institution central to the transmission of indigenous skills and communal values (Hutton, 1921; Shimray, 2007). This process ensures that traditional construction knowledge, techniques, and ecological ethics are preserved across generations, maintaining cultural continuity despite changing times.

The spade further embodies the value of hard labor in Naga society. Its use in both house construction and agriculture reflects the resilience, resourcefulness, and self-reliance that are central to Naga identity. The spade thus becomes not merely a tool but a symbol of the industrious spirit of the community. While traditionally a gardening and

farming implement, the spade's multi – functionality ranging from excavation and shaping materials to mixing mortar and tamping soil – makes it indispensable in both agriculture and architecture (Shimray, 2007).

Besides the spade, other essential tools in Naga construction include the *dao*, axe, adze, and chisels, each playing a specialized role. The *dao* and axe are used for felling trees and splitting bamboo, while chisels are employed for intricate carvings and decorative work. Mini axes assist in woodcraft decoration, and small wooden hammers are preferred for fine carving to prevent accidental damage to the work piece (Mills, 1922). Each tool, including the spade, contributes not only to the physical process of construction but also to the spiritual and cultural values embodied in Naga architecture.

2.4. Axe and Adze:

In Naga domestic architecture, the axe is one of the most important and symbolic tools used in the construction of homes, communal spaces, and other architectural elements. It plays a crucial role in shaping both the physical structures and the cultural identity of the Naga people. The axe is not only a functional tool for gathering and shaping materials but also holds deeper cultural, social, and spiritual significance.

The axe and adzes are essential tools in traditional Naga architecture, where wood serves as the primary material for constructing walls, beams, posts, roofs, flooring, and decorative elements such as the gable horn or *Echo (Lichicho)* (Plate 3). The axe is primarily used for felling trees and shaping timber, while the adze refines surfaces and adds intricate details. These tools ensure that structures are not only functional but also aesthetically aligned with cultural values (Jamir, 2014).

Mastery of the axe and adze is highly valued, as their effective use requires specialized craftsmanship passed down through generations. Skilled artisans, often revered within the community, are entrusted with carving symbolic motifs such as animal figures, celestial designs, and representations of mithun or buffalo horns, signifying wealth and successful feasts of merit. This craftsmanship represents cultural pride and serves as a living link to ancestral traditions.

House construction, especially for feast donors and *morung* (youth dormitories), is a collective task that strengthens communal bonds through shared labor. The axe and adze play a focal role in this cooperative process, reinforcing values of mutual support. In addition, these tools embody a spiritual connection to nature. Before felling large trees, ritual prayers are offered to seek divine blessings and protection, reflecting the Naga worldview of respectful coexistence with the environment.

The axe and adze also symbolize resilience and adaptability. Historically, the Nagas built durable homes in rugged terrains using these tools, adapting to challenging landscapes while creating sturdy shelters and defensive structures. The axe, doubling as a weapon, was crucial for both construction and community defense, illustrating the intertwined nature of architecture and protection.

Beyond their practical use, the tools are integral to rituals performed during house construction, ensuring spiritual harmony and the well-being of inhabitants. The Naga toolset extends beyond the axe and adze to include wooden mallets, hand drills, and bamboo splitters – each contributing to practical building tasks and ritual events, such as the construction of ceremonial houses and the commemoration of feasts of merit. This fusion of technology, tradition, and spirituality reflects the holistic approach the Nagas adopt toward architecture, where every tool embodies both function and cultural meaning.

The axe is particularly indispensable for cutting, trimming, and shaping large pieces of timber, ensuring that the final structure is sturdy and functional. The adze refines wood surfaces and is responsible for adding intricate carvings to architectural elements. Crafting wooden components with precision requires considerable skill, and those who excel in the use of these tools are regarded as highly skilled artisans.¹ Thus, both tools symbolize craftsmanship, tradition, and cultural pride in Naga society.

Naga traditional houses, including the *morung* and the dwellings of feast donors, are built through collective effort and are often adorned with elaborate wooden carvings. Felling trees, cutting logs, and shaping beams require collaboration, and the communal use of the axe and adze strengthens social cohesion and reinforces collective identity.

The axe also represents the Naga people's deep connection to the environment. Felling trees and harvesting wood are done with great reverence, accompanied by rituals and prayers for divine protection. This respect for nature reflects the Naga worldview of sustainable living and ecological balance.

The axe and adze further embody the strength and resilience of the Nagas, who historically lived in challenging environments with harsh terrain. Building durable homes was essential for survival, and these tools enabled the Nagas to adapt, innovate, and create resilient structures, representing both physical endurance and cultural perseverance.

In Naga culture, house construction is often interwoven with spiritual rituals to ensure the work is blessed by the spirits. The axe plays a mediating role in these ceremonies, as its use is accompanied by prayers and offerings seeking prosperity and protection for the inhabitants. Beyond construction, the axe served as a defensive weapon, essential for creating fortified structures and protective platforms. This dual functionality – as a tool of creation and protection – reflects the Naga readiness to defend their community and cultural identity.

The sustainable use of these tools further highlights the Naga people's resource management ethos. The axe and adze facilitate selective harvesting of timber, ensuring that forests regenerate. This responsible approach to resource use ensures minimal environmental impact and aligns with Naga ecological principles.

It has been observed that, the *Echo* or *Lichicho*, a symbolic wooden decoration erected in front of a house, further emphasizes the cultural significance of these tools. The adze is used to carve elaborate motifs – depicting human figures, wild animals, celestial symbols, and *mithun* or buffalo horns. These decorations commemorate successful feasts of merit and serve as visible symbols of wealth, bravery, and community status. Traditionally, the adze is handled only by skilled craftsmen, reinforcing its association with expertise and cultural pride.

Overall, the axe and adzes are much more than mere tools in Naga society. They embody craftsmanship, environmental stewardship, cultural memory, and spiritual connection. Through their careful use, the Nagas maintain a living link to their ancestors,

environment, and cultural heritage, making these tools essential to their architectural legacy.

2.5. Crowbar (*Zhikumi*), Pickaxe (*Kathi*) and *Kethi*:

In the context of Naga traditional architecture, tools such as the crowbar, pickaxe, and *kethi* (Plate 4, 5 & 6) play a crucial role but are often overlooked role in the construction and preparation of materials for building houses. While previous scholarship has emphasized more iconic tools like the *dao*, axes, and spades, field observations through interviews with Naga traditional house builders highlight the significance of these other tools in foundational work. The crowbar and pickaxe are particularly important for digging post – holes, loosening compacted soil, and breaking stones during the preparation of house foundations. This is especially critical given the challenging topography of Naga villages, which are often situated in hilly and rocky environments. Builders rely on these tools to clear land, remove roots, and shape the ground, ensuring a stable base for wooden beams and structural posts. Crowbars and Pickaxe are multipurpose tools useful in various is should be cited should be taken when using these tools to avoid damaging materials or causing injury.

The *kethi*, a specialized digging tool, is used for creating deep or narrow post – holes that cannot be effectively reached with broader tools like spades or pickaxes. This tool also plays a key role in finer work such as adjusting mud – retaining walls and preparing the edges of grave sites. These tools contribute to sustainable construction practices, allowing builders to work with precision, minimizing environmental disruption, and maintaining balance between construction needs and ecological preservation.²

Additionally, the communal nature of Naga house construction means that these tools are shared and passed among community members during work, reinforcing the social bonds and collective labor ethos central to Naga society. The process of learning to use these tools, passed from older to younger generations, is an essential part of inter-generational knowledge transfer, ensuring that traditional building skills are preserved. These tools, beyond their functional importance, carry cultural meaning – representing

hard work, resilience, and adaptability to the difficult terrain of the Naga homeland. They also remain essential for on – going maintenance and repairs, reflecting their enduring value across the full lifecycle of a traditional Naga house.

2.6. Wooden mallet/hammer:

In Naga traditional architecture, indigenous handmade tools such as the wooden mallet hold significant cultural and practical value. This traditional tool plays a dual role – both functional and symbolic – in the construction of Naga homes. As traditional Naga houses are primarily constructed using natural materials such as wood, bamboo, thatch, and locally known as *tokupatta* [*Trachycarpus fortunei* (*Arecaceae*)], the wooden mallet becomes indispensable in assembling and securing structural components. In particular, wooden mallets are used for joining wooden beams, posts, and rafters and for tapping delicate joints, such as mortise and tenon, into place without splitting or damaging the materials (Hutton, 1921; Mills, 1922).

A key function of the wooden mallet is to drive wooden pegs or fasteners into position – a traditional joinery technique crucial to the structural integrity of Naga houses (Jamir, 2014). These fasteners secure key components of the house, including the framework; roofing supports, and floor structure, ensuring both durability and flexibility in the face of environmental changes (Shimray, 2007). The controlled force applied by the wooden mallet helps preserve the aesthetic and structural quality of the wood, a critical concern when working with locally harvested materials (Oppitz et al., 2008).

In addition to structural assembly, the wooden mallet plays a decorative role, particularly when paired with chisels for carving intricate designs on gable horns, front wall posts, and door frames. These carved motifs are more than ornamental; they carry deep cultural significance, representing tribal identity, spiritual beliefs, and ancestral connections. Thus, the wooden mallet becomes not only a construction tool but also an instrument of cultural expression, ensuring that each house is both a home and a visual narrative of lineage and belief.

The wooden mallet also symbolizes craftsmanship and cultural continuity in Naga society. Building a house is not solely a technical endeavor but a rite of passage—a communal act where family and clan members work together, each contributing their labor, knowledge, and skills (Hutton, 1921). The rhythmic hammering of the mallet during construction symbolizes the unity and collective spirit of the community, transforming the act of building into a ceremonial performance that binds individuals to their ancestral heritage (Shimray, 2007).

The material from which the wooden mallet is made also holds cultural importance. Typically crafted from strong, durable hardwood sourced from culturally significant trees, the mallet embodies the values of endurance and resilience (Jamir, 2014). This careful selection and crafting process reflects the Naga people's deep respect for nature, ensuring that the wood used in construction is chosen with reverence and care, in line with their indigenous environmental ethics (Oppitz et al., 2008).

Beyond construction, smaller versions of the wooden mallet are also used for various domestic and agricultural purposes, such as splitting bamboo, shaping timber, and weaving bamboo mats for drying paddy rice. This versatility makes the mallet an essential household tool, used not only in building homes but also in agricultural and daily life contexts (Hutton, 1921). Larger, heavier mallets are employed for more demanding construction tasks, while smaller mallets are favored for finer work, such as carving ceremonial symbols like the mithun or buffalo heads displayed after a successful feast of merit (Mills, 1922).

Moreover, wooden mallets offer distinct advantages over metal tools, particularly in the context of Naga construction, where materials like bamboo and thatch require softer impacts to avoid damage. The mallet allows for greater control and precision, reducing the risk of splintering delicate components (Plate 7). Unlike metal hammers, wooden mallets do not rust, ensuring their longevity with minimal maintenance—an important quality in humid monsoon climates (Shimray, 2007). Additionally, the reduced noise generated by wooden mallets compared to metal tools makes them particularly suitable for residential construction in tightly knit villages (Oppitz et al., 2008).

Ultimately, the wooden mallet serves not only as a practical tool but also as a symbol of cultural identity, craftsmanship, and environmental stewardship. Its role in traditional house construction exemplifies the Naga people's holistic approach to building – where technical skill, cultural meaning, and environmental respect converge to create homes that are both structurally sound and culturally resonant (Mills, 1922). Through the continued use and teaching of mallet craftsmanship, traditional knowledge is transmitted across generations, preserving the cultural heritage embedded in Naga architecture (Hutton, 1921; Shimray, 2007).

2.7. Sickle and mini assorted chisels:

According to oral sources, the sickle is a farming tool used for centuries in many parts of the world to harvest crops. However, it also has significant cultural and historical significance, particularly in the context of domestic architecture. The sickle is used for cutting thatch (*Imperta cylindrica*) and hay or straw (Plate 8). A couple preparing to construct a house will keep the raw materials ready, and when the time comes, the couple shall invite a particular age group (*Kekhro-zhimi*) who will sleep in their house, friends, relatives, or neighbor to help to expurgate thatch in the month of November and December immediately after the paddy harvest. After soaking in the sun and allowing it to dry for days or month, they will go, collect and carry home the thatch in the month of January or February.³

Among the various Naga tribes, traditional tools such as the sickle and mini assorted chisels hold both practical and cultural significance. These tools are essential not only for the construction, maintenance, and decoration of Naga dwellings but also for sustaining agricultural and artisanal practices that are deeply embedded in the region's cultural heritage (Horam, 1975; Fürer-Haimendorf, 1969).

The sickle, a vital agricultural tool, plays a particularly important role in Naga architecture, as its use extends from harvesting crops to gathering construction materials. Primarily employed to harvest thatch, rice, millet, and other cereals, the sickle contributes to ensuring the food supply that supports families engaged in house construction (Mills,

1922). In Naga villages, bamboo, wood, and other plant materials used in construction are harvested from nearby forests and fields, a process that depends heavily on the sickle (Hutton, 1921, p. 144-146). It is used to cut bamboo stalks, reeds, and thatch, as well as for clearing weeds, all of which are crucial for constructing walls, floors, and roofs of traditional homes (Longchar, 2011, p. 67-69).

The sickle also holds symbolic significance in Naga cultural and spiritual life. It represents the connection between human activity and nature, as harvesting materials for house construction is often accompanied by ritual practices that reflect the tribe's spiritual connection with the land (Shimray, 2007). In some ceremonial contexts, the act of cutting materials with a sickle is incorporated into the oral traditions, signifying ancestral blessings for new homes and reinforcing the sacred bond between the people and their environment (Jacobs, 1990).

Alongside the sickle, mini assorted chisels occupy an equally important place in Naga architecture, especially in the ornamental and symbolic carving of wood. These chisels play a key role in the meticulous crafting of architectural elements, particularly in the homes of high-status families, sacred spaces, and ceremonial structures (Oppitz et al., 2008). Skilled artisans, often highly respected within the community, handle these tools, as the delicate carving process requires both technical mastery and deep cultural knowledge (Horam, 1975).

Mini chisels are indispensable for shaping wooden elements such as front walls (*Echo or Lichicho*), doors, and village gates (Plate 9 & 10). These tools enable the creation of intricate designs that are not merely decorative but also carry cultural and symbolic meanings. Carved motifs often represent tribal identity, historical narratives, and ancestral connections, serving as visual records of the community's lineage and worldview (Oppitz et al., 2008). Traditional designs carved using these chisels include geometric patterns, human figures, animal motifs, and celestial symbols like the sun, moon, and stars.

Furthermore, mini assorted chisels are essential for decorating ritual spaces such as the *morung* (bachelor's dormitory), a social, cultural, and spiritual hub where young men receive communal education (Hutton, 1921). The crafting of ritual objects or

architectural elements within the *morung* requires exceptional precision, as these carvings serve to reinforce the spiritual and cultural continuity of the tribe.

These tools are never entrusted to unskilled hands, as creating carved symbols on posts, pillars, and gable horns requires both technical expertise and cultural literacy (Fürer-Haimendorf, 1969). As such, the mini chisels embody the fusion of artistry and heritage, ensuring that each carved motif contributes to the cultural richness and architectural beauty of the built environment.

Together, the sickle and mini assorted chisels symbolize the inseparable relationship between utility and cultural expression in Naga society. While the sickle ensures that construction materials are responsibly gathered from the land, the chisels transform these materials into works of art that preserve ancestral knowledge and cultural memory (Jacobs, 1990). In this way, these traditional tools play an essential role not only in sustaining livelihoods but also in safeguarding cultural identity across generations.

2.8. Hand drill:

The Indigenous hand drill holds a vital place in Naga traditional architecture, serving as an essential tool in the construction of houses, village gates, and other architectural structures. The use of the hand drill in Naga architecture is not only a reflection of craftsmanship but also demonstrates a profound understanding of local materials and environmental conditions (Plate 11). According to Smith (2020), traditional tools such as the hand drill play a crucial role in preserving cultural heritage by allowing Indigenous communities to construct architectural structures that align with their cultural values and available natural resources. In the Naga context, the hand drill is primarily employed for drilling holes, joining structural components, and assembling carved wooden elements, making it a critical instrument in traditional construction practices. This tool embodies a high level of craftsmanship and cultural significance, as it continues to be used despite the increasing influence of modern technology in construction (Jones & Brown, 2021).

The practical role of the hand drill in traditional Naga architecture is particularly evident in the construction of large wooden beams, house posts, and roofing structures.

These elements, often made from locally available materials such as wood, bamboo, and cane, require precise joinery to ensure structural stability. According to Jones and Brown (2021), Indigenous communities commonly utilize traditional tools to minimize environmental impact while promoting sustainability in construction. Similarly, Naga craftsmen use hand drills to bore circular holes in wooden beams to fit pegs or dowels, allowing structural components to be joined securely without modern fasteners. This technique demonstrates a sustainable approach to construction, as it eliminates the need for industrial materials while ensuring the durability and stability of the structures (Smith, 2020). The continued reliance on such tools not only enhances construction efficiency but also promotes a deeper connection between the community and its natural environment.

In addition to its practical functionality, the hand drill holds significant cultural relevance in Naga architecture, particularly in the construction of *morungs* ('bachelor dormitories') and village gates. *Morungs* are considered the most iconic architectural structures in Naga villages, symbolizing the social and cultural identity of the community (Jones & Brown, 2021). These structures are often adorned with elaborate carvings representing mythological symbols, clan identities, and social hierarchies. Smith (2020) emphasizes that the hand drill plays a critical role in assembling these carvings, as it allows craftsmen to secure carved wooden panels through precision drilling. This process ensures that both the structural and aesthetic elements of traditional Naga buildings are firmly connected, preserving their cultural authenticity. The continued use of the hand drill in constructing *morungs* and other culturally significant structures underscores its role as a tool for cultural preservation and traditional knowledge transmission.

The significance of the hand drill also extends to knowledge transfer and the preservation of traditional craftsmanship in Naga society. Smith (2020) notes that traditional tools, such as hand drills, are often passed down from one generation to another, facilitating the intergenerational transmission of construction skills and Indigenous knowledge. This is particularly evident in Naga architecture, where craftsmanship is regarded as a symbol of cultural identity. The skillful use of the hand drill is taught from elder craftsmen to younger generations, ensuring the continuity of

traditional architectural techniques. This not only fosters cultural resilience but also strengthens community bonds through shared knowledge and craftsmanship (Jones & Brown, 2021). Therefore, the hand drill is not merely a construction tool but also a symbolic instrument of knowledge preservation in Naga architecture.

Furthermore, the use of the hand drill promotes sustainability in Naga architectural practices by reducing the reliance on industrial materials. According to Jones and Brown (2021), sustainable Indigenous architecture emphasizes the use of locally sourced materials and traditional tools to minimize environmental degradation. This aligns with Naga construction practices, where materials such as wood, bamboo, and cane are predominantly used, and the hand drill serves as a vital instrument in ensuring the integrity of wooden structures. The reliance on manual tools, such as the hand drill, reduces the environmental footprint of construction activities while simultaneously preserving cultural heritage (Smith, 2020). This practice resonates with global discussions on sustainable architecture, where traditional knowledge systems offer valuable insights into environmentally responsible building methods (Jones & Brown, 2021).

The cultural importance of the hand drill is further amplified in the construction of village gates, which hold immense symbolic value in Naga society. These gates, often featuring elaborate wooden carvings, are emblematic of protection, community identity, and social unity. According to Smith (2020), the hand drill facilitates the secure assembly of wooden panels and decorative carvings, ensuring that both practical functionality and cultural symbolism are preserved. Additionally, Jones and Brown (2021) assert that Indigenous tools like the hand drill contribute to cultural sustainability by allowing communities to maintain their architectural identity despite the influences of modern construction techniques. This reinforces the understanding that traditional tools, like the hand drill, are not merely mechanical instruments but also powerful symbols of cultural resilience.

Overall, the Indigenous hand drill serves as a fundamental tool in the construction of traditional Naga architecture, contributing significantly to both practical utility and cultural preservation. Its role in joining wooden beams, assembling carved panels, and

securing structural components underscores its practical importance in traditional construction practices (Smith, 2020). More importantly, the hand drill facilitates the transmission of Indigenous knowledge across generations, ensuring that traditional craftsmanship and cultural identity are preserved (Jones & Brown, 2021). As modernization continues to shape contemporary construction practices, the continued reliance on traditional tools like the hand drill highlights the importance of cultural preservation and sustainable construction methods. Thus, the hand drill in Naga architecture not only serves as a practical tool but also embodies a profound cultural and environmental philosophy that underpins sustainable Indigenous architecture.

2.9. *Nyopvo and Nyosü:*

Fieldwork observations from Phek District on Naga domestic architecture reveal a profound connection between traditional materials, tools, and the cultural identity and sustainable practices of the Naga community. In addition to the utilization of bamboo for crafting tools like *Nyopvo*, several other aspects of Naga domestic architecture emphasize cultural heritage and environmental consciousness.

Bamboo, being one of the primary construction materials, is also crafted into various domestic tools such as baskets or *Nyopvo*, primarily used for ploughing and carrying mud during site construction. This tool holds multiple practical and cultural significances. Bamboo, a renewable and sustainable resource, grows rapidly and can be harvested annually with minimal environmental impact. Its high strength – to – weight ratio and flexibility make it ideal for crafting tools and equipment, allowing it to withstand bending and stretching during use. The use of bamboo crafted *Nyopvo* is deeply ingrained in Naga culture, frequently appearing in traditional practices and crafts. Employing bamboo in construction emphasizes cultural identity and the preservation of traditional building techniques. It is generally more affordable than modern materials in terms of transportation and production costs. Additionally, the use of bamboo reduces reliance on heavy machinery, thereby minimizing soil erosion, noise pollution, and environmental disturbances. Even after its decay, bamboo remains non-hazardous, promoting eco–

friendly construction processes. Thus, the use of bamboo *Nyopvo* in site construction aligns with sustainable practices, cultural values, cost-effectiveness, and overall efficiency.

Another traditional tool, *Nyosü*, crafted from wooden bark, is widely used for ploughing mud during site clearing in architectural construction. This practice holds deep practical and historical significance across various Naga communities. The use of wooden tools honors ancestral practices and embodies environmental consciousness, as wooden tools are biodegradable and eco-friendly. Locally crafted wooden tools are often adapted to specific environmental conditions, being lighter and easier to maneuver, making them suitable for working with certain terrains like clay or silt. In some tasks, traditional wooden tools prove more effective than modern equipment as they do not require power backup or fuel, making them ideal for resource-limited areas. Additionally, traditional tools carry symbolic value, representing the commencement of construction with respect to local traditions and signifying the fusion of modern and age – old practices.⁴

Preserving traditional knowledge and local craftsmanship is essential for ensuring sustainable construction practices. Promoting the continued use of *Nyopvo*, *Nyosü*, and other handcrafted tools minimizes environmental degradation and fosters cultural pride. Integrating traditional materials and methods with contemporary construction can create a balanced architectural approach where modernity and tradition coexist harmoniously (Plate 12 & 13).

2.10. Wooden and Bamboo ladder:

Construction insights on Naga domestic architecture reveal the indispensable role of bamboo and wooden ladders in facilitating both the building process and cultural significance within Naga communities. These ladders are vital tools in constructing homes, particularly in the hilly, mountainous, and forested regions of Nagaland, where traditional building techniques necessitate natural and locally sourced materials best suited to the environment. The significance of these ladders extends beyond their functional

utility, encompassing social, cultural, and spiritual dimensions within the Naga community.

The construction of houses in Naga domestic architecture often involves building on raised platforms or stilts, serving multiple purposes such as protecting households from wild animals, dampness, and floods while offering ventilation to maintain internal temperatures. Additionally, these elevated spaces function as shelters for domestic animals like cows, pigs, chickens, and dogs, ensuring their safety and accessibility. In this context, bamboo and wooden ladders become indispensable during construction, allowing builders to access upper platforms while working on the roof, walls, and other elevated sections of the house. The importance of ladders extends into post-construction use, as they provide on – going access to upper storage spaces, maintenance areas, or attics within Naga homes.

During the construction phase, bamboo and wooden ladders are used temporarily to access higher parts of the structure and transport materials to different levels of the house. Once construction is complete, the ladders are often adapted as permanent stairways or access points to storage spaces situated above the primary living areas. A particularly innovative indigenous structure used in Naga domestic construction is the triangular bamboo ladder. Designed to provide stable and balanced access, this ladder exemplifies traditional engineering solutions tailored to vernacular architectural needs and locally available materials. The triangular bamboo ladder enhances safety and efficiency during construction, particularly when working on inclined or elevated structures such as thatched roofs. Its three – legged framework distributes weight evenly, reducing the risk of instability on uneven terrain. This design reflects the ingenuity of Naga craftsmanship, demonstrating how indigenous knowledge continues to shape sustainable construction practices⁵ (Plate 14, 15 & 16).

Bamboo, renowned for its lightweight, flexible, and durable properties, is particularly favored for making ladders, as it allows quick assembly and easy maneuverability during construction (Tiwari, 2016). Builders commonly use bamboo ladders when installing thatched roofs, maintaining structural elements, or retrieving

stored items. Conversely, wooden ladders, though heavier, offer greater stability and strength, making them ideal for situations where long-term durability is prioritized. This adaptability renders bamboo and wooden ladders essential throughout both the construction phase and everyday life in Naga households.

The cultural significance of bamboo and wooden ladders within Naga domestic architecture transcends their practical function. These ladders embody the Naga people's sustainable practices, traditional craftsmanship, and close association with nature. Utilizing locally sourced materials such as bamboo and wood not only reduces construction costs but also promotes eco-friendly building practices. Bamboo, in particular, is recognized for its rapid growth, sustainability, and low environmental impact, making it a preferred choice for ladder construction. Additionally, the use of wooden ladders reflects the cultural significance of honoring ancestral practices and reinforcing the communal spirit in construction activities.

The incorporation of bamboo and wooden ladders in Naga domestic architecture also reinforces the symbolic connection between the earthly and spiritual realms. In many Naga communities, house construction is often accompanied by ritualistic practices, and the use of ladders to ascend to higher spaces is perceived as a symbolic act of transition and connection with divine entities. Elevated spaces within Naga homes, such as attics or lofts, are sometimes regarded as sacred zones, and ladders serve as conduits between the earthly and spiritual dimensions (Horam, 1977). This cultural symbolism highlights the spiritual relevance of ladders in Naga society, establishing them as more than mere construction tools.

From an ecological standpoint, the use of bamboo and wooden ladders in Naga domestic architecture contributes to minimizing environmental degradation. Both bamboo and wood are biodegradable, locally sourced, and have a low carbon footprint, aligning with sustainable construction practices. The utilization of these materials minimizes the reliance on industrial resources, thereby promoting environmental stewardship within Naga communities. Additionally, bamboo's natural texture and color enhance the

aesthetic appeal of Naga houses, complementing their traditional architectural style and fostering a harmonious blend between the built environment and nature (Varuni, 2024).

Economic considerations also influence the use of bamboo and wooden ladders in Naga domestic architecture. The abundance of bamboo and wood in the region minimizes transportation costs and construction expenses, making these materials more practical than industrial alternatives. Additionally, the continued use of traditional craftsmanship sustains local skills and knowledge passed down through generations, fostering cultural preservation and economic sustainability within the community. This approach reflects the Naga people's commitment to promoting self-sufficient construction methods while minimizing their dependency on external resources (Varuni, 2024).

The act of constructing a home in Naga society is inherently a communal activity, with collective labor playing a significant role in the building process. The use of bamboo and wooden ladders during construction exemplifies the communal spirit, as these tools facilitate collective participation in erecting homes. Moreover, ladders symbolize the interconnectedness between individuals and their community, reflecting shared responsibilities and mutual cooperation (Mills, 1922). This communal approach to construction not only strengthens social bonds but also ensures the preservation of traditional architectural knowledge and craftsmanship.

In summary, the use of bamboo and wooden ladders in Naga domestic architecture encompasses multiple dimensions, including functionality, cultural heritage, sustainability, and communal values. These ladders are not only practical tools but also serve as cultural symbols that reinforce the Naga people's deep-rooted connection to nature, tradition, and spirituality. By integrating bamboo and wooden ladders, including the innovative triangular bamboo ladder, into their domestic architecture, the Naga people effectively promote sustainable construction practices while preserving their architectural heritage. The reliance on these locally sourced materials demonstrates a profound commitment to environmental sustainability, cultural preservation, and community unity, accentuating the timeless relevance of bamboo and wooden ladders in Naga society (Varuni, 2024).

2.11. Indigenous measurement kits (*Khapvo rho*):

Thatch has been extensively used as a primary roofing material in Naga domestic architecture for centuries due to its availability, sustainability, and practical benefits. Derived primarily from natural grass, such as *Imperata cylindrica* (commonly known by different names and in various languages such as *lezhi*, cogon grass, kunai grass, cotton wool grass), it offers excellent insulation properties, ensuring interior spaces remain warm during winter and cool during summer (Rapoport, 1969). Thatch roofing has a significantly long lifespan, lasting approximately 20 to 30 years when properly maintained, and exhibits high resistance to strong winds and heavy rainfall, making it highly suitable for the climatic conditions of Nagaland (Rapoport, 1982). In addition to its environmental sustainability as a renewable and biodegradable material, thatch also holds cultural and traditional significance, reflecting the indigenous knowledge systems and communal labor practices involved in Naga house construction (Rapoport, 1982).

One of the most culturally and technically significant aspects of Naga thatch roofing is the use of a traditional measurement tool known as *Khapvo Rho*, a locally made measuring rope used specifically for measuring and fastening thatch bundles during roofing construction. The term *Khapvo* refers to the whole bundle of thatch composed of 10 to 12 smaller bundles tied together, while *Rho* means rope or measuring twine in local dialect (Plate 17). This traditional measuring method ensures that the bundles are uniformly measured and securely fastened to facilitate roof durability and long-lasting protection. According to oral traditions, the *Khapvo Rho* measurement process involves selecting a capable and physically strong individual within the community to measure and fasten the bundles during the roofing process. This practice not only ensures precision in roofing but also signifies social participation, where communal efforts and shared knowledge shape the construction process (Oppitz et al., 1991).

The *Khapvo Rho* is traditionally made from jute fiber, bamboo fiber, or other quality plant twine and has a standardized length based on the builder's physical measurements or customary practice. Oral narratives indicate that the commonly used measurement for a single *Khapvo Rho* is approximately 5 feet 2 inches, which is used for

regular thatch bundles, while another measurement of 6 feet 5 inches is preferred for larger bundles meant for more extended roof coverage.⁶ The measurement is highly practical, as it helps in standardizing the size of thatch bundles to maintain consistency in roofing thickness and structural strength. By ensuring uniform bundle sizes, the thatch roofing becomes resilient to harsh weather conditions such as heavy rain, strong winds, and extreme heat, thus extending the roof's lifespan (Rapoport, 1969).

The process of thatch collection and preparation for house construction is deeply rooted in traditional ecological knowledge and seasonal practices. Each household typically reserves a specific area of land designated for growing thatch grass, which is harvested seasonally. According to customary practices, the grass field is burned down in March or April to clear unwanted vegetation and promote fresh grass growth, while periodic cleaning of weeds is done in June and July when the grass reaches waist level and harvest in the month of October ending till November⁷. This cyclical method of grass cultivation not only ensures a sufficient supply of thatch but also fosters environmental sustainability by allowing natural regrowth (Rapoport, 1982).

A day before fetching the thatch, the host family traditionally prepares a meal consisting of local chicken curry and rice beer (*Hazi* or *Zu*) and offers it to the person selected to measure and fasten the thatch. This person is chosen from among many, based on their capability, expertise, or superior knowledge and skill in measuring and fastening the thatch using *Khapvo Rho*.

The measuring person tightens the rope to its maximum capacity to gather 10–12 smaller bundles of thatch together ensuring uniform thickness and density that is required for a single person to carry. The measuring rope typically measures 6 feet 5 inches or 5 feet 2 inches, with the latter being the most commonly used in households. Accuracy in measurement is considered crucial, as any inconsistency in the bundle size may compromise the roof's durability ensures that each layer of thatch is evenly aligned, minimizing the risk of water leakage or wind penetration. The number of thatch bundles collected depended on the size of the house. For smaller houses, approximately 30 to 40 bundles per side, equivalent to 60 to 80 *Khapvo*, were required. In the case of larger

houses, around 40 to 50 bundles per side, totalling 80 to 100 *Khapvo*, were necessary to complete the roofing.⁸

Beyond its practical functionality, the *Khapvo Rho* embodies cultural and social significance. The act of measuring thatch bundles is not merely a technical task but also a social practice embedded with symbolic meaning. The person assigned to measure the thatch is often regarded with high esteem, as their precision in bundling contributes directly to the household's long-term shelter and protection (Lévi-Strauss, 1963). Additionally, it is widely believed that the first bundle tied using the *Khapvo Rho* is symbolic of securing prosperity and blessings for the household. In many instances, the host family offers the first measured bundle to the community leader or village elder as a gesture of gratitude and goodwill, further strengthening social relationships and communal harmony (Lévi-Strauss, 1963).

The practicality of the *Khapvo Rho* as a traditional measuring kit extends to its efficiency in resource management. Knowing the dimensions of their houses, owners or village elders possess traditional knowledge of how many *Khapvo* (bundles of thatch) would be required to complete single house roofing. For instance, an average Naga house typically requires approximately 250–300 thatch bundles, while larger communal spaces such as *morungs* (boys' dormitories) or village meeting houses require around 500–600 bundles. This estimation is made possible through the standardized use of the *Khapvo Rho*, allowing for better planning, resource conservation, and minimal material wastage during construction.⁹

In contemporary documentation of indigenous architectural practices, the *Khapvo Rho* serves as an essential cultural symbol representing sustainable building techniques, human-scale measurements, and communal cooperation in Naga domestic architecture. Scholars advocate that preserving such traditional knowledge systems in modern architectural practices can offer valuable insights into sustainable construction models while safeguarding indigenous cultural heritage (Rapoport, 1982). Moreover, the *Khapvo Rho* measurement tool also highlights the adaptability of traditional knowledge systems in fostering environmentally responsible architecture, encouraging researchers to integrate

such indigenous practices into contemporary design frameworks (Rapoport, 1982). Therefore, the *Khapvo Rho* is not only a technical measuring tool but also a cultural instrument that fosters collective participation, sustainability, and the preservation of Naga architectural traditions.

2.12. Traditional Measurement techniques:

In the absence of modern measurement tools and kits, Naga domestic architecture was traditionally designed according to the physical dimensions and needs of its inhabitants. According to Mepusangba (2017), “Many Naga houses were constructed based on human scale measurements, where the physical dimensions of the human body, such as height, arm span, and body width, influenced the size of doorways, passageways, and living spaces (Mepusangba, 2017, pp. 29–37). This method of anthropometric measurement ensured that homes were functionally aligned with the physical comfort of their occupants. Anthropometric analysis involves studying the average body dimensions of the people inhabiting these houses and then designing structural components such as doors, windows, and room dimensions that are proportionate to the human body (Rapoport, 1969). This practice not only facilitated practicality but also served as a sustainable and cost-effective architectural approach since it did not require advanced measuring instruments.

Beyond functional comfort, the use of body proportions in Naga domestic architecture also reflected deep cultural and spiritual significance. The human body was regarded as a sacred unit of measurement, symbolizing the harmonious relationship between humans, nature, and the built environment. These approaches resonates with Marcel Mauss’s (1973) foundational anthropological insight that bodily techniques and movements are not merely biological but are deeply embedded in sociocultural systems—suggesting that the use of the body as a measuring tool in architecture is as much a cultural practice as it is a technical one. The physical and symbolic connection between the individual and the built space ensured that architectural elements such as the height of the roof, the placement of the posts, and the dimensions of rooms were aligned with the natural human scale. As Mauss (1973) explains, bodily techniques, including measurement, have

a social and symbolic function, highlighting the connection between the physical body and cultural systems, and in this case, the built environment.

The application of anthropometric measurements in Naga architecture also contributed to sustainable construction practices by minimizing material waste and reducing reliance on external measuring tools. As noted by Rapoport (1969), traditional architecture often relies on body-based measurement techniques, allowing for an intuitive and resource-efficient approach to construction. Builders could easily standardize measurements without requiring mechanical tools. Additionally, this method fostered communal participation in house construction, promoting social cohesion and knowledge transfer within the community. This practice also ensured that locally available materials, such as bamboo, wood, and thatch, were used efficiently, reducing construction costs and environmental impact.

Moreover, contemporary architectural documentation and research methodologies have facilitated the understanding and preservation of traditional Naga domestic architecture. On-site surveys, anthropometric analysis, GIS mapping, material quantification, oral history documentation, and structural assessment are some of the key methods used to document and preserve the dimensions, organization, and cultural significance of Naga houses. These documentation techniques provide multi-dimensional insights into the practical, cultural, and symbolic aspects of Naga architecture, aiding in the preservation of indigenous architectural knowledge. Furthermore, such techniques allow researchers to study the relationship between traditional building practices and human-centered design, ensuring that the cultural heritage of the Naga people remains intact.

The use of human-scale measurements in Naga domestic architecture exemplifies an architectural approach deeply rooted in practicality, cultural symbolism, and environmental sustainability. By using the human body as a standard unit of measurement, the Naga people created houses that were proportionate to the human scale, fostering comfort, functionality, and spiritual connection within the built environment. Preserving this indigenous knowledge and practice is crucial in contemporary architectural discourse,

as it highlights the importance of human-centered, sustainable, and culturally responsive design. Therefore, integrating traditional anthropometric practices with modern architectural documentation can safeguard and promote the rich architectural heritage of the Naga people, ensuring that their cultural legacy continues to inspire future generations.

Since the thumb (*Puthe*) is a constant size on most people's hands, it provides a reliable reference for builders when more specialized measuring tools are unavailable. The use of the thumb calculated as an inch is a unit of indigenous measurement in architectural construction is embedded in practicality, ease of use, Naga cultural tradition, and many societies, including those with ethnic or traditional building practices using this unit. The thumb provides a quick, intuitive way to measure small distances, such as the spacing between beams, the width of doors, or the height of posts (Plate 18). The uses of these units were part of the collective wisdom of the community from the elders and skilled workers passed down through generations. Using body parts for measurement is an effective way to teach beginners or new builders the basics of construction. Thus, when an apprentice builder learns how to use their thumb, they are learning a hands-on skill that immediately links their physical body to the work they are doing and hence this method creates a tangible and accessible learning experience.

The hand spans measurement taken the distance from the tip of the thumb to the tip of the index finger is known as *Tenhichi*, is a measurement unit used in Naga architecture. This smaller unit is typically used for measuring finer details, such as the width of beams, the spacing between posts, or the dimensions of door frames. It's a practical measurement when precision is required for smaller components¹⁰ (Plate 19). Finger measurements are particularly useful for very small-scale work in the construction process thus, the width of a finger or a thumb is used to determine the spacing of decorative elements, small joints, or carving details at the same time this is used in fine-tuning the fit of materials such as bamboo strips or wooden panels, which require precision in their placement. The next finger use for measurement is also known as cubit (*Epfü*) which is measured from the tip thumb to the tip of middle finger for the same purpose like hand span and the only difference in these two is that the second one is an inch longer than

the hand span measurement (Plate 20). Fingers from thumb to fore finger or index finger *Tenhichi*, thumb to middle finger *Epfü* and the whole palm *Bazhü* (Plate 21) were all used, depending on the owner's desire; whenever a person want bigger or larger size of any wooden or bamboo materials, those hand span measurements are added. These fingers were used for smaller size posts, wooden barrels, and storing edible food grains such as sesame, oats, maize, millet, etc.

The local term *Phezhü Kenhi* is a traditional measurement method used by the Naga people, based on the natural proportions of the human body. It involves measuring lengths by placing both feet heel to toe in succession, providing a practical and intuitive way to determine spatial dimensions. This indigenous technique has been an integral part of Naga architectural practices for centuries, enabling builders to achieve accuracy and consistency without relying on modern measuring tools. It reflects an adaptive and resourceful approach to construction, aligning with the community's use of natural materials and sustainable building methods.

In Naga domestic architecture, *Phezhü Kenhi* serves various functions, from planning the layout of homes to ensuring symmetry in structural elements. Many Naga houses are built on raised platforms or stilts, making it crucial to determine the appropriate spacing between pillars for stability. *Phezhü Kenhi* helps builders maintain proportionality while ensuring practical and functional dimensions. It is also used to define the sizes of rooms, doorways, and passages, ensuring a well-organized and harmonious living space.

One of the key aspects of *Phezhü Kenhi* is its intuitive and personalized nature. Since the measurement is based on an individual's foot length, it allows for flexibility while maintaining a common standard within a community. Skilled builders develop an instinctive understanding of dimensions through experience, enabling them to assess measurements accurately without external tools. This practice is not merely a technical skill but also an essential part of cultural knowledge, passed down through generations as a cornerstone of Naga craftsmanship. The use of body-based measurements like *Phezhü Kenhi* highlights the deep connection between the Naga people and their environment, demonstrating their ingenuity in preserving and adapting architectural traditions.

Phezhü Kede Keleu Porha is another traditional Naga measurement system, representing a unit equivalent to one and a half feet or 1.5 ft. This measurement plays a crucial role in shaping key structural elements of Naga homes, including beams, pillars, doorways, and platform heights. Unlike *Phezhü Kenhi*, which is used for larger spatial calculations, *Phezhü Kede Keleu Porha* provides a more precise unit for defining architectural features, ensuring both stability and aesthetic balance in indigenous construction.

The significance of this measurement is particularly evident in elevated houses, where platform height is carefully determined to protect against wild animals, dampness, and flooding. The standard height of stilts is often set using this unit, ensuring the house remains raised while maintaining ease of access. Similarly, doorways and entrances are constructed based on this measurement, ensuring proportional alignment with the overall structure. This allows for comfortable movement while preserving the traditional spatial hierarchy within the home.

Beyond its practical function, *Phezhü Kede Keleu Porha* holds cultural importance. Many architectural features, such as verandas, communal spaces, and ceremonial structures, follow traditional measurements to maintain aesthetic harmony and symbolic meaning. Since architecture is deeply connected to social customs and spiritual beliefs in Naga society, using standardized indigenous measurements reinforces a sense of continuity and cultural identity. The application of *Phezhü Kede Keleu Porha* demonstrates the ability of Naga builders to create well-balanced, structurally sound, and environmentally responsive buildings using knowledge passed down through generations.

This measurement system also reflects the self-sufficiency of the Naga people in construction. By relying on traditional measuring techniques rather than external rulers or standardized metric systems, they sustain a decentralized and community-driven approach to building. This ensures that construction knowledge remains accessible to all members of society, allowing individuals to participate in home building regardless of formal education in engineering.

Phezhü Kenhi and *Phezhü Kede Keleu Porha* are essential components of traditional Naga architecture, demonstrating the ingenuity and sustainability of indigenous construction methods. These measurement techniques not only serve as practical tools but also represent a cultural legacy that strengthens the Naga people's connection to their ancestral knowledge and environment. While modern measuring instruments are widely available, these traditional methods continue to be relevant, preserving the architectural heritage of the Naga people and reinforcing their self-reliant, eco-conscious approach to building (Plate 22 & 23).

Indigenous measurements for architectural constructions are also done using the stride (*Tsüka*) that is the length of a normal step taken is used to measure larger distances and measuring longer materials, such as measuring the length and breadth of a house, raw materials or the space between two houses in the village.

The length of the arm cubit (*Bali* in *Khezha* language and *Kalaka* in Ao), which is one of the most common body part measurements, is the cubit, based on the length of the forearm from the elbow to the tip of the middle finger. This measurement is regularly used to determine the length of beams, walls, and other horizontal elements in the structure. Since it is a personal and easily accessible reference, the cubit serves as a convenient, consistent unit in construction, particularly in areas where formal measurement tools are scarce and in the absence of modern cultured measurement tools (Plate 24).

The measurement from the chest to the tip of the middle finger, known as *Buphruo*, is an important body-based unit of measurement, often used in the design and construction of houses (Plate 25). This measurement, reflecting the ridge and scale of the human body, plays a significant role in ensuring the house is functional, comfortable and in harmony with its inhabitants. This measurement helps in the design of spaces that cater to the daily activities of the occupants. It is mainly used to determine the length and width of the walls, pillars, wooden barrels, wooden beds or seats, pounding tables, gable horns, and posts, which is considered an extra measurement taken from the use of both the arms. The chest-to-tip-finger measurement is practical and easily accessible, as it is based on the builder's body, which eliminates the need for additional measuring tools, providing a simple,

efficient way to maintain consistency and precision during construction.¹¹ This measurement also ensures that the house is tailored to the specific measurements of the builder or the community, making it personalized and suited to their everyday use. It allows the construction process to adapt to the physical characteristics of those involved in building the house (Mauss, 1973).

In traditional Naga domestic architecture, the concept of whole arm span or *Ekha*, representing the full arm span from the tip of the left middle finger to the right middle finger, served as a standard unit of measurement for determining structural dimensions and spatial proportions (Plate 26). This indigenous method allowed builders to establish proportional spaces based on human body dimensions, ensuring functionality, efficiency, and cultural relevance in construction.¹²

The arm span measurement was particularly significant in determining horizontal dimensions such as the length of bamboo poles, roofing beams, and wall frames. Builders could easily standardize material sizes without modern tools, simplifying the construction process. By aligning spatial dimensions with human proportions, *Ekha* ensured that living spaces were neither oversized nor restrictive, promoting spatial comfort and natural adaptability.

Beyond practicality, *Ekha* also held cultural and spiritual significance. Constructing houses based on one's body measurements symbolized a personalized connection between the individual and the dwelling space, fostering a sense of belonging and balance. This approach reinforced the belief that the house was an extension of the person, aligning physical, spiritual, and environmental harmony. Moreover, the use of *Ekha* contributed to sustainable building practices by minimizing material waste and reducing reliance on external tools. Its adaptability allowed community members to participate collectively in construction, fostering social cohesion and knowledge transmission. The practice also supported cost-effective construction, as builders could efficiently measure and utilize locally available materials (Rapoport, 1973). The whole arm span represents a culturally rooted and sustainable measurement system that aligns architectural design with human scale, resource efficiency, and cultural identity.

Preserving this indigenous technique in contemporary construction can promote sustainable and human-centered architectural practices while safeguarding Naga cultural heritage (Mauss, 1973).

In traditional Naga architecture, indigenous measurement systems play a pivotal role in ensuring precision and harmony in construction. One such method is the stride measurement, known as “*Tsüka*,” (Plate 27) which utilizes the length of a natural walking step to estimate distances. This technique is particularly effective for measuring larger expanses, such as the length and breadth of a house, the dimensions of raw materials, or the spacing between structures within a village. By counting the number of strides taken, builders can approximate distances without the need for modern measuring instruments, reflecting a deep connection to their environment and a reliance on innate human proportions.

The application of *Tsüka* extends beyond mere practicality; it embodies the Naga people's resourcefulness and their ability to adapt to their surroundings. This method allows for a standardized yet flexible approach to construction, accommodating variations in individual stride lengths while maintaining overall structural coherence. The use of *Tsüka* fosters a communal understanding of space and distance, as it is a skill passed down through generations, reinforcing cultural identity and continuity.

While specific scholarly documentation on the use of *Tsüka* in Naga architecture is limited, the broader context of indigenous measurement systems highlights their significance in traditional building practices. These methods are integral to preserving cultural heritage and ensuring sustainable construction practices that are in harmony with the natural environment. The reliance on body-based measurements like *Tsüka* underscores the Naga community's emphasis on human-scale architecture and their intrinsic understanding of proportion and balance.

Incorporating *Tsüka* into contemporary architectural discourse offers valuable insights into sustainable and culturally resonant design practices. It challenges modern builders and architects to consider alternative measurement systems that are environmentally friendly and culturally significant. By acknowledging and respecting

these traditional methods, there is potential to enrich modern construction practices with indigenous wisdom, promoting a more holistic approach to architecture that honors both people and place.¹³

Measurements based on different parts of the human body such as the feet to knee, waist, shoulder, and head (Plate 28 & 29) also play an essential role in ensuring that the design and construction of homes are functional, comfortable, and culturally relevant. These measurements also reflect the physical proportions of the occupants and contribute to the creation of a space that suits human needs. In some Naga homes, particularly those on stilts, the knee height is an important measurement when determining how high the platform of the house should sit above the ground. The height of a person's knee is used as a guide to raise the house to an appropriate level, providing protection from floods, pests or moisture while allowing for better air circulation beneath the structure.

The waist measurement is significant for the design of interior spaces, such as doorways and passageways. This dimension ensures that the height of these openings is comfortable for daily use. For instance, the height of storage spaces or counters is measured to the waist, making it convenient for people to access items without bending over excessively.

The shoulder measurement is crucial in designing the width of rooms or areas that require communal or social interaction, such as the living area or the kitchen. This measurement helps ensure that spaces are wide enough to accommodate the physical movements of people without feeling cramped, supporting the daily activities of family members or guests. It reflects how the architecture fosters social engagement by creating spaces where people can comfortably interact and move.

The head measurement plays a central role in determining the height of the house, especially the roof. The roof needs to be high enough to provide enough clearance and to allow for airflow and natural light. In Naga houses, the height of the roof is often aligned with the height of the head, reflecting a balance between shelter and comfort. What's more, this measurement ensures that the house's interior feels spacious, protecting the occupants from the elements while allowing them to stand or move freely. This measurement

technique is common for Naga domestic construction and is used to measure beams, columns, pillars like wood, bamboo, and any other material required to build a house. Generally, the concept of a standing human body measurement engaged from feet to knee, waist, shoulder, and head is for height, and it is only a matter of dividing the parts based on inhabitants' requirements either with natural materials or household storages both inside and outside their architectural domain.

It is also important to note that, the concept for the house construction of its shape; size and orientation are first well planned in mind and the visual estimation is often used to determine the size of materials needed for a specific purpose. For example, builders will estimate the length and width required materials by visualizing or eyeing them when building a roof or a wall and thus, the unique nature of traditional Naga architecture requires specialized skills and knowledge that have been passed down from generation to generation. In cases of greater height requisite, the same person shall use a light straight stick or bamboo, taking the same height twice, thrice, or even more depending on requirements. Mostly it is measured by taking the height or length of the house owner if a person is of average physical.

With the advancement of digital technology, modern instruments such as total stations or theodolites are being introduced for precision in measurements during renovation or new construction. For the larger and bigger projects or community planning, Global Positioning System (GPS) technology is used to map out land and structural placements accurately. The Digital Design Software were created for easy access where modern architects and designers use the tools like Computer-Aided Design (CAD) software to visualize and plan architectural projects, allowing for more complex designs to be created digitally before physical construction begins.

Some of the most important tools used at present for documentation and preservation of Naga domestic architecture are like photography, sketching, oral tradition and community involvement. Traditional and modern architectural features are documented using photography and sketching, preserving the intricate details and aesthetic elements of architecture. Engaging local communities in documenting the

structures and domestic building practices helps to preserve the cultural heritage and knowledge of traditional tools and techniques for future generations.

Oral tradition plays a pivotal role in preserving Naga traditional architecture, particularly within the diverse tribes and communities in Nagaland. It is the oral tradition that encompasses myths, folktales and by way of singing folksongs, and teaching passed down through generations, which regularly include valuable information regarding architectural practices, materials, and the significance of different structures which helps in maintaining a connection to the cultural identity of the people. Most of the Naga architectural techniques are not documented or recorded in written form but rather transmitted through storytelling and verbal conversations and instructions from elderly people to the younger members of the community or tribe. One of such valuable knowledge includes construction methods, the use of available natural materials, and specific architectural styles that are unique to each tribe.

Oral traditions frequently convey the symbolic meanings behind architectural styles and layouts. For example, the configuration of a house which reflects social hierarchy, spiritual beliefs, or communal values that is integral to the Naga identity. As societies evolve and still respects traditional values, the oral tradition allow for the adaptation of architectural practices. By way of storytelling, Indigenous communities can discuss the changes in their environment or lifestyle, leading to alterations in domestic architectural structures that reflect contemporary needs while honoring the historical facts and practices. Oral tradition fosters a sense of belonging and oneness which leads to continuity within communities. The sharing of stories by skilled craftsmen or elders knowledgeable in traditional architecture helps reinforce social bonds, collective memory, and the importance of preserving traditional houses as symbols of group identity. Such traditions enhance the knowledge of the young members of the community in the field of education and skill development where they are taught to learn about the importance of their cultural heritage. Elders frequently take on the role of instructors, teaching the younger generation the building skills and cultural narratives that ensure the ongoing practice of traditional methods and its associated knowledge. Living in an era of

globalization and modernization, these oral traditions aid in safeguarding domestic building practices from being overshadowed by external impacts. It is imperative that the preservation of indigenous knowledge, the ecological and cultural contexts of Naga traditional architecture are often rooted in oral history, which includes knowledge of the native environment, seasonal changes, and the sustainable use of resources, all of which are important for preserving architectural practices.

In the area of traditional and modern tools and measurement techniques, several key differences emerge, reflecting advancements in technology, efficiency, accuracy, adaptation etc. Traditional tools often rely on manual measurement techniques using the physical body such as thumb, fingers, hands span, legs, foot, or as simple as using sticks and natural ropes. While sometimes these can be accurate, they are prone to human error and lacks precision. Utilizing digital technology, such as laser measurement tools, digital scales, and GPS, provides higher precision and eliminates much more of the human error associated with manual measurements.

The traditional techniques followed age – old practices passed down through generations emphasize the communal skill labor and knowledge of local environmental settings. Therefore, these techniques are deeply tied to cultural practices and regularly involve ritual performances. Whereas, the modern house construction techniques incorporate advanced engineering or mimic styles outside the ambit of traditional architectural designs that accommodate contemporary needs.

The present study thus puts into cultural and aesthetic considerations the design of Naga houses that are rich in symbolism, which reflects cultural beliefs and social status and each of its aspects of design containing traditional significance, while modern designs incorporate traditional elements for cultural continuity with manufactured simulacra for better appearance with a focus more on practicality and efficiency. In order to preserve its cultural heritage, what is witnessed is a growing trend of integrating traditional aesthetics into modern designs and styles.

Endnotes:

- ^{1.} Interview with Chülonyi Lasuh; 85 years, Elder and Feast Donor, Mesulumi Village, Dated: 23/12/2017 & Guru Sangyunsang Pongen; 78 years, GB, & Aotongpang Jamir; 82 years, Elder, Ungma village, Dated: 11/10/2022.
- ^{2.} Interview with Chülonyi Lasuh; 85 years, Elder and Feast Donor, Mesulumi village, Dated: 05/01/2018.
- ^{3.} Interview with Wechinyiu Lasuh; 80 years, Elder and Feast Donor, Mesulumi village, Dated: 20/01/2018.
- ^{4.} Interview with Chülonyi Lasuh; 86 years, Elder and Feast Donor, Mesulumi village, Dated: 20/01/2018.
- ^{5.} Interview with Thsipise Sangtam; 53 years, Phelungre village Council Chairman, Dated: 29/09/2019 & Penjun Konyak; 81 years, Elder, Longwa village, Dated: 05/10/2022.
- ^{6.} Interview with Züwelo Thele; 74 years, Elder, Mesulumi village, Dated: 19/05/2023.
- ^{7.} Interview with Kekhwechülo Thele; 54 years, GB & Feast Donor, Mesulumi village & Wenyilo Venuh, 47 years, VCC, Dated: 09/12/2017.
- ^{8.} Interview with P.Paul Dukru; 78 years, Ex. VCC, Zhavame village, Dated: 16/04/2021.
- ^{9.} Interview with Kekhwechülo Thele; 55 years, GB & Feast Donor, Mesulumi village, Dated: 13/01/2018.
- ^{10.} Interview with Welhi Thele; Retd Agriculture Officer, Mesulumi village, Dated: 03/04/2021.
- ^{11.} Interview with Guru Sangyunsang Pongen; 78 years, GB, & Aotongpang Jamir; 82 years, Elder, Ungma village, Dated: 11/10/2022.
- ^{12.} Interview with Veswüzo Phesao; 65 years, Exhibition Officer, NEZCC, Naga United village, Chümoukedima, Dated: 09/04/2022.
- ^{13.} Interview with Huzümo Venuh; 67 years, GB & Tewetso Tsüha, 49 years, Ex. VCC, Mesulumi village, Dated: 11/02/2023.



Plate 1: The traditional dao (*Eza*), a multifunctional blade used in agriculture, construction, and rituals, exemplifies indigenous craftsmanship and ergonomic design.



Plate 2: A traditional spade (*Kapfhü*), essential for excavation, soil conditioning, and construction, highlighting indigenous craftsmanship and functional design.



Plate 3: The axe/adze (*Meri*) and chisel axe (*Kesa*) are essential tools in house construction and carving, reflecting indigenous woodworking skills and technology.

		
Plate 4: The crowbar (<i>Zhikumi</i>), a traditional metal tool used for prying, digging, and loosening soil or rocks in indigenous construction and agriculture.	Plate 5: The pickaxe/mattock (<i>Kathi</i>), a traditional tool for breaking hard soil and stones in house construction and agriculture.	Plate 6: <i>Kethi</i>, a specialized traditional tool used for finishing hard-to-reach holes in house construction and grave digging.



Plate 7: Types of wooden mallet (*Tshüzhie*) - one type is used for hammering big logs, while the other is used for bamboo crafts and handicraft works, demonstrating functional variations in Indigenous tools



Plate 8: The traditional sickle (*Techi*) generally used as a versatile indigenous tool primarily used for cutting thatch, weeds, straw, or hay.



Plate 9: Types of Axe, dao, mini wooden mallet, and chisels – traditional tools used in domestic architecture.



Plate 10: Assorted types of mini chisels used for intricate wood carving and detailed craftsmanship in traditional architecture and handicrafts, reflecting indigenous knowledge of specialized tools and techniques.

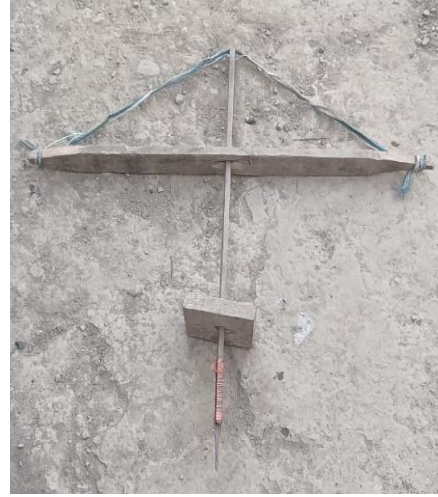


Plate 11: The Indigenous hand drill, a vital traditional tool used in architectural construction, valued for its cultural significance and practical function (*Photo courtesy: Neitshope Lasuh*)



Plate 12: *Nyopvo* – Indigenous bamboo basket engineered for efficiently carrying mud during house construction



Plate 13: *Nyosü* – a traditional earth-moving tool used for hauling mud, leveling ground, and collecting large stones.



Plate 14: Bamboo ladder (*Kavu Lashe*) – an essential architectural element in traditional domestic construction, enabling vertical mobility during construction and daily household activities.



Plate 15: Wooden ladder (*Tshü Lashe*) – a functional architectural component in traditional domestic construction, facilitating access to elevated storage areas and lofts.



Plate 16: Triangular bamboo ladder – an innovative indigenous structure designed to provide stable and balanced access during domestic construction, demonstrating traditional engineering solutions tailored to vernacular architectural needs.



Plate 17: The measurement twine or string (*Khapvo rho*) is traditionally used to measure and secure bundles of *Imperata cylindrica* (thatch) in Naga construction. (Measures 6 feet 5 inches and 5 feet 2 inches)



Plate 18: Inch (*Puthe*), traditional measurement technique using the thumb for marking dimensions in woodwork



Plate 19: Indigenous finger-span measurement thumb to index finger (*Tenhichi/Aka ka*) used in traditional Naga construction practices.



Plate 20: *Epfu* – thump to forefinger, a traditional hand-span measurement method used in Naga construction for determining lengths and proportions



Plate 21: *Bazhü/Songmesen*, the traditional whole palm measurement, serves as a body-based unit used by the Naga community to determine dimensions.



Plate 22: Traditional Naga measurement known as *Phezhü Kenhi*, which uses the combined length of both feet placed heel to toe.



Plate 23: Traditional Naga measurement called *Phezhü Kede Keleu Porha*, representing one foot and a half.

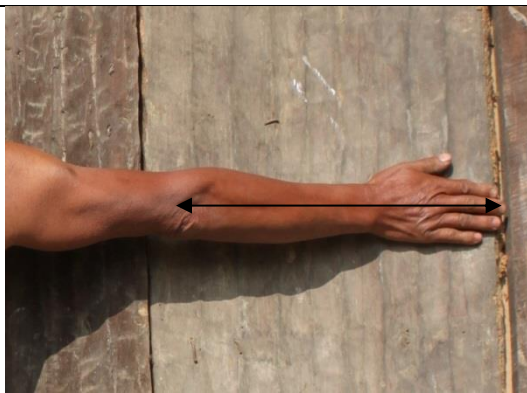


Plate 24: Traditional measurement method known as *Bali or Kalaka* representing the span from the elbow to the fingertip.

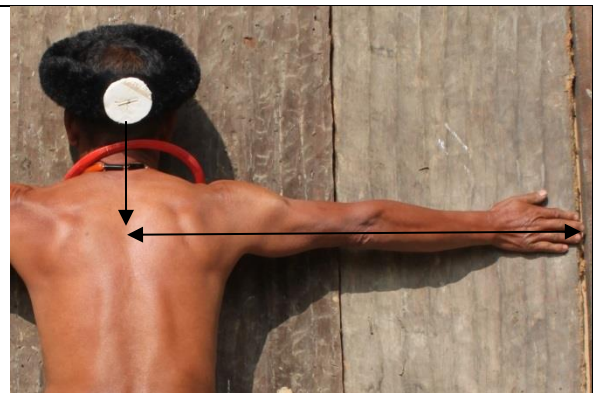


Plate 25: Traditional measurement technique known as *Buphruo/Teckocima*, which measures the distance from the center of the chest to the fingertip.



Plate 26: Traditional Naga measurement known as *Ekha*, representing the full arm span from left hand fingertip to the right hand fingertip.



Plate 27: Traditional Naga stride measurement known as *Tsüka*, used to estimate distances by counting natural walking strides.



Plate 28: Naga traditional method for measuring height and breadth using body-based units, arm span (*Ekha*).

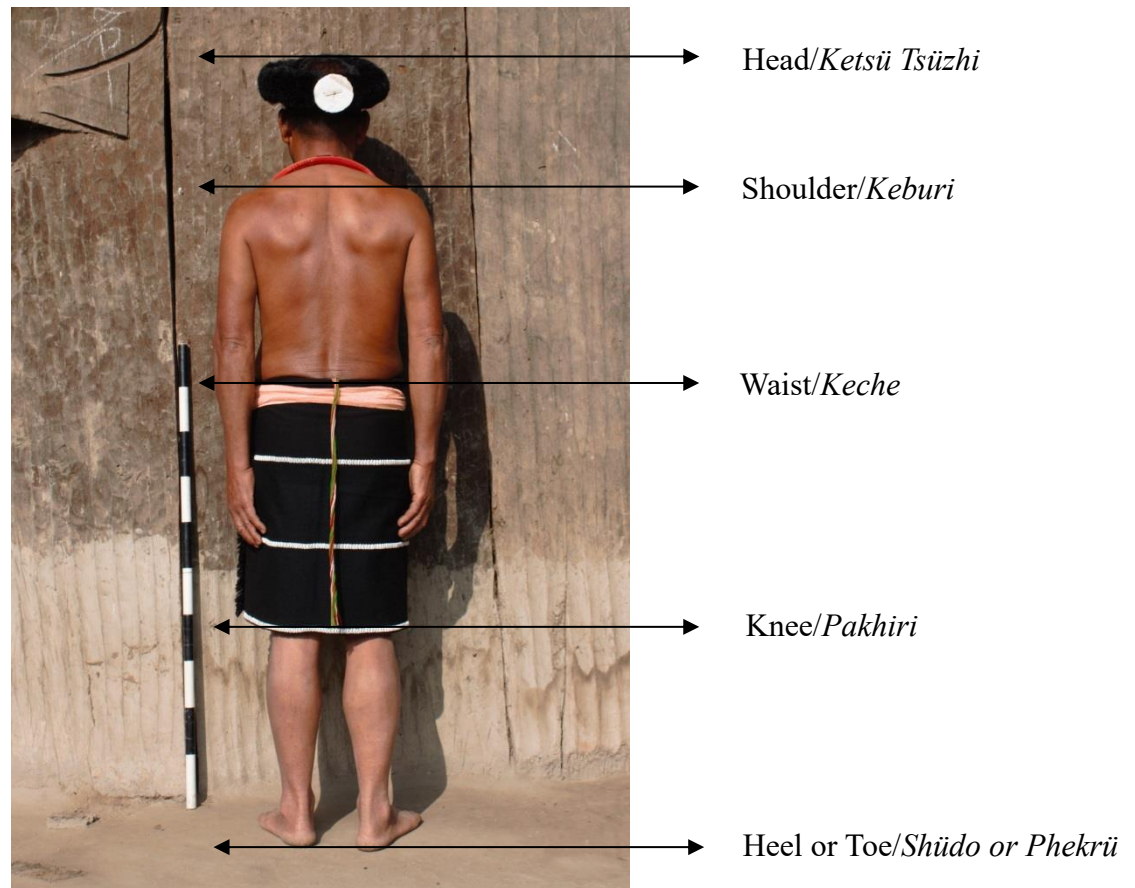


Plate 29: Traditional height measurement from heel to head using a vertical measuring rod, known locally as *Shüdo – Pakhiri – Keche – Keburi* - and to *Ketsü Tsüzhi*, representing indigenous knowledge of anthropometric standards.

CHAPTER-3

General Character and Types of Domestic Architectural Forms

3.1. Introduction:

The development of domestic architecture among the Naga tribes of Nagaland is deeply intertwined with their traditional customs, beliefs, and cultural heritage. This is clearly reflected in the variety of housing styles and spatial planning practices that have evolved over generations (Mills, 1926, p. 120). Factors such as local geography and climatic conditions have played a significant role in shaping choices related to building materials, structural forms, and the placement of homes (Singh, Mahapatra, & Atreya, 2009). Consequently, Naga dwellings serve not only functional purposes but also symbolize cultural identity, often embodying social hierarchies and economic status through their architectural features, decorative elements, and spatial organization (Vasa, 2019)

One of the most culturally significant structures is the *Morung*, a communal house that stands as a cornerstone of Naga society. This building acts as an educational hub where younger community members are introduced to traditional knowledge systems, including weaving, costume design, dance, oral storytelling, hunting skills, and martial techniques (Hutton, 1921, p. 203). Each Naga tribe, forming part of the broader multi-tribal Naga community, showcases distinct architectural expressions shaped by specific environmental, cultural, and material contexts (Horam, 1988, p. 35).

This chapter explores prominent forms of traditional Naga domestic architecture by examining the structural and stylistic variations across different tribes. Additionally, it addresses the construction of temporary shelters, commonly known as field huts, which are built on agricultural lands, especially in areas distant from the main village. The design of these huts varies significantly based on tribal affiliation, reflecting diverse cultural adaptations to agrarian life (Mills, 1926, p. 150). By analyzing the house not merely as a

physical structure but as a complex cultural category, scholars can gain deeper insights into the social dynamics, traditions, and cultural processes of the region (Rapoport, 1969).

Nagaland consists of 16 administrative districts, inhabited by 17 major tribes along with other sub-tribes and constructing of traditional architecture differs from tribe to tribe. Even in celebration of festivals, performing rituals also vary from village to village and tribe to tribe but one unique uniformity and similarity that could be seen is using of raw materials, tools and techniques while constructing traditional architecture.

In connection with other writers' works it has been emphasized that the vernacular architecture of Nagaland embodies the region's cultural identity, deeply rooted in traditional building practices that have evolved over centuries. According to Imsong and Kumar (2022), the traditional architecture of Nagaland demonstrates a strong alignment with sustainability principles, as it primarily utilizes locally sourced materials such as bamboo, wood, and thatch. Their study highlights how these structures are well-adapted to the region's climate and topography, reflecting the community's indigenous knowledge and craftsmanship. However, recent transformations in the built environment driven by socio – economic and environmental changes have threatened the existence of these traditional architectural forms. The introduction of modern construction materials, combined with urbanization and globalization, has significantly altered the architectural landscape in Nagaland (Imsong & Kumar, 2022).

Similarly, Ruchi and Choudhary (2022) assert that the rapid shift from traditional to modern building practices has contributed to the loss of vernacular architecture in Nagaland. They emphasize that traditional houses, which once symbolized the Naga cultural identity and sustainable living, are now being replaced by concrete and industrial materials. This shift not only impacts the environment but also diminishes the cultural essence embedded in the traditional houses of Nagaland. Ruchi and Choudhary (2022) further advocate for preserving vernacular architecture as a crucial step towards cultural sustainability and environmental conservation. Integrating the insights from both studies, it becomes evident that the preservation of traditional architecture in Nagaland is

imperative to maintain cultural identity while promoting sustainable development in the region.

Following are the sections dealing with site selection, layout of traditional architecture and its division and types of traditional architecture.

3.2. Site Selection and Ritual Practices for House Construction:

The Naga tribes possess distinct cultural traditions, and the selection of village sites has historically been guided by long – standing customs that reflect communal values and beliefs. One of the principal considerations in site selection was safety and defense, particularly due to the region’s history of inter – village conflicts. As a result, settlements were often established on elevated or hilly terrain that offered natural fortification, visibility, and access to surrounding forests and resources (Mills, 1926, p. 18; Hutton, 1921, p. 45). Traditional norms also emphasized proximity to natural water sources, such as rivers or springs, to ensure year – round water availability (Shimray, 2001, p. 72). Practical concerns such as access to fertile soil, availability of forest produce, and proximity to trade routes significantly influenced traditional Naga settlement patterns. Topographical features that minimized flood or landslide risks were essential considerations, making site selection a crucial cultural and economic decision.

In the traditional practice of house construction, the prospective owner first surveys a plot of land to determine its suitability and convenience. Upon finding an appropriate site, he returns, typically the following morning or within a few days, to perform a set of ritual observances at the chosen location. These rituals are conducted at dawn and involve specific ceremonial objects, including fire, a dao (traditional machete), a spear, a war shield known as *Mezhi Zhide*, a bamboo cane trap called *Kusa*, and a local brew carried in a bamboo basket referred to as *Khuba*.

Upon arrival at the site, the individual seeks blessings from the deities and ancestral spirits to ensure the success and prosperity of the future dwelling. A fire is kindled as part of the ritual, symbolizing continuity, protection, and the sanctification of the new space. Significantly, this fire is sourced from the hearth of the owner’s previous

home and must be kept continuously burning throughout the construction period. The uninterrupted presence of this fire is crucial; if it extinguishes before the house is completed, it is interpreted as an unfavorable omen, potentially threatening the wellbeing and fortune of the household.

Words of blessings are pronounced by the owner before anyone comes for work:

- a). Good health - *Kechükenyü chüre kenyüe*
- b). Long life - *Kerhirho ketha chükelou chüe*
- c). Prosperity (Wealth) – *Kechine kakruo chü mezü masü*
- d). May riches never run dry - *Tompu sompue*
- e). Good omen be with us - *Kewe ketha kede chüe*.¹⁴

3.3. Layout of a Traditional Architecture and its division:

The traditional domestic architecture of the Naga tribes offers critical insights into their cultural identity, environmental adaptation, and social stratification. While architectural styles differ among tribes, several unifying characteristics are observed. Most Naga houses are rectangular in shape and are elevated on stilts, a feature that helps mitigate moisture-related issues and prevents pest infestation (Hutton, 1921, p. 73; Mills, 1926, p. 102). The internal layout of these dwellings is shaped by tribal affiliation as well as the household's social and economic status. Families of higher status or wealth generally occupy larger homes with more complex spatial divisions (Horam, 1988, p. 89). Common architectural elements include an entrance porch, an open area for social activities, a hearth situated either centrally or in a corner, and designated sections for storage and sleeping (Shimray, 2001, p. 64). These architectural patterns not only serve practical purposes but also reflect the symbolic and social dimensions of Naga life.

In a layout of a Naga traditional architecture, it is mainly divided into four parts – *Kediza, Kechiru, Kahu* and *Lekhake*:

- i). *Kediza* – The outermost section of traditional Naga homes serves multiple communal and practical functions. This area is commonly utilized for public gatherings, meetings, and discussions, as well as for drying agricultural produce such as rice, maize, millet, and

vegetables – a practice integral to agrarian societies where managing produce is part of daily life (Vasa, 2019). These open spaces, including courtyards and front porches, are essential for social interactions among family members, relatives, neighbors, and visitors, thereby reinforcing community bonds (Vasa, 2019). Furthermore, they provide the necessary setting for traditional practices and ceremonies that require ample room (Wunderlich et al., 2021).

In many Naga households that practice subsistence agriculture, open spaces surrounding the home serve multiple practical functions. These areas are frequently utilized to shelter livestock, house small domestic animals, or carry out outdoor tasks that cannot be accommodated indoors due to spatial constraints (Mills, 1926, p. 87). The open, unobstructed surroundings also allow for ease of movement and act as a protective buffer against environmental threats such as wild animals or accidental fires—an important consideration given the combustible materials typically used in traditional Naga construction (Hutton, 1921, p. 79; Shimray, 2001, p. 91). Furthermore, these spaces provide a safe and supervised environment for children to play, which contributes significantly to their early development and social engagement within the community. Overall, such open areas play an essential role in facilitating the day-to-day functions of Naga households while also reinforcing social cohesion and cultural continuity.

ii). *Kechiru* – Verandahs hold significant importance in Naga domestic architecture, serving various functional, social, and cultural purposes. They act as transitional zones between the indoor and outdoor environments, allowing residents to enjoy the outdoors while remaining sheltered, particularly during the monsoon season. Socially, verandahs serve as communal hubs where family members and neighbors gather to share stories, celebrate events, and strengthen community ties. Among tribes like the Chakhesang Nagas, the verandah holds special significance during major cultural ceremonies, such as the Feast of Merit, where community members gather to partake in feasting, singing, and communal activities. Architecturally, verandahs enhance the aesthetic appeal of Naga homes through decorative wood carvings and the display of trophies like wild animal skulls, which symbolize the resident's achievements and cultural heritage. Furthermore,

verandahs provide essential protection to the main entrance and interior spaces from environmental elements, contributing to the durability and longevity of traditional houses. These observations are consistent with the broader patterns of Naga vernacular architecture as noted by Hutton (1921) and Mills (1926), who emphasized the integral role of transitional and communal spaces in reinforcing both social structure and environmental adaptation.

Functionally, verandahs play a significant role in enhancing natural ventilation and lighting, which is particularly important given Nagaland's humid climate. These semi-open spaces improve indoor comfort by promoting airflow and diffused light (Hutton, 1921, p. 67). Additionally, verandahs offer a strategic vantage point for observing daily village life, enabling residents to interact with the broader community while preserving personal privacy. Beyond passive observation, verandahs serve as multipurpose spaces for receiving guests, rearing livestock such as *mithun* or pigs, engaging in blacksmithing, practicing woodcrafts, and performing domestic tasks like weaving (Mills, 1926, p. 114). In traditional Naga society, where designated common rooms were uncommon, the verandah functioned as an essential social and work area. It enriched the domestic environment by fostering community interaction, offering practical utility, improving climatic comfort, and expressing a vibrant cultural identity rooted in spatial design and daily practice (Shimray, 2001, p. 77).

iii). *Kahu* – *Kahu* is the whole interior part of a house which is partitioned into four to five parts depending on the size of a house, family, and status of a resident. These have been classified into following categories:

1. Granary section and a large wooden pounding rice table kept for pounding rice, maize, and millet, job tears etc.
2. Bedroom for peer group.
3. Bedroom for children.
4. Family urinal cabin and wooden or earthen jars for preparing local brew.
5. Kitchen and a couple bedroom.

The interior layout of traditional Naga domestic architecture reveals a nuanced spatial organization shaped by cultural norms, social structure, and environmental factors. Each Naga tribe exhibits distinct architectural patterns that mirror its unique identity, yet commonalities emerge in how space is functionally and symbolically allocated (Hutton, 1921, p. 85). The interior divisions are strategically designed to support essential household activities such as food storage (including granaries), food preparation, sleeping, and communal interaction. Notably, large wooden pounding tables used for husking rice are often centrally located, reflecting their importance in daily subsistence (Mills, 1926, p. 118). Spatial arrangements frequently indicate familial roles and social status; for instance, specific zones are designated for elders, guests, and family members, reinforcing hierarchies and values of respect (Shimray, 2001, p. 94).

In many Naga homes, seating arrangements are symbolically charged. The seating place of a married couple is often fixed and treated with reverence, as children, visitors, or even close relatives are traditionally prohibited from occupying these seats—a cultural practice that emphasizes generational respect and authority (Horam, 1988, p. 76). Moreover, interior divisions are designed with safety considerations in mind. Some homes feature concealed exits at the rear to facilitate escape during conflict, reflecting historical inter-village hostilities (Hutton, 1921, p. 48). The architectural design also responds to the local climate, incorporating features such as smoke vents, raised floors, and ventilated walls to optimize airflow and thermal comfort in a humid, hilly environment (Waterson, 1990, p. 52).

Certain interior zones hold spiritual significance, often used for ritual practices or displaying ancestral artifacts, thereby serving as sites of memory and cultural continuity (Longkumer, 2020, p. 108). These spaces foster a sense of belonging and reinforce the deep-rooted cosmological beliefs of the community. Thus, Naga domestic interiors are not merely functional spaces but also symbolic landscapes that embody the tribe's ecological intelligence, cultural values, and social organization.

iv). *Lekhake* and *Maphu* – Kitchen and Hearth: In Naga domestic architecture, the kitchen and hearth hold deep functional and symbolic significance. The kitchen often serves as

the heart of the home, acting as a communal space for daily interactions and reinforcing familial and social bonds (Mills, 1926, p. 121). Beyond its utilitarian role in food preparation, the hearth is central to traditional rituals associated with major life events such as childbirth, marriage, and festivals, underscoring its role in sustaining cultural identity (Hutton, 1921, p. 94; Longkumer, 2020, p. 110). The warmth and light provided by the hearth are essential in the colder mountainous regions of Nagaland, aiding both physical comfort and spiritual continuity (Waterson, 1990, p. 58; field observation, 2024). As a gathering point, the kitchen becomes a social hub where families come together, and guests are often received – especially during inclement weather – highlighting its multifunctional value (Shimray, 2001, p. 101).

Traditionally, the kitchen is a gendered space where women manage food preparation and storage, reflecting embedded social roles and responsibilities within Naga society. Its architectural placement and size often signify the family's social status, with more prominent households incorporating larger and more elaborate kitchen areas (Horam, 1988, p. 83). Subsistence agriculture and the use of biodiverse resources are central to Naga food systems, and the kitchen facilitates the processing and preservation of items such as *axone*, *anishi*, dried fish, smoked meat, and wild edibles like mushrooms and chillies (Jamir & Longkumer, 2015, p. 63). A distinctive feature of many Naga kitchens is the bamboo or cane kiln structure above the hearth, used for drying and storing food and tools. Small bamboo baskets (*khulache kho*) serve for organizing utensils, while larger trays (*methre chire*) are employed for multipurpose functions such as drying firewood and storing grains like rice, millet, and maize (Longkumer, 2019, p. 74).

The hearth also holds spiritual authority, often regarded as the most sacred part of the house. Rituals typically commence at the hearth, and traditionally, the couple sleeps nearby, symbolizing continuity and protection (Hutton, 1921, p. 95; Waterson, 1990, p. 59). During the Feast of Merit and other festivals, taboos govern the consumption and preparation of certain foods – such as deer meat, birds, seed-sowing vegetables (*metsigyeh*), and mushrooms – which may not be cooked at the hearth, as doing so is considered sacrilegious.¹⁵ Fire itself is imbued with spiritual meanings related to

purification and fertility, linking daily practices in the kitchen to broader cosmological and ethical systems.

Thus, the kitchen and hearth in Naga architecture represent far more than functional spaces; they encapsulate layers of cultural memory, environmental adaptation, and spiritual worldview. Their continued presence in contemporary homes signifies a living tradition that both evolves and honors the past. Understanding their significance is critical to appreciating the integral role of domestic architecture in shaping and sustaining the social fabric of Naga communities.

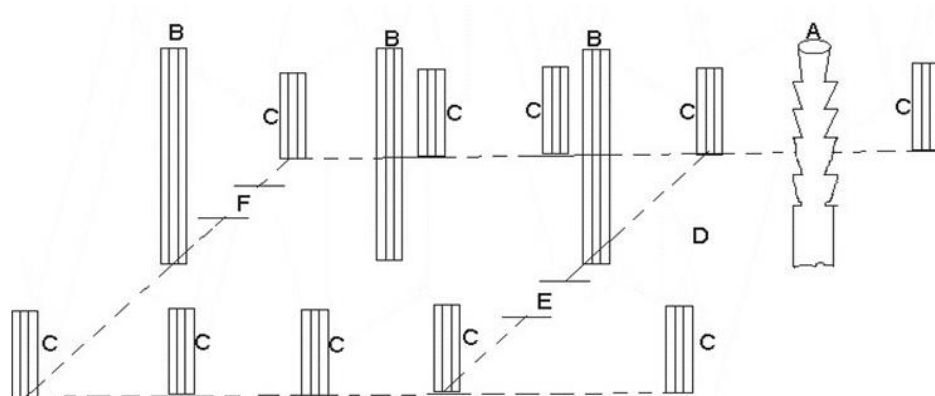


Figure 1: Layout of main posts

- a. Design and decorative measures of a main post
- b. Main post
- c. Side post
- d. Verandah/Courtyard
- e. Main Entrance
- f. Mini exit door

The architectural design elements of the Nagas, as depicted in Figure 1, can be further explored by analyzing their structural, cultural, and functional significance within Naga dwellings. These elements define both the physical integrity and the symbolic meaning of the space.

a). *Design and decorative measures of a main post*: The main post in Naga architecture holds both a structural and cultural significance, often carved with symbolic motifs that represent the family's lineage and the community's spiritual beliefs. According to Stirn and van Ham (2002), such posts are central to the concept of a Naga household, acting as both physical support and an emblem of ancestral connections. They are often decorated with intricate patterns that reflect the tribe's unique identity and beliefs in ancestral protection and guidance. These posts are a fundamental architectural element and a point of ritualistic importance, where prayers or sacrifices may occur.

b). *Main post*: The main post in Naga houses is the central pillar that supports the structure, both literally and symbolically. M. Horam (1988) highlights that these main posts are typically placed in the center of the dwelling and are essential to the stability of the structure. The post is not just a functional element but is seen as the guardian of the house, offering protection and spiritual sanctity. It often carries carvings that represent the collective identity of the household or tribe, tying it to the land and ancestors.

c). *Side post*: Side posts, though less prominent than the main post, are equally important in ensuring structural integrity. Nshoga (2009) observes that side posts are often connected with functional elements such as supporting the verandah or other extensions of the house. While they may not carry the same level of symbolic decoration as the main post, their placement and role are nonetheless significant in maintaining the spatial organization of Naga dwellings.

d). *Verandah/Courtyard*: The verandah or courtyard is a central space in Naga houses where social interactions and daily activities occur. Stirn and van Ham (2002) describes the courtyard as a multifunctional space, often used for communal gatherings, cooking, and socializing. This space is also used for ceremonial activities, where rituals and feasts may take place. It is seen as a space of transition between the inner sanctum of the home and the outer world, linking the domestic with the public sphere.

e). *Main entrance*: The main entrance is more than just a passage into the house; it serves as the point where family members and visitors are greeted. According to Horam (1988), the entrance of a traditional Naga house is designed with a sense of grandeur and spiritual

significance. It often aligns with certain cultural and cosmological beliefs, serving as a boundary that separates the sacred and profane, the private and public. Rituals and sacrifices may also be performed at or near the entrance to invoke protection and blessings for the household.

f). Mini exit door: The mini exit door provides a secondary means of egress, typically used for specific ceremonial or practical purposes. Stirn and van Ham (2002) notes that the mini exit door's placement often has symbolic meanings, related to notions of protection, privacy, and ritual passage. It is a less obvious entryway and can serve as a space for certain ceremonies or rites that need to be carried out discreetly, reflecting the Naga people's understanding of privacy and sacred space.

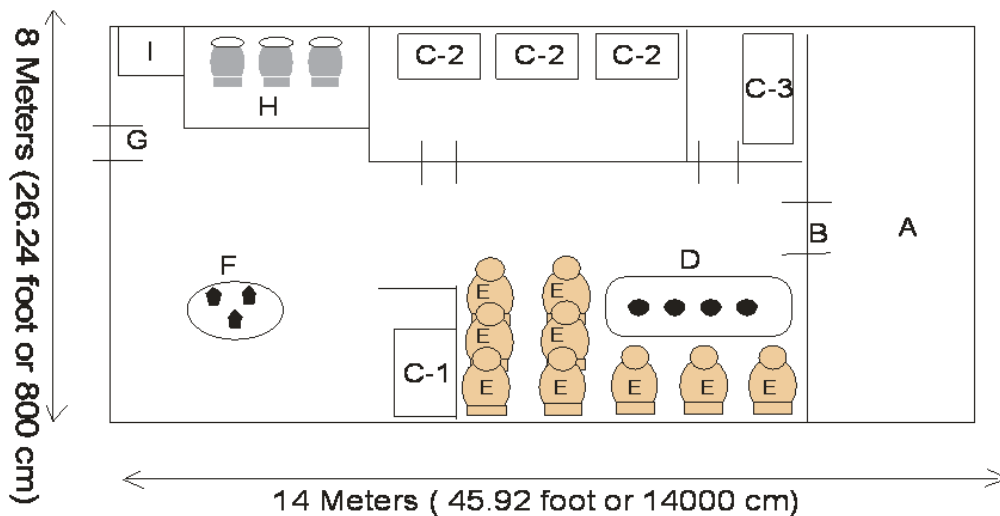


Figure 2: Sketch plan of a rich man's house of the Southern Naga tribe

- a) Front quad/courtyard
- b) Main entrance
- c) Beds (1-Couple, 2-Children, 3-Peer group)
- d) Pounding table
- e) Granary (Traditional methods of grain storage)
- f) Hearth
- g) Mini exit door
- h) Local brew space
- i) Common urinal shed/Bathroom.

Interior features from figure 2 highlight the functional and symbolic aspects of Naga domestic spaces, emphasizing the role of each element—such as the hearth, pounding table, and granary—in daily life, social interaction, and cultural practices. These features collectively reflect the Naga people's values of community, sustenance, and spiritual connection.

a) Front quad/courtyard: The front courtyard is a social and communal space, central to Naga homes. Nshoga (2009) emphasizes the role of the courtyard in the overall village system, where it often functions as the primary location for domestic activities such as food preparation, communal meals, and other shared practices. It's also a key point for cultural rituals and rites of passage. As a space that connects the house with the larger village, the courtyard is a physical manifestation of the interconnectedness of domestic and communal life.

b) Main entrance: As discussed earlier, the main entrance is a critical focal point in Naga homes, not only serving a functional role but also embodying the family's spiritual and cultural identity. Horam (1988) description of the entrance highlights its connection to the larger cosmological order, where orientation and ritual play a role in its design and placement.

c) Beds (1-couple, 2-children, 3-peer group): The arrangement of sleeping spaces in Naga homes is reflective of familial hierarchy and the importance of privacy and familial bonding. Nshoga (2009) notes that the distribution of sleeping spaces within the house often follows social and generational lines. The couple's bed is typically placed in the most private part of the house, while children's beds may be closer to the center, and peer group beds are often situated in spaces used for social interaction. These arrangements are not only functional but also underscore the Naga cultural emphasis on social structures and family roles.

d) Pounding table: The pounding table is a staple feature in Naga households, where rice and other grains are pounded for cooking. Horam (1988) elaborates on the importance of the pounding table as a communal activity, where families gather to participate in food preparation. This space, often in the courtyard or near the hearth, reflects the agricultural

lifestyle of the Naga people and their deep connection to the land and the process of sustenance.

e) Granary (Traditional methods of grain storage): Granaries are essential to Naga homes, used for storing harvested grains. Nshoga (2009) discusses the practical and symbolic aspects of granaries, noting that they are elevated to protect the contents from moisture and pests. The granary is also a key symbol of wealth and security for the family, safeguarding food supplies for the long term.

f) Hearth: The hearth is the heart of the Naga home, where food is prepared and warmth is provided. Horam (1988) explains that the hearth is often situated in the center of the home, symbolizing the family's connection to fire, warmth, and sustenance. The hearth is both a functional and spiritual center, as it represents the home's nurturing qualities and its relationship with the natural world.

g) Mini Exit Door: As mentioned earlier, the mini exit door serves multiple functions, both practical and symbolic. In addition to its use in everyday life, it is sometimes used in specific rites of passage or ceremonies, where individuals may exit or enter in a ritualistic manner. Stirn and van Ham (2002) work emphasizes the connection between these doors and spiritual beliefs about transitions between different worlds.

h) Local Brew Space: The local brew space is integral to Naga social life, where family members or communities gather to produce fermented beverages for ceremonial or communal purposes. Nshoga (2009) highlights the role of alcohol in Naga cultural exchanges and its use in bonding and ritualistic events. The space dedicated to brewing reflects the social and ceremonial importance of this activity.

i) Common Urinal Shed/Bathroom: The common urinal shed or bathroom is a practical feature of Naga homes, often located away from the main living areas for privacy and hygiene. Horam (1988) mentions that such spaces are critical for maintaining the cleanliness and order of the household, reflecting the Naga people's approach to sanitation and respect for personal and communal well-being.

3.4. Variations and Types of Traditional Architecture in Nagaland:

In olden days, construction of traditional architecture is mainly based on economical line depending on their wealth and capabilities which represent their social status. Traditional architecture has been mainly classified into various categories namely; Long houses or *Angh*/Chief house/Village priest, residential or individual house, *morung* or ritual houses, village gates, log drums, granaries, pounding table, wooden barrel, wooden bed, wooden seat, erecting of Y – posts, field huts, *Mepube/phaje* or *Mozhobu* or *Sükruba* known by various names in local dialect.

3.4.1. Longhouses or Angh/Chief house:

The longhouse is a distinctive communal dwelling that embodies the social structure of many Naga tribes, particularly those residing in the eastern regions of Nagaland. Among these tribes, the longhouses, especially the *Angh* house or the Chief's house, hold immense cultural and architectural significance, symbolizing power, status, and authority within the community. These structures serve as a physical representation of social and political hierarchy, deeply rooted in the cultural heritage, folklore, and social norms of the tribes, making them a central aspect of Naga domestic architecture (Hutton, 1921; Mills, 1926).

Traditionally, longhouses were constructed on stilts in hilly areas or on flat grounds, allowing multiple families to reside within a shared structure. The architectural design of the longhouse is characterized by its elongated wooden form, which utilizes locally available materials such as bamboo, wood, thatch, and palm leaves. This demonstrates a form of vernacular architecture that adapts to the Naga landscape and climatic conditions. The central communal space within the longhouse serves as an area for social gatherings, enhancing community unity, while individual rooms are provided for family units. Roofs are commonly thatched with grass, wooden planks, or bamboo, based on the availability of natural resources, emphasizing the tribe's reliance on their immediate environment for construction materials (Elwin, 1969).

The *Angh* house is a distinctive longhouse that holds social and political importance within Naga communities. It is notably larger and more ornamented than

regular longhouses, symbolizing the social hierarchy within the community. The house is often adorned with motifs, totemic carvings, and symbolic artefacts that reflect the tribal identity and the authority of the Angh/Village Chief (Plate. 30). Additionally, gender roles and ceremonial functions are reinforced within these spaces, ensuring traditional customs and practices are maintained. The ornamentation and decoration of the Angh house are closely associated with ancestral worship, spiritual belief systems, and the expression of social status within the village (Oppitz et al., 2008, p. 112).

The longhouse also functions as a center for cultural transmission, where traditional knowledge such as weaving, oral storytelling, costume adornment, traditional warfare techniques, and other customary practices are passed down from older to younger generations. It serves as a platform for social organization and community gatherings during festivals, rituals, and traditional ceremonies. Despite the impact of modernization, many Naga communities continue to maintain and adapt longhouses to contemporary needs while preserving their cultural heritage (Elwin, 1969; Mills, 1926).

The longhouse, particularly the Angh house, represents far more than a residential structure; it is a symbolic embodiment of Naga identity, social order, and collective memory. The continued existence of these structures stands as a testament to the community's resilience, adaptability, and cultural endurance despite the pressures of modernization. Furthermore, Angh houses continue to attract researchers, tourists, and cultural enthusiasts, promoting cultural awareness and historical preservation. Safeguarding these longhouses is crucial for protecting Naga cultural identity and ensuring the intergenerational transmission of traditional knowledge and values (Mills, 1926).

3.4.2 *Residential/Individual Houses:*

Independent/Residential or individual houses in Naga domestic architecture are typically built for individual families, varying in design, structure, and materials depending on the tribe, region, and social status of the inhabitants. These houses are constructed primarily using locally sourced materials such as bamboo, timber, and clay mud, with sloping thatch

of *Trachycarpus fortunei* (*Arecaceae* family) leaves, wooden plank, or stone slate roofs, adapting to the geographical and climatic conditions of the region (Plate 31, 32, 36 & 42) (Mills, 1926; Hutton, 1921). The design of these individual houses is a reflection of the social, economic, and cultural status of the family, ensuring that the architecture represents the clan identity, wealth, and personal space within the community (Elwin, 1969).

The structure and layout of Naga houses incorporate practical spaces such as a large wooden pounding table, hearth area, living room, and storage space for grain and local brew (Mills, 1926, p. 115). In some cases, families that offer a feast of merit often keep a long wooden barrel inside their house, symbolizing their wealth, generosity, and social status. This practice not only denotes economic prosperity but also signifies social honors and cultural importance within the village (Mills, 1926, p. 120).

In Naga society, independent houses serve as a reflection of the family lineage, clan status, and hierarchical position within the community. The materials used and the house's overall size indicate the socio-economic position of a family. Families with larger houses and more elaborate carvings are often viewed as having higher social status and influence within the village (Hutton, 1921). The architectural articulation of these houses frequently incorporates ancestral motifs, clan emblems, and decorative symbolism, serving as enduring expressions of the Naga people's tribal history and cultural traditions (Hutton, 1921; Mills, 1926).

The spatial organization of Naga houses is fundamentally influenced by traditional social structures and roles. Typically, a separate hearth space is assigned for men and women, emphasizing the gender roles and hierarchy within the household. For instance, men often occupy the front or outer sections of the house, while women and children occupy the inner sections, ensuring privacy and protection (Mills, 1926). This spatial division aligns with the social norms and customs that define Naga household organization. Additionally, many houses were constructed with a focus on security and defense, particularly in regions where inter-village conflicts were prevalent. Elevated platforms, steep staircases, and robust walls were common features in individual houses, ensuring protection from enemies and wild animals (Elwin, 1969).

The economic functionality of individual houses also played a significant role in community life. Families often used their homes as centers of production, where weaving, grain storage, and local brew preparation took place. Women engaged in traditional weaving and agricultural activities, while men managed trade and hunting tasks, thus reinforcing economic self-reliance within the family unit (Mills, 1926, pp. 118–121). Furthermore, the construction style varied among different Naga tribes, signifying distinct ethnic identities, social cohesion, and cultural heritage within their community (Hutton, 1921, pp. 45–49).

Based on field observations, certain parts of independent Naga houses continue to serve important religious and ceremonial functions. The front porch or central hearth area is often used as a space for family rituals, marriage ceremonies, or community festivals, demonstrating the enduring spiritual connection that families maintain with their ancestors, deities, and traditional practices (Elwin, 1969; Mills, 1926). In several villages, ancestral carvings and symbolic totemic figures are embedded into the wooden posts or beams of the house, emphasizing the significance of spiritual continuity, clan heritage, and reverence for the past.

Furthermore, families that had achieved significant social status or performed a feast of merit were often allowed to decorate their house façade with wood carvings, animal skulls, or symbolic objects. Such decorations were public symbols of their community contribution, generosity, and leadership within the village (Hutton, 1921; Mills, 1926). This not only reflected their social influence but also demonstrated the cultural significance of individual houses as centers of prestige and communal pride.

The construction of individual houses in Naga villages significantly reflects their harmonious relationship with nature. Houses are constructed using locally available materials such as bamboo, thatch, timber, and mud, ensuring minimal environmental impact (Elwin, 1969). In hilly regions, houses are built on elevated platforms to prevent flooding and wild animal intrusions, while in plains and valleys, houses are constructed on stone-paved foundations to ensure longevity (Mills, 1926). This approach showcases a sustainable architectural practice adapted to the local ecosystem and climatic conditions.

The design of Naga houses also emphasizes cross-ventilation, protection from heavy rainfall, and thermal insulation, ensuring comfort throughout the year. For example, thatched roofs and bamboo walls help maintain cool interior temperatures during summer while providing insulation during winter. These architectural practices have been passed down for generations, emphasizing sustainability and cultural continuity in Naga domestic architecture (Hutton, 1921).

The independent or individual house in Naga domestic architecture is more than a physical shelter; it symbolizes personal autonomy, social status, and cultural identity. It fosters economic independence, spiritual connection, and social cohesion within the community. The decorative motifs, spatial organization, and material usage within these houses reflect the family's lineage, clan identity, and social rank, ultimately influencing their status in the larger community (Hutton, 1921). Additionally, the houses function as centers for social gatherings, trade, and community decision-making, thus preserving Naga cultural heritage and ensuring the continuity of traditional knowledge (Hutton, 1921).

As modernization increasingly influences Naga villages, there remains an on – going need to preserve traditional Naga houses. Their architectural forms, rich cultural significance, and symbolic functions serve as a repository of traditional knowledge, craftsmanship, and communal living. Preservation of these houses is essential for maintaining Naga cultural identity, heritage, and intergenerational knowledge transfer (Elwin, 1969; Mills, 1926).

3.4.3. *Morung or Ritual houses:*

The term *morung* refers to a traditional bachelor's dormitory or communal house that holds significant cultural and social importance among many Naga tribes in Nagaland, India. It primarily serves as a space where unmarried young men of the village reside and receive training in traditional knowledge, customary practices, warfare skills, craftsmanship, and social values from elder members of the community. The *morung* plays a crucial role in preserving and transmitting indigenous knowledge, cultural values, and social norms from

one generation to another. It also functions as a village watchtower, ensuring vigilance and protection against external threats in earlier times.

Structurally, the *morung* is built using locally available materials such as bamboo, wood, and thatch, often elevated on platforms for protection. The entrance of the *morung* is commonly adorned with symbolic carvings or totemic figures representing the tribe's history, myths, and beliefs. Beyond its role as a residence for young men, it also serves as a social and cultural hub where community gatherings, storytelling, festivals, and ceremonies are held, fostering social unity. Despite the influence of modernization, the *morung* remains a vital symbol of Naga cultural identity and heritage, continuing to reflect the community's shared values and traditional governance systems. *Morung* was the cornerstone of the Naga cultural heritage that stood as one of the oldest and strongest means of social control and served as an agency for all round socialization through which the individual acquired knowledge, social skills and values and conformed to the norms and roles required for the integration (Imchasenla 2020). Within Naga community, *morung* is considered to be a house of learning center for the young boys and girls and a place of performing rituals by elders. *Morung* is a youth dormitory and community center, primarily used for training of young men and women. This structure is integral to Naga culture, serving as a space for instruction, rituals, and festivities. Similar to a longhouse but usually smaller, it features a high thatched roof and is decorated with wooden carvings in the shape of birds, lizard, tiger, nudity of male and female private parts, hunted skulls of wild animals and paintings. They often contain sacred objects and artifacts. In common the *morungs* are sites for cultural transmission, where elders impart traditional knowledge, hunting, and warfare to the youths.

It has been documented from various sources that *Morungs* were known by different tribes in Nagaland. Among the Aos it is known as *Arju*, *Chümpo* among the Lothas, *Apu-ki* (Boys dormitory) and *Ili-ki* (Girls dormitory) among the Semas, *Kichuki* among the Angamis,¹⁶ *Morung* (boys) and *Yo* (girls) among the Konyaks, *Rehangki* for boys and *Releiki/Releuki* for girls among the Zeliang, *Nohdrang* among Dimasa Kacharis and of the likes.

Inzule Zeliang (2024) maintains that the *Morung*, which is usually found close to the village gate, serve as defensive hub. For the Semas, the Village Chief's house served as a *Morung*. Every clan of the Ao Nagas has its own *morung*, even though they were organized based on the clan system. The elders of the community determined the date of *Morung's* construction. Every home contributes building materials for the *Morung*, and the priest performs the ceremonies. It is thought to be the village's most exquisite or noteworthy home. In the end, the *morung* supported preserving the communities' sense of communal identity and social cohesiveness. The bachelor dorm, where the young men live and study, is the most notable structure in the neighborhood.

Accordingly, among the Chakhesangs, the *morung* is known as *Kekhroke* (boys' dormitory) and *Kezhike* (girls' dormitory) where peer group sleeps together in one house numbering to 6 – 8 members and the owner of the host house is called *Kekhro mekwe* or *Kezhi mekwe*. Those sections of groups help and work for one another in turn during agricultural season both in jhum and terrace cultivation. During the time of cultivation, boys consisting of 6 – 8 members along with two girls known as *Ekhrinhi* shall work together singing seasonal and love folk songs.¹⁷

Longchar (2017) observes that the *Morung* which was the central institution of the Nagas during the early period where young men were imparted knowledge on the past glories, customs, traditions and warfare. It served as a guard house of the village against enemies. It was also a place of feasts of merit and other religious ceremonies. The coming of the British and the spread of Christianity slowly led to the withdrawal of the *morung* from the Naga society which was once a significant aspect of the Naga culture and tradition. Various scholars have offered differing interpretations of the *Morung's* role within Naga society. Elwin (1947) suggested that the *Morung* served as “an institution to save children from witnessing the primal scene and to prevent them from being “an embarrassment to their parents” (Elwin 1947, p. 244). This perspective underscores the *Morung's* function in maintaining familial privacy and social decorum. Fürer-Haimendorf (1939) emphasized the *Morung's* deep cultural roots, asserting that “...the *Morung* belongs together with the log drum, the oldest cultural stratum of the Naga Hills” (Fürer-

Haimendorf, 1939, p. 73), highlighting its integral role in the traditional societal framework. Conversely, Peal (1893) viewed the *Morung* as “a survival of the communal house from which private dwellings split off” (Peal, 1893, p. 244), suggesting its evolution from communal living arrangements to more individualized family units. Collectively, these interpretations reflect the *Morung*'s multifaceted role in the social, cultural, religious, and educational spheres of Naga life (Plates 33, 34, 35, 37, 38, 39, 40, 41, 43, 44, 45 & 46).

3.4.4. *Village Gates:*

In Naga domestic architecture, village gates hold profound cultural, social, spiritual, and defensive significance beyond merely serving as entry points. These structures symbolize the identity, heritage, and traditions of the community, marking village boundaries and reinforcing territorial control and communal pride. They act as symbolic barriers that define both the physical and social limits of the village, fostering unity among its inhabitants.

Naga village gates are often adorned with intricate carvings and sculptures, including representations of animal horns, human skulls, female figures, deities, and celestial symbols like the sun, moon, and stars. These motifs reflect historical practices such as headhunting traditions, warrior achievements, and ritual feasting, embodying the community's past and cultural beliefs. Artistic embellishments on the gates also depict mythological figures and ancestral connections, preserving oral traditions and reinforcing the tribe's bond with nature (Hutton, 1921; Mills, 1922; Oppitz et al., 2008).

The construction of these gates requires skilled craftsmanship, with intricate designs and structural techniques passed down through generations. The level of detail and ornamentation in a gate often reflects the village's status and prosperity. Some villages feature highly elaborate gates with detailed carvings, while others have simpler designs, indicating variations in social standing within the tribal framework (Hutton, 1921; Oppitz et al., 2008).

Historically, Naga villages were strategically built in remote, hilly terrains to safeguard against external threats, including raids from neighboring tribes. The village gates played a crucial defensive role, often fortified to control access and provide security. In many villages, the gates were strategically placed to allow surveillance, with some featuring barricades or elevated platforms for guarding against intruders. The number of gates varied by village size, with some settlements having as many as four to eight gates, all actively monitored by young men of the community (Mills, 1922; Oppitz et al., 2008). In many Naga cultures, the village gate is seen as a spiritual boundary between the outside world and the sanctity of the village. It marks the transition from the mundane to the sacred, separating the spiritual and physical realms. This boundary often has ritual significance, and entering or exiting the village may involve certain spiritual practices or ceremonies. Some Naga villages believe that gates and the areas around them are protected by guardian spirits. Rituals or offerings are made at the gates to appease these spirits and ensure the safety and well-being of the community. The gates are sometimes adorned with statues or carvings of protective spirits or ancestors. Elderly people pronounce blessings while going and returning from the village gate; and those words were, “Let my people continue to prosper, let my kin always stay healthy and strong. No sicknesses and unwanted spirit be fall upon them”¹⁸ (Plate 47).

Village gates hold deep cultural and functional significance among the Naga tribes, playing a crucial role in rites of passage and community life. These gates serve as key points of entry during ceremonial events such as festivals, weddings, and initiation rituals, marking important transitions in an individual's life. They also act as the primary access point for visitors and members of other tribes, who are traditionally welcomed with rituals and hospitality, demonstrating the community's values of honor and respect.

Beyond their ceremonial importance, village gates function as a means of monitoring and regulating movement within the settlement. Given the close-knit and protective nature of Naga villages, these gates enable community leaders, elders, and youth to oversee who enters and exits, thereby ensuring security and maintaining social order. In some Naga tribes, young men participating in initiation rites or achieving warrior

status must pass through or stand at the village gate, symbolizing their integration into the community and their role in safeguarding it.

Strategically positioned along trade routes, many Naga villages relied on their gates as essential points for economic interaction. These entryways facilitated trade and exchange, allowing goods from different regions to be brought into the settlement. The protection of these trade routes and the commodities being exchanged was critical in sustaining the economic stability of the village.

The village gate also serves as a unifying symbol, fostering a strong sense of community and belonging among the villagers. It stands as a testament to their shared history and the collective responsibility of protecting one another. The gate reinforces the concept of "home," instilling feelings of security and solidarity among the people. Moreover, the rituals and traditions associated with the gate strengthen communal ties and reinforce social cohesion. In Naga domestic architecture, the village gate is more than just a physical structure; it embodies the identity, values, and deep-rooted connection of the community to both the physical and spiritual realms (Vasa, 2017, pp. 21 – 28).

3.4.5. *Log Drum:*

The log drum is a traditional wooden percussion instrument used by the Naga tribes of Nagaland and Arunachal Pradesh. Beyond its role as a musical instrument, it holds immense cultural significance, symbolizing victory, prosperity, truthfulness, and community cohesion (Oppitz et al., 2008). Revered as sacred, the log drum serves not only ceremonial purposes but also reinforces the social fabric of Naga communities by fostering unity and collective identity.

In Naga domestic and communal architecture, the log drum occupies a central role, embodying traditions of communication, unity, and the deep-rooted relationship between society and nature. Carved from a single massive log, often hollowed out meticulously by skilled artisans, the drum is both an artistic and functional centrepiece of village life (<https://ignca.gov.in>). Its profound, resonant sound enables it to serve as an effective

medium of communication across great distances, announcing important events, warnings, or gatherings.

Architecturally, the placement of the log drum is strategic: it is usually located in communal spaces such as village squares or within the *morung* (youth dormitory), emphasizing its role in nurturing social structure and collective responsibilities (Oppitz et al., 2008; Imsong & Kumar, 2022). These communal settings highlight the interconnectedness between domestic life and the broader village community, with the log drum acting as a symbolic and functional bridge between the two.

Traditionally, each *khel* or clan maintains its own log drum, and its playing is reserved for significant occasions, ceremonies, and emergencies. The craftsmanship involved in creating a log drum is highly specialized, requiring not only expertise in wood carving but also a deep understanding of acoustics and forest resources. The choice of timber is critical, selected for its size, durability, and sound quality, reflecting sustainable practices and an intimate knowledge of local biodiversity (Imsong & Kumar, 2022).

Artistically, the log drums are often elaborately carved with motifs of animals such as mithuns, buffaloes, or tigers, and sometimes painted with vibrant natural colors. These carvings are not merely decorative; they embody clan histories, myths, and cosmological beliefs (Oppitz et al., 2008). Thus, the log drum stands as a material testament to both artistic expression and cultural memory.

The playing of the drum is a highly ritualized act, often performed by teams of young men using wooden beaters resembling dumbbells. Unauthorized or frivolous playing of the drum is strictly prohibited, underscoring its sacred and solemn character (<https://ignca.gov.in>). Ownership and maintenance of a log drum are associated with social prestige and communal honor, symbolizing a village's strength, unity, and prosperity. Beyond its musical and architectural roles, the log drum plays a pivotal part in cultural transmission. It serves as a living repository of Naga heritage, preserving oral traditions, social practices, and ancestral values across generations (Oppitz et al., 2008). Used during significant events such as war victories, communal feasts, funerals, and

celestial phenomena like eclipses, the log drum powerfully manifests the intertwining of daily life, spirituality, and communal identity.

Ultimately, the log drum exemplifies the ingenuity, craftsmanship, and communal ethos of the Naga tribes. As both an architectural and a cultural symbol, it continues to reinforce the deep-rooted connections between environment, society, and tradition in Naga life (Imsong & Kumar, 2022) (Plate 48).

3.4.6. *Granaries:*

Granaries are vital for storing agricultural produce, especially rice, millet, and maize, reflecting the agrarian lifestyle of the Naga people. The elevated structures, often built on stilts supported with rough wood, bamboo, and stone slates between the main posts and the floor, protect contents from moisture and pests, with roofs designed to facilitate proper ventilation. These represent food security and the agricultural practices prevalent in Naga society. They are crucial to the survival and prosperity of Naga communities, playing a key role in their agricultural, social, and cultural practices. In Southeast Asia, granaries have historically functioned not only as essential storage facilities for agricultural surplus but also as instruments of social organization and economic stability, a relationship that Scott (2009) highlights in his broader discussion on subsistence strategies and state formation.

Granaries are primarily used for storing harvested crops, such as rice, millet, maize, and other agricultural seed sowing grains. This is crucial for ensuring food security during the period of facing natural calamities and when crops are not being harvested. The granary helps the family and community maintain a stable food supply throughout the year. Maintaining of granaries varied from tribe to tribe; the Angami and Chakhesang Nagas most of them stored grains inside their house which are made of bamboo baskets known as *Bao (Poula)*, *Bu (Khezha)*, *Khi (Chokri) Tshü (Angami)*¹⁹ and other tribes like Ao, Lotha and Eastern Naga people, their granaries are characterized by elevated platform huts made from bamboo, wood, or other locally available materials either kept outside the house or field which are smaller in size than the residential houses (Plate 49).

In traditional Naga society, the size and condition of a granary is an indicator of a family's wealth and prosperity. The more abundant the stored grains, the more successful the family is in terms of agricultural productivity. As such, the granary becomes a symbol of wealth, with wealthier families typically having larger and well-maintained granaries. Granaries are closely tied to social stratification in Naga villages, with higher-status individuals or families having more elaborate and larger granaries, while those of lower social status have smaller, simpler structures. This hierarchy reflects the broader social organization within the community (Hutton, 1921).

Granaries are often elevated on stilts, not only to protect the food from dampness and pests but also as a defensive measure. The elevated design makes it more difficult for animals or pests to access the stored food. This elevation also adds a layer of security, as it keeps the food out of reach of wild animals, pests, and sometimes protects it from the outbreak of fire (Elwin, 1969).

Among some Naga tribes, granaries often have a ceremonial or symbolic role in Naga culture; rituals are performed at the granary to ensure the health of the harvest and to express gratitude for the abundance of the land. Offerings are made to guardian spirits or deities to ensure good crops in the future. Within some tribes, granaries are also seen as places where the relationship with ancestors or unseen spirits is honored. They are sometimes decorated with carvings or symbols or have rituals performed with tree leaves that reflect ancestral traditions or beliefs. This further elevates the granary's significance as a space that connects past, present, and future generations (Mills, 1926).

The granary is viewed as the lifeblood of a Naga household, as it denotes the product of hard labor and is directly linked to the success of the agricultural cycle. Agriculture is a central part of Naga society, and the granary embodies the direct relationship between the land, labor, and food security. Granaries emphasize the self-sufficiency of Naga communities in storing food for future use; they reduce dependence on outside sources and ensure that the village or individual family can weather periods of scarcity (Fürer – Haimendorf, 1939).

Granaries are typically compact and efficient in design, maximizing the use of available space while ensuring the stored food remains safe and it is simple yet effective architecture showcases the ingenuity of Naga builders in adapting their structures to their environment and needs. It takes 3 – 4 days of making a single grain bamboo basket costing 4,500 – 6,000 rupees depending on size and quality of bamboo. Locally available source materials such as *Echi*, *Kepho* and *Mezhilo* are the grain bamboo basket been made by the skilled craftsman.²⁰

Granaries hold a pivotal place in Naga domestic architecture, serving not only as structures for food storage but also as important sites for intergenerational learning and cultural transmission. These storage units are integral to teaching younger generations about agricultural practices, food preservation, and long-term planning for sustenance and survival (Mills, 1926, p. 125; Shimray, 2001, p. 112). In many Naga communities, the construction, maintenance, and use of granaries involve family participation, through which children acquire essential skills related to farming, resource management, and sustainability. This hands-on involvement provides opportunities for elders and skilled craftsmen to pass down traditional knowledge regarding crop selection, drying, and preservation techniques, ensuring continuity of agricultural expertise (Jamir & Longkumer, 2015, p. 68).

Beyond their practical function, granaries symbolize agricultural success, social status, and a household's connection to both the land and ancestral heritage. Their architectural design often reflects tribal aesthetics and environmental considerations, such as elevated platforms to protect grain from pests and moisture, and the use of locally sourced materials like bamboo and timber, which enhance durability and integration with the natural landscape (Imson & Kumar, 2022; Oppitz et al., 2008). Moreover, granaries represent collective values—respect for nature, communal resilience, and the cultural emphasis on food security. As such, they embody the adaptive strategies of the Naga people in preserving their agrarian livelihoods while fostering ecological balance and sustainability (Imson & Kumar, 2022).

3.4.7. *Pounding Table:*

The pounding table in traditional Naga households is a culturally significant element of domestic architecture, serving both functional and symbolic roles. These tables are typically categorized into two types: a large version primarily used for pounding grains such as rice, maize, millet, sesame, and Job's tears, and a smaller version, which is multifunctional – used for pounding and, when inverted, as a seat. The pounding process is often communal and usually performed by women, highlighting their critical role in sustaining the household and symbolizing broader themes of livelihood and nourishment within Naga society (Jamir & Longkumer, 2015, p. 58).

During festivals and community feasts, the pounding table takes on additional social importance. It is used for preparing and distributing food, particularly meat, reinforcing community bonds and emphasizing the values of cooperation and hospitality (Mills, 1926, p. 108). Traditionally, women are the primary users of these tables, and their association with food preparation further reflects gendered domestic roles. The table is thoughtfully designed for comfort and utility, with proportions that allow for efficient use during prolonged tasks.

Though the large size of pounding table varies, commonly it is measured 3.658 – 4.267 meters (12 – 14 feet) in length, and 1.524 meters front, 1.2192 meters back (5 - 4 feet) in breath and the height measuring 2 - 2 ½ feet (60.96 – 70.2 cm). The pounding table is often placed either right or left side behind the main entrance or in central areas of the home. Its location within the home emphasizes its importance in the daily routine and social fabric of Naga society. The table's presence is therefore closely tied to the overall layout and function of traditional Naga architecture, blending utility and social significance (Plate 50).

The material construction of the pounding table showcases local craftsmanship, often made from durable, carefully selected wood. This reflects both ecological knowledge and a deep cultural connection to the natural environment (Imsong & Kumar, 2022; Oppitz et al., 2008). While smaller pounding tables are common in most households, larger ones are less prevalent and typically owned by families of higher social

standing—often those capable of hosting a feast of merit (Oppitz et al., 2008). The construction of such tables is preceded by ritual tree-cutting, followed by communal labor, during which workers are offered rice beer and meat, underscoring the social and ceremonial value of the object (Oppitz et al., 2008).

Typically placed behind the main entrance or in a central part of the house, the pounding table occupies a prominent position within the home, reinforcing its role in daily routines and community life. Beyond its functional purpose, it stands as a cultural artifact representing tradition, labor, communal participation, and social identity within Naga society (Imsong & Kumar, 2022).

3.4.8. *Wooden Barrel:*

In traditional Naga domestic life, the absence of plastic and steel utensils led to the widespread reliance on locally available materials such as wood and bamboo for crafting essential household items, including spoons, plates, and storage containers. Among these, wooden barrels for brewing local rice beers occupied a prominent place, serving both practical and symbolic functions within the social and architectural fabric of Naga society, as described by Mills (1926).

Community-based observations indicate that wooden barrels in Naga households were predominantly used for fermenting traditional beverages such as *zutho/zitho*, and *zide/thutshe*, but were also sometimes repurposed for grain storage. These multifunctional containers reflect the adaptive strategies of Naga society, where practical objects serve multiple roles within daily life. Additionally, earthen pots were frequently used for the fetching and preservation of water, aligning with practices documented by Jamir and Longkumer (2015). The continued use of these traditional containers underscores the persistent relationship between material culture, ritual practices, and ecological adaptation in Naga society, as noted in Mills (1926). Among Naga communities, it was observed that the brewing of rice beer remains a vital cultural practice, deeply embedded in ceremonial, festive, and communal contexts. The wooden barrels used for brewing are not merely

storage vessels; they embody symbols of hospitality, unity, and social bonding, consistent with earlier observations by Mills (1926) and Oppitz et al. (2008).

Research findings reveal that wooden barrels used in brewing local rice beer are handcrafted by skilled artisans within Naga communities, employing traditional techniques passed down through generations. These practices reflect not only the continuity of artisanal knowledge but also the deep ecological awareness of the community (Mills, 1926). The choice of wood for these barrels is typically guided by its durability and suitability for fermentation, which aligns with earlier ethnographic accounts highlighting the indigenous ecological knowledge embedded in Naga society (Mills, 1926).

In many households, these barrels are carefully placed and maintained, underscoring their cultural significance. Brew barrels play an important role during key social events such as feasts of merit, seasonal festivals, and marriage ceremonies, further affirming their role in the social and ritual fabric of Naga life (Mills, 1926). The act of sharing locally brewed rice beer is an essential practice in Naga culture, symbolizing respect, friendship, and unity. The shared consumption of the beverage, often from the same barrel, is a social gesture that strengthens bonds and asserts cultural identity, as noted by Mills (1926) in his ethnographic studies on Naga society.

Furthermore, the size and quality of these barrels are often indicative of the wealth and status of the household or clan. Larger barrels, typically measuring around 6.15 meters (20.2 feet) in length, with circumferences of 3.20 meters on the larger side and 2.75 meters on the reverse side, are associated with wealthier families or communities. These larger barrels enable the storage and brewing of substantial quantities of beverages for grand feasts and ceremonies. Smaller barrels, ranging in size from 2.8 to 10 feet in height and 4 to 7.10 feet in circumference, are more common and owned by almost every household, though the larger barrels are typically communal property or owned by the wealthiest families known as *Etsü*,²¹ these larger barrels are often borrowed or exchanged between families during important occasions such as festivals or merit feasts, serving as symbols of communal cooperation and prestige (Mills, 1926) (Plate 51).

3.4.9. *Wooden Bed:*

In Naga domestic architecture, the wooden bed occupies a significant functional and symbolic position, reflecting intricate craftsmanship, social stratification, and ritual practice. Traditionally, these beds are meticulously hand-carved from single, solid blocks of wood, employing indigenous woodworking techniques that emphasize durability and aesthetic restraint (Varuni, 2024; Imsong & Kumar, 2022). Such craftsmanship evidences a sophisticated material culture wherein artisanship and ecological knowledge are deeply intertwined.

Beyond its utilitarian function, the wooden bed assumes critical roles in ceremonial contexts. It serves as the site for childbirth, symbolically marking the entry of life, and is similarly employed during death rituals, where the deceased are washed and laid out prior to interment (Oppitz et al., 2008). These practices underscore the bed's role as a material anchor at pivotal moments of social transition, emphasizing its liminal significance within the domestic sphere.

The selection of wood species and the complexity of carvings are closely associated with social hierarchy and household prestige. High-status families traditionally commissioned beds from superior timbers such as *Phoebe goalparensis* (bonsum) and *Amoora wallichii* (*amari/lali*), distinguished both for their material qualities and symbolic connotations (Plate 52) (Varuni, 2024). The size, ornamentation, and wood type of the bed thereby function as visible markers of wealth and status (Imsong & Kumar, 2022). In addition to status, the wooden bed often embodies protective and spiritual symbolism. Decorative motifs, particularly in higher-status households, incorporate ancestral emblems and apotropaic symbols intended to invoke spiritual guardianship over the sleeping occupant (Oppitz et al., 2008). These symbolic aspects reaffirm the role of material culture in mediating relationships between the living, the ancestral dead, and the spiritual cosmos.

The wooden bed's integration into the broader architectural ensemble reflects vernacular principles emphasizing environmental responsiveness, functional minimalism,

and aesthetic coherence. As Varuni (2024) and Imsong & Kumar (2022) observe, the Naga architectural tradition privileges the interplay between natural materials and social meaning, suggesting that domestic spaces are not merely shelters but living expressions of cultural identity and collective memory.

While targeted studies specifically addressing wooden beds remain limited, broader ethnographic and architectural scholarship extensively documents the role of woodcarving as a vital expressive medium in Naga society. As Oppitz et al. (2008) demonstrate, carvings in domestic and ceremonial structures, such as *morungs* and village gates, serve not only decorative functions but also act as communicative devices articulating social status, ancestral lineage, and community cohesion.

3.4.10. *Wooden Seat:*

Wooden seats are an essential element of Naga domestic architecture, blending practical utility with deep cultural and symbolic value. Traditionally crafted from seasoned hardwood, often carved from a single log, these seats are far more than simple household furniture – they represent status, heritage, and social hierarchy. Centrally placed in the home, wooden seats serve as a focal point for communal interactions, family discussions, and hospitality (Mills, 1926, p. 87). In many Naga communities, the size, height, and intricacy of a seat's carvings denote the social standing of its owner. Larger and more elaborately designed seats are often reserved for the head of the household or village elders, symbolizing authority and respect (Hutton, 1921, p. 112).

Beyond their domestic function, wooden seats also carry ceremonial and symbolic importance. In certain Naga tribes, these seats are used during village meetings, clan rituals, and rites of passage. During such events, they function as places of honor for tribal leaders or esteemed guests, reinforcing both traditional leadership roles and community cohesion (Fürer-Haimendorf, 1939, p. 143). Some seats are adorned with carvings depicting clan emblems, mythological figures, or significant historical narratives, acting as repositories of oral history and cultural memory (Elwin, 1969, p. 203). Passed down

across generations, these heirlooms reflect ancestral continuity and serve as tangible connections to the past.

The placement and design of wooden seats within Naga homes underscore the close integration of material culture with social structure. They embody not only functional craftsmanship but also the values of respect, lineage, and tradition that are central to Naga identity (Plate 53).

3.4.11. *Erecting of Y – Posts:*

Among the Ao, Lotha, Sema, and several other eastern Naga tribes, the erection of Y – posts hold deep cultural significance, particularly in association with the Feast of Merit – a grand socio – religious event that symbolizes wealth, social status, and generosity. The Feast of Merit is a traditional practice wherein individual or family hosts elaborate feasts for the entire community, often over multiple stages, to demonstrate their prosperity and social standing. One of the key architectural markers of this event is the installation of Y – posts, which serve as a visible testament to the host’s ability to share wealth and uphold communal traditions.

Structurally, Y – posts are integral to Naga architecture, supporting the main framework of traditional houses. However, in the context of the Feast of Merit, these posts become more than just functional elements; they serve as status symbols. According to Mills (1926), in Ao and Lotha Naga societies, wealthy individuals who successfully hosted the Feast of Merit would erect elaborately carved Y – posts at the entrance of their houses, often decorated with intricate motifs symbolizing prosperity, bravery, and their contributions to the community. These posts were typically made from durable and seasoning wood and were sometimes adorned with representations of *mithun* (*Bos frontalis*) (a semi – domesticated bovine), an animal commonly sacrificed during the feasts.

Similarly, among the Sema (Sumi) Nagas, the erection of Y – posts following the Feast of Merit was a prestigious act, marking the individual as a respected elder or warrior (Hutton, 1921). The process of selecting and carving these posts involved rituals and

community participation, reinforcing the collective identity of the tribe. The larger and more artistically detailed the Y – post, the greater the prestige of the host, signifying their ability to provide for others. In many eastern Naga tribes, notably the Chang and Sangtam, the tradition of constructing large ceremonial *morungs*, often featuring Y-shaped carved posts, articulated collective identity, ancestral memory, and leadership roles within the community (Oppitz et al., 2008; Jacobs, 1990).

From an anthropological perspective, the erection of Y – posts after the Feast of Merit reflects economic redistribution, social hierarchy, and cultural continuity. It ensures that wealth does not remain concentrated but is instead shared among the community, strengthening kinship ties and reinforcing values of generosity and hospitality (Jacobs, 1990). Even though modernization has altered traditional practices, remnants of these customs still persist in Naga villages as symbols of cultural identity.

The erection of Y – posts in Naga domestic architecture holds both structural and cultural significance. Traditionally, Naga houses are built using locally available materials such as wood, bamboo, and thatch, with Y – posts serving as a crucial element in the construction process. These posts, often made from durable and seasoning wood, provide foundational support to the main framework of the house, ensuring stability and durability, especially in the hilly terrains where most Naga settlements are located.

Structurally, Y – posts function as vertical supports that hold horizontal beams, reinforcing the house's framework against environmental challenges such as heavy rainfall and strong winds (Shimray, 2007). Their unique shape allows for the secure placement of crossbeams, reducing the need for additional fasteners and thus aligning with the indigenous building techniques that emphasize efficiency and sustainability.

Beyond their architectural utility, Y-posts hold profound cultural significance in Naga society. The selection and erection of these posts are often accompanied by elaborate rituals and ceremonies, symbolizing protection, prosperity, and the resilience of the household (Oppitz et al., 2008; Hutton, 1921). In many Naga communities, the quality and craftsmanship of Y-posts reflect the social status of the household and the skill of the artisan (Jacobs, 1990). The careful process of selecting the appropriate tree is guided by

traditional ecological knowledge, emphasizing sustainability and the spiritual relationship between humans and the natural world (Oppitz et al., 2008). The tradition of erecting Y – posts among the Ao, Lotha, Sema, and other some Naga tribes following the Feast of Merit is a profound expression of wealth, social status, and communal responsibility (Plate 54). These structures not only serve a practical architectural purpose but also embody the values of generosity, leadership, and cultural continuity within Naga society. As indigenous communities navigate modern influences, preserving such architectural markers remains crucial in maintaining their rich heritage.

3.4.12. *Field Huts:*

Field huts in Naga domestic architecture serve as significant structures that reflect the cultural values, practical needs, and environmental adaptability of the Naga people. These huts are not merely physical shelters but symbolize the strong connection between the Naga people and their traditional way of life, linking present generations to their ancestors (Plate 55 & 56).

Field huts form an essential aspect of Naga domestic architecture, primarily serving agricultural functions. Drawing from Hutton's (1921) detailed ethnographic observations, these structures provided temporary shelter for farmers as they worked in distant fields, offering spaces for rest, storage, and protection against the elements. Jacobs (1990) similarly notes that the design of these huts is closely tied to seasonal agricultural cycles and reflects the semi-nomadic movements associated with shifting cultivation practices.

The choice of construction materials—typically bamboo, timber, and thatch—not only ensured functionality but also demonstrated sustainable engagement with local natural resources, a point emphasized by both Hutton (1922) and more recent studies by Imsong and Kumar (2022). As Oppitz et al. (2008) observe, the integration of field huts into the broader environmental setting illustrates the Nagas' profound connection to their land and an architectural approach that harmonizes with ecological cycles.

Moreover, the role of field huts extends beyond practical needs. Jacobs (1990) highlights that these spaces often functioned as informal settings for the intergenerational transmission of agricultural knowledge and craftsmanship, underlining their contribution to cultural continuity. Oppitz et al. (2008) further suggest that the discreet blending of field huts into the landscape signifies not only a practical strategy but also an aesthetic sensibility rooted in traditional ecological knowledge.

Variations in the use and structure of field huts across different tribes, particularly depending on the proximity of fields to the main village, are well documented by Hutton (1921). Additionally, Waterson's (1990) comparative analysis points out that such hut sometimes took on spiritual dimensions, serving as venues for rituals intended to secure agricultural blessings and reaffirm the relationship between the community and their land.

From the above works, it thus becomes evident that field huts are more than functional shelters; they encapsulate a nexus of economic necessity, cultural resilience, environmental adaptation, and spiritual practice in Naga society.

3.4.13. *Mepube/Phaje, Mozhobu and, Sükruba:*

The term, “*Mepube*” in Khezha “*Mozhobu*” in Poula, and, “*Sükruba*” in Chokri, is a place of importance in every village. It is an alleviated platform built out of wood and placed in almost every *khel* in the village. This place also serves as a ‘Watch Tower’ for the purpose of passing information to the village/*khels* dwellers. The informer stands on top of the wooden platform to announce the approach or coming of enemies’ or inform about a war that will take place, the loss or victory of a battlefield, etc.

While on a lighter vein, it is a place where youths gather to share and discuss things related to upcoming programs, festivals, games and sports, singing folksongs, narrate folk tales, etc. Even today, one would find traces of this wooden platform that served much for the community in making important announcements, merry-making, and the like. Many villages still preserve *Mepube/Mozhobu/Sükruba* with some modification or without. As one passes through several villages, you will see that it still stands tall, symbolic of culture, which is deeply inherent in the people of the Chakhesang Naga tribe. These platforms

serve as important spaces for various cultural, social, and religious activities. These indigenous platforms are utilized as communal spaces for substantial gatherings and events. These gatherings provide opportunities for the village youth to come together, share experiences, exchange knowledge, and strengthen social bonds²² (Plate 57).

Traditional platforms are central to preserving and promoting Naga traditions, customs, and values. Through various cultural activities such as storytelling, and music performances, the younger generation learns about their cultural heritage, ensuring its continuity. These platforms serve as spaces for transmitting indigenous knowledge, skills, and beliefs from elders to the younger generations. From this platform, young people learn from their elders about traditional knowledge, agriculture practices, traditional medicine, and the art of warfare, folktales, folksongs and various arts and crafts.

Traditional platforms often serve as sacred spaces for spiritual and religious rituals. Ceremonies such as harvest festivals, marriage rituals, and community prayers are conducted on these platforms, reinforcing the spiritual connection and reverence for ancestors. The platforms play a significant role in fostering a sense of community identity and cohesion. By regularly congregating in these spaces, community members strengthen their collective identity, share common values, interest, and develop a sense of belonging and oneness.

It is essential in preserving and promoting culture, ensuring intergenerational transmission of knowledge, and strengthening community bonds. They are not merely physical places but symbolic representations of cultural heritage and collective identity.

The Chakhesang community in Nagaland constructs their dwelling houses in four distinct types, reflecting their unique cultural and social practices, as observed during a survey determined by social status and economic conditions. Unlike other Naga tribes, such as the Eastern Naga tribes or Ao and Lotha, who often build separate dwelling residences and *morungs* – communal houses used for social and ceremonial purposes – the Chakhesang integrate various architectural styles within their residential structures. These types include the *Zathoke or Khrühuke*, a richly decorated house with gable horns symbolizing wealth and prestige, to more modest structures for lower – status families,

reflecting economic disparities. This architectural diversity underscores the Chakhesang's social stratification and their adaptation of traditional building practices to economic realities.

Accordingly, the Chakhesangs construction of houses for dwelling purpose has been classified into four main categories - *Zathoke* or *Khrühuke*, *Kechi Chirhü*, *Kechi Poti* and *Kemhi*.

a). *Zathoke* or *Khrühuke* with *Echü Ketsü Cho*: Type one traditional architecture hold decorative gable horn with wood carvings of animal heads and this first type of architecture is the richest group of people who offers feast of merit twice. After completion of feast of merit, observing all norms and performing rituals for 29 days, the couple is entitled to construct a new house with gable horn of decorative design and a hole in the middle and wood carvings of animal heads with design and decorative carvings represented by *mithun* heads at the front walls known as *Zathoke* or *Khrühuke* and *Echü Ketsü Cho* or *Lichicho* respectively and a colorful shawl having different designs with animal heads called *Lichira* or *Thüpi khu*. During the time of feasting, the couple invests more wealth than any other following Feast donors. The actual number of days for performing rituals and observing *genna* in this feast of merit is 30 days. But if a person does not complete the total given days then it is considered that they may fall sick and life will be shortened and afraid of their unseen supreme god or gods putting into an account that they are overtaking their gods²³ (Plate 58).

b). *Kechi Chirhü* with *Echü Ketsü Cho* – (Carved gable horn with design and decorative measures): The second type of Feast of Merit offers 3 (three) times performing rituals and observing *genna* for 9 days in each Feast of Merit. After offering Feast of Merit 3 (three) times and performing rituals the couple is entitled to construct a new house with carved gable design representing a *mithun* horn known as *Kechi Chirhü* with *Echü Ketsü Cho* - wooden decorative carvings design representing *mithun* heads at the front walls. In completion of all formalities, the couple is entitled to wear a pure white shawl stitched thickly using the sharp spines of porcupine coat, or quills called *Terü Kedera* (Plate 59).

c). *Kechi Poti* with *Echü Ketsü Cho* – (Gable horn not raised beyond the roof top with wood carvings representing *mithun* heads): Third group of people also follow the same system of performing rituals like the second group but the difference between these two are- the third group is the follow up of the second group in which their performing of rituals, offering Feast of Merit is incomplete which means they offer Feast of Merit only 2 (two) times. Therefore, the third group of people will not construct a house of gable horn rising above the house. Performing rituals and offering Feast of Merit two times will entitle the couple with gable not rising above the roof top and wood carvings of decorative design represented with *mithun* heads at the front walls known as *Echü Ketsü Cho* and the couple is entitled to wear a pure white shawl which is a stitched thickly using the sharp spines of porcupine coat, or quills called *Terü Kedera*²⁴ (Plate 60).

(d). *Kemhi* – Simple: The last and the fourth group of people are considered economically the poorest section of people because they could not offer Feast of Merit and therefore construct their house plain which is without gable horn and any design or decorative measures. They are not entitled to wear traditional shawls which were entitled by the above three group of people. During the time of constructing their houses, they offer simple lunch and dinner. As such they give only local brew/rice beer with Naga dal shall be offered to the workers. The owner shall not perform rituals like the way the three upper classes performed by killing animals and make sacrifices²⁵ (Plate. 61).

Based on the importance of architecture as an interdisciplinary subject, the study focus mainly on selection of site, layout pattern and types of traditional construction of architecture, such as access analysis, visibility patterns of domestic architectures, and tracing historical links between architectural forms across the region. The chapter is mainly concerned with the general character and variation in the construction of domestic architecture among the Naga tribes of Nagaland.

As the study probes into the centrally significant role of houses within villages, it reveals new insights into the adaptive mechanisms of domestic architecture – how people shape buildings and how buildings, in turn, shape people. It explores how the rules governing layout and the use of space impact social relationships, the types of architecture

employed and their functions, such as status differentiation, ritual practices, gender symbolism, and more. Ultimately, it seeks to uncover fundamental themes concerning the idea of life and how life expresses and processes itself through architecture.

Amid the rapidly changing landscape and the growing influence of modern-style architecture – even in Naga rural villages – there has been a drastic decline in the construction of traditional houses. With this decline, traditional knowledge and the associated construction skills are also disappearing. Given this context, the research underscores the urgent need to document this vanishing knowledge and the diverse meanings embedded in traditional architecture before they are lost or rendered extinct.

Endnotes:

¹⁴. Interview with Chülonyi Lasuh, 85 years, Elder and Feast Donor; Mehumvü Lachü, 63 years, GB & Head Priest & Kekhwechülo Thele, 54 years, GB & Feast Donor, Mesulumi village, Dated: 23/12/2017.

¹⁵. Interview with Kekhwechülo Thele; 55 years, GB & Feast Donor, Mesulumi village, Dated: 13/01/2018.

¹⁶. Interview with Yabangri Changkiri, 39 years, Ph.D. Scholar, Changki village, Dated: 08/03/25; Nivibo Y Shiqi, 40 years, Entrepreneur, Mishilimi village. Dated: 03/02/2025, & Khriengunuo Peseyie, 29 years, Graduate Teacher, Jotsoma village, Dated: 01/03/2025.

¹⁷. Interview with Wenyilo Venuh, 47 years, Village Council Chairman; Kekhwechü Thele, 53 years, Goanbura (GB), & Weprechü Lasuh, 53 years, Former Head Teacher, Mesulumi village, Dated: 06 – 08/04/2017.

¹⁸. Interview with Chülonyi Lasuh, 88 years, Elder and Feast Donor, Mesulumi village, Dated: 07/02/2020.

¹⁹. Interview with P. Paul Dukru, 78 years, Ex. VCC; Sanyi Shupao, 61 years, Head Goanbura (GB); Thone Pohena, 87 years, Elderly women, Zhavame village, Dated: 16/04/2021. Dikhalo Khutso, 96 years, Elder (Rtd. Teacher); Dilhi Kreo, 86 years, Ex. VCC; Kezütsü Khutso, 84 years, Ex. VCM & Dichü Wetsah, 66 years, VCM, Zapami village, Dated: 23/06/19.

²⁰. Interview with Chülonyi Lasuh, (85 years), Elder & Feast Donor; Kekhwechülo Thele (54 years), Goanbura & Feast Donor (GB); Kezhielhi Venuh, (65 years), Head Goanbura (Head GB); Mehümvü Lachü, 63 years), Head priest & (Wenyilo Venuh, (47 years), Village Council Chairman, Mesulumi village, Dated: 06 – 08/04/2017, 14 – 15/08 & 21/09/2017.

²¹. Interview with Wenyilo Venuh, 54 years, Ex. VCC, Mesulumi village, Dated: 08/06/2024.

²². Interview with P. Paul Dukru, 78 years, Ex. VCC; Sanyi Shupao, 61 years, Head Goanbura (GB) & Thone Pohena, 87 years, Elderly women, Zhavame village, Dated: 16/04/2021. Zütsonyi Tara, 81 years, Head Goanbura; Neitelo Rhakho, 83 years, Village Council Chairman, Sümi village, Dated: 28/11/2017. Neitshütso Tsüha, 84 years, Elder & Kenemvü L. Mero, 51 years, Elder, Chizami village, Dated: 29/11/2017.

²³. Interview with Interview with P. Paul Dukru, 78 years, Ex. VCC, Zhavame village, Dated: 16/04/2021. Kezhielhi Venuh, (65 years), Head Goanbura (Head GB) & Feast Donor, Mesulumi village, Dated: 21/09/2017. Neitshütso Tsüha, 84 years, Elder, & Kenemvü L. Mero, 51 years, Elder, Chizami village, Dated: 29/11/2017.

²⁴. Interview with Chülonyi Lasuh, 88 years, Elder and Feast Donor, Mesulumi village, Dated: 07/02/2020.

²⁵. Interview with Chülonyi Lasuh, 88 years, Elder and Feast Donor, Mesulumi village, Dated: 07/02/2020.



Plate 30: The Longhouse of the *Angh* (chief) in Longwa village, located in Mon District, Nagaland, exemplifies traditional Konyak Naga architecture



Plate 31: Traditional Angami Naga architecture features with a steep thatched roof, wooden pillars, and warrior motifs, reflecting the tribe's heritage and valor.



Plate 32: Traditional Chakhesang Naga house, a rich man's residence, featuring intricate carvings of the moon, sun, stars, skulls, and animals – symbols of power and ancestral beliefs.



Plate 33: Traditional Ao Naga Arju (*morung*) featuring a steep thatched roof, intricate bamboo weaving, and symbolic carvings (a bamboo spike crowns the apex, symbolizing strength and identity, while the main pillar, adorned with animal motifs, reflects the owner's achievements).



Plate 34: Chang Naga morung with a steep thatched roof carved wooden pillars, warrior sculptures, animal skulls, log drum, and tiger figure, reflecting the community's martial heritage, spiritual traditions, and role as a center for training, storytelling, and gatherings.



Plate 35: Traditional Khamniungan *morung* with a slate roof, thatched fringe,



Plate 36: Konyak tribe traditional dwelling with a thatched roof of dried grass or palm

and rooftop spike decorations symbolizing cultural identity; crafted from bamboo and wood.	leaves, bamboo-woven walls, and an elevated floor for ventilation.
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Plate 37: Traditional Lotha tribe *Chumpo*, a circular structure with a conical thatched roof, bamboo walls, and buffalo skulls on the roof ridge.



Plate 38: Yimkhiung morung with a steeply sloped thatched roof, adorned with machetes, hanging ornaments, and bundles of crops.



Plate 39: Traditional Phom *morung*, featuring a steeply sloped thatched roof adorned with decorative tassels and bold tribal patterns (carved wooden pillars and an arched entrance, elevated ridge with wooden poles and straw bundles).

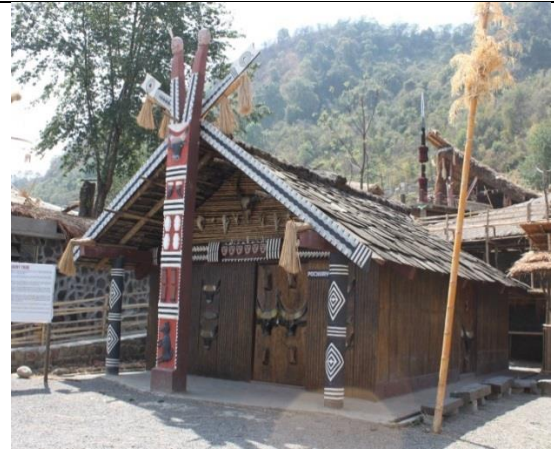


Plate 40: Traditional Pochury tribal *morung* with a steeply sloped stone-shingled roof and wooden beams (the exterior features geometric patterns and tribal motifs, while the carved gateway, decorative tassels, and ornamental horns).



Plate 41: Traditional Rengma *morung* with a carved thatched roof for insulation and rainwater runoff (intricately carved wooden panels featuring *mithun* and buffalo motifs).



Plate 42: Traditional Sangtam Naga house with a durable stone slate roof for insulation, adapted to the mountainous climate.

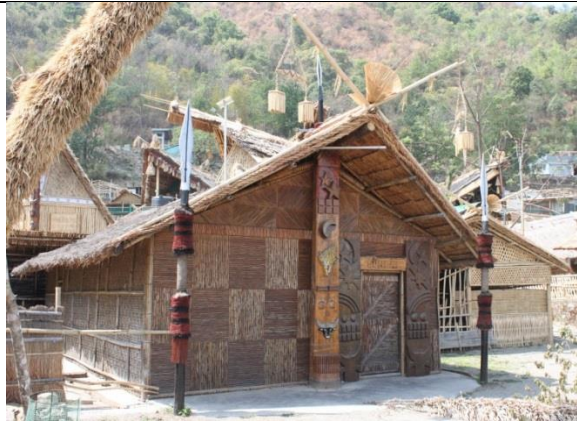


Plate 43: Traditional Sumi *morung* with bamboo and thatch construction, featuring a carved wooden facade adorned with symbols of the star, moon, tiger, and buffalo head, alongside a protective spear outside the porch.



Plate 44: Traditional Tikhir Naga house with a stone slate roof and hanging thatch design for insulation, featuring raised crossed bamboo poles.



Plate 45: Traditional Zeliang Naga *morung*, with a steeply thatched roof and carved wooden facade, embodies Zeliang heritage.



Plate 46: Traditional Garo *Nokpante* (Bachelors' Dormitory), with a thatched roof and wooden pillars, embodies warrior training and communal living.



Plate 47: Naga village gates, intricately carved with traditional motifs and depictions of warriors, animals, and ancestral symbols.



Plate 48: Log drums, hollowed-out tree trunks carved with intricate designs, are central to Naga culture, used for communication, ceremonies, and rituals (their resonant beats convey messages, summon warriors, and mark significant events, embodying community unity).



Plate 49: Separate raised hut granaries outside the house (Phelungre, Kiphire District) and a granary bamboo basket inside the house (Mesulumi, Phek District) protect harvested grains from pests and moisture.



Plate 50: The images feature a large pounding table (*Pa*), smaller wooden barrel (*Tsherü*), mini pounding table (*Vabu*), and grain bamboo basket (*Bucü*).



Plate 51: Wooden brew barrels (*Etsü*), handcrafted and symbolic of Naga unity and tradition, are central to community rituals and gatherings, especially during the Feast of Merit, reflecting cultural ties and strengthening social bonds (Mesulumi, Phek, District).



Plate 52: Naga wooden beds, hand-carved from solid wood, embody traditional craftsmanship and functional design, offering comfort, durability, and showcasing generations of indigenous woodworking skills (Longwa, Mon District).



Plate 53: Traditional Naga wooden seats, hand-carved from a single piece of wood, combine utilitarian design with cultural artistry, serving both household and communal spaces (Longwa, Mon district & Mesulumi, Phek District).



Plate 54: *Left:* Traditional Naga Y-post intricately carved for the Feast of Merit, symbolizing status and heritage. *Right:* Standing post featuring carvings of the moon and star (nature), breast shape (fertility) hornbill (valor), *zathoche* (cultural depth), and heads of a human and *mithun* (strength, identity, and feasting traditions).



Plate 55: Traditional Field Hut – Built with bamboo, wood, and thatch.



Plate 56: Terrace Cultivation Hut – Constructed with bamboo and thatch.



Plate 57: *Mepube/Mozhobu/Sükruba* – A traditional elevated platform in Chakhesang Naga villages, serving as a war tower, communal gathering space, and center for cultural exchange, storytelling, and rituals.



Plate 58: Traditional Chakhesang Naga House – This wealthy household features decorative gable horns (*Zathoke/Khrühuke*) and *mithun* head carvings.



Plate 59: Traditional Chakhesang Naga House – with intricate gable horn, carvings of *mithun* heads, and decorative animal skulls.



Plate 60: Traditional Chakhesang Naga house (third group) – Characterized by a gable roof with wooden *mithun* head carvings (*Echü Ketsü Cho*).



Plate 61: Traditional Chakhesang Naga house (*Kemhi-Simple*) – a simpler structure representing the economically disadvantaged class.

CHAPTER-4

Methods of Construction and Organization of Space

4.1. Introduction:

The domestic architecture of the Nagas is characterized by its unique and functional design that meets the needs of the local residents. Various factors, including the availability of building materials, climatic conditions, cultural traditions, and social values, determine the construction and organization of space in Naga domestic architecture (Hutton, 1921; Mills, 1922).

One of the most prominent features of Naga domestic architecture is the use of locally available materials such as bamboo, wood, creeper ropes locally known as *Buwu* or *Bauhinia vahlii* (Common name: Maloo creeper, Camel's foot climber), *Erü* and *Ekhre* (Cane/rattan), palm leaves, straw or hays, and thatch. Varieties of bamboo are used to construct the walls, floors, primary posts, and roofs of the houses. Bamboo is used to make the framework of the house, while thatch, palm leaves, or straw are used for roofing. Wood is used for the floors, pillars, walls, beam posts, gable horns, pounding table, barrel, bed (*Chisü*, *Chiza*, *Echo* or *Lichicho* and *Kechi*), and main posts. Cane, bamboo splint and creeper rope such as *Buwu* – *Bauhinia vahlii* (Common name: Maloo creeper, Camel's foot climber), *Erü* and *Ekhre* (Cane/rattan) are used to bind wood against bamboo without nails and binding wires.

Most Naga houses are traditionally single-storied structures with steeply pitched roofs, designed to withstand heavy rainfall, storms, and strong winds, while also providing shade from the sun. The walls are typically constructed from bamboo, arranged either horizontally or vertically, and skilfully woven together by local artisans. Wealthier families often use wood for the walls and flooring. Floors are usually made of packed earth or bamboo strips, and interiors are divided into rooms using bamboo partitions or simple curtains.

The construction process involves meticulous planning, including the gathering and seasoning of traditional building materials, as well as implementing preventive measures to ensure durability. Before commencing construction, rituals and ‘gennas’ (taboos) are observed to honor cultural beliefs and ensure harmony with the environment. This practice underscores the holistic approach of the Naga people to architecture, where sustainability, functionality, and cultural values are interwoven (Lasuh, 2022).

In Naga houses, timber and bamboo are the primary building materials. Ensuring the durability of these materials through proper seasoning and protective measures is crucial to the longevity of their homes. Traditional methods of material treatment, combined with architectural strategies for pest and moisture control, illustrate a comprehensive approach to sustainable construction (Sridharan et al., 2023, p. 5).

Several scholars have examined the architectural practices of Naga tribes, emphasizing their resourceful use of locally sourced materials and construction methods that align with the region's ecological characteristics. Key studies on traditional Naga dwellings focus on the specific materials and techniques used the incorporation of indigenous environmental knowledge into building processes, and the sustainability of Naga vernacular architecture, especially in modern contexts. A comprehensive review of these contributions provides a deeper understanding of the subject, which is crucial for the current research.

4.2. Seasoning of building materials

a. *Timber Seasoning*: Timber is used extensively for structural elements such as posts, beams, and rafters. Traditional methods of seasoning include:

i). *Harvesting season*: Trees are generally felled during the dry season when moisture content and humidity are at their lowest. This practice helps minimize the risk of termite infestations and fungal decay.

ii). *Air drying*: The timber is stored in shaded, well-ventilated areas for several months, allowing the wood to naturally lose moisture over time without causing cracks or splits.

iii). *Smoke curing*: Smoke curing exposes wood to hearth smoke, depositing natural preservative compounds that increase resistance to termites and fungal attack (Hadi et al., 2010).

iv). *Natural oils*: In some communities, timber is treated with plant-derived oils that possess insecticidal properties, providing additional protection against pests.

b. *Bamboo Seasoning*: Bamboo is one of the primary materials used in the construction of Naga architecture, primarily for roofing, walls, floors, and partitions. Traditional seasoning techniques include:

i). *Seasonal Harvest*: Bamboo is typically cut for architectural purposes during the winter months, from October to February, when its starch content is lower, making it less attractive to pests.

ii). *Drainage and Drying*: After cutting, bamboo is kept vertically to drain sap, followed by air drying keeping away from moisture.

iii). *Water Soaking*: After harvesting, bamboo poles are often submerged in water for at least a week or longer to leach out sugars that attract insects.

iv). *Fire Treatment*: Light charring is applied to bamboo to harden its surface, thereby enhancing its strength, durability, and resistance to pest attacks.

c. *Preventive Architectural Measures*

i). *Site selection and orientation*: Traditional Naga houses are typically constructed on elevated ground to minimize contact with damp soil, thus reducing moisture-related issues. The orientation of the house is carefully planned to optimize natural ventilation and sun exposure, which helps in further minimizing moisture retention.

ii). *Raised construction*: The houses are built on stilts, a design technique that prevents direct contact with the ground, significantly reducing the risks of termite infestations and fungal decay.

iii). *Thatch roofing*: Thatched roofs, crafted from locally sourced grasses, provide natural insulation and facilitate ventilation. The regular replacement of the thatch is crucial in preventing moisture build up and keeping pests at bay.

iv). *Smoke preservation*: Central hearths in the Naga houses produce smoke that permeates the interior, which slowly cures the wooden and bamboo surfaces, enhancing their resistance to biological degradation and decay.

v). *Routine maintenance*: Routine inspections and the replacement of deteriorating components are an integral part of traditional maintenance practices, ensuring the structural integrity and longevity of the house.

vi). *Use of ethno-botanical knowledge*: The Naga people employ local plants with antifungal and insecticidal properties to treat their building materials. This practice reflects their deep ecological knowledge and understanding of natural methods to protect their homes.

Mepusangba (2017) basically elaborates the traditional seasoning of building materials and preventive measures:

i). Collection of house building material during dry season.

ii). Wood barks are removed, dried under indirect sunlight to extract excess moisture.

iii). Bamboos are cut down during specific growth limit for elasticity, longevity and avoid cracks.

iv). Roofing materials are collected in advance and properly dried before use.

v). Selection of site should not be in damp or wet locality to avoid water stagnation.

vi). Materials should collect in a specific season or month to avoid insects – e.g. beginning from November to January.

vii). Careful selection of the species.

viii). Materials from rain and direct light were to be avoided.

ix). Saline water to sprinkle in case of attack by insects.

x). Attack on timber by termite and like insects were treated by fluids extract from fermented bamboo shoots.

xi). Post holes were filled with ashes before erecting to avoid attack of termite.

- xii). Urinate on posts to resist attack of insects and termites.
- xiii). Constant fire should be kept to avoid from insect attack on structures.
- xiv). No part from trees should be cut which has been affected by lightening, or which have running wound.

Materials are collected during a specific season and month in order to avoid insect attacks or from the termites starts from the month of October till February before the onset of windy season. The splinted bamboo are soaked for 2 – 3 days and rattan or creeper ropes locally known as *Buwu (Bauhinia vahlii)* (Common name: Maloo creeper, Camel's foot climber), *Erü and Ekhre* (Cane/rattan) kept soaking at least for a week to make more soft and tender.

Given below are some key features and methods of construction in Naga domestic architecture:

4.3. Materials:

Traditional Naga houses are predominantly constructed using locally available raw materials, such as timber, bamboo, thatch, wooden plank, and stone slates. Besides the leading utility, there are miscellaneous materials for binding without nails or binding wires, such as rattan, and natural creeper ropes *Buwu (Bauhinia vahlii)* (Common name: Maloo creeper, Camel's foot climber), *Erü and Ekhre* (Cane/rattan) were in used. These materials are used to construct traditional houses suited to the region's climate and cultural practices. Bamboo is one of the primary building materials in the region due to its flexibility, strength, durability, and abundance. Thatch, palm leaves, stone slats, and wooden planks are used for roofing, and wood is used for framing and structural elements. The design and construction methods vary among the different Naga tribes, reflecting their distinct cultural identities.

In Naga domestic architecture, locally sourced materials such as bamboo, timber, palm leaves, and thatch are integral due to their abundance in the region and their suitability for the local ecological conditions. This reliance on natural resources allows local communities to construct and maintain their homes in a cost-effective and

sustainable manner. These materials contribute to the comfort of the interior spaces, as the air gaps and fibres in thatch and palm leaves aid in regulating indoor temperatures. This passive cooling and heating mechanism reduces the need for artificial climate control, reflecting the deep understanding of environmental factors in traditional architectural practices.

The use of renewable materials like bamboo and thatch is in alignment with principles of environmental sustainability, as it minimizes reliance on non-renewable resources. This sustainable approach not only ensures the longevity of the built environment but also mirrors the Naga people's ecological consciousness. In line with Rapoport's (1969) exploration of how architecture reflects cultural values, these practices also embody a rich cultural heritage, showcasing the craftsmanship and knowledge passed down through generations. The use of such materials ensures the preservation of both the architectural form and cultural traditions that continue to define the Naga identity.

Moreover, the aesthetic value of Naga homes is significantly enhanced by the use of raw, natural materials. The organic textures and earthy tones of bamboo, thatch, and palm leave create a harmonious connection between the built environment and the natural landscape. This connection reinforces the sense of place and continuity with cultural traditions, which, as Rapoport suggests, play a vital role in shaping the identity of the space and its inhabitants. Despite the influence of modern construction materials, the ongoing use of these indigenous resources underscores the resilience and enduring relevance of traditional building practices in Naga architecture.

4.4. Structural design:

Naga houses typically have a raised platform or stilts as the foundation, which helps protect the home from dampness and pests. The horizontal, vertical, or crossed opposite bamboo members are intricately woven and lashed together using natural fibres or rattan. This technique provides stability and allows the structure to withstand the region's seismic activity (Plate 62 & 63).

The structural design of Naga domestic architecture integrates traditional materials, construction techniques, and cultural practices that enhance its sustainability and adaptability to the region's environmental conditions. The use of local materials and indigenous methods contributes to the durability and resilience of Naga homes. These houses are carefully designed to withstand the region's heavy rainfall, humidity, and occasional flooding. Raised platforms, commonly used in traditional Naga houses, help protect against moisture and pests, while the design of roofs and walls ensures adequate ventilation and temperature regulation. Built on stilts, these homes not only prevent water damage but also facilitate airflow, which is essential in the tropical climate. Such environmentally responsive features are well-documented in the ethnographic accounts of Hutton (1921) and Mills (1922), who observed the ingenuity and ecological awareness embedded in Naga architectural traditions.

Traditional Naga domestic architecture employs simple, yet effective, building techniques that rely on local knowledge passed down through generations. It has been a step-by-step construction process, including the joinery techniques that eliminate the need for nails or metal fasteners. The use of ropes, wooden pegs, and other traditional methods to bind the materials together discussed as an example of how these structures are both durable and eco-friendly. The examination of the structural design of Naga domestic architecture provides a comprehensive understanding of how the materials, techniques, and cultural values intersect to create sustainable, resilient homes that have stood the test of time.

The roofs are usually steeply pitched to shed heavy rainfall and are traditionally thatched with leaves or grass. The high-pitched roof also helps in natural ventilation, keeping the interior cool. Some Naga tribes incorporate carvings and decorative elements on the structural components, showcasing their artistic and cultural expressions. The walls are constructed with bamboo or wood, while the roofs are usually thatched or covered with corrugated iron sheets in modern constructions. The key techniques employed for structural integrity in Naga domestic architecture are; use of locally available materials, stilt construction, timber framing and joinery, flexible walls, sloping roof design, use of

trusses and bracing, modular additions, and earthquake resistance. Overall, the structural design of Naga houses is adapted to the local environment, climate, and available resources, reflecting the practical and cultural needs of the communities.

The architectural history and evolution of the Naga people reveals how domestic spaces are organized to reflect not only practical needs but also the social and cultural values of various Naga communities. Vasa (2019) have examined the arrangement of domestic spaces in Naga villages, emphasizing the centrality of the living area, the placement of the kitchen, and the relationship between communal and private spaces in Naga homes. The spatial hierarchy of bedrooms or sleeping areas, which may not always have partitions, is tied to how space is not strictly divided along privacy lines but rather functions as an extension of social closeness within the family unit.

The organization of space in Naga domestic architecture, therefore, revolves around the family unit. The living house or area is the central space where the family gathers around the hearth to eat, socialize, and perform daily activities. Typically, the Naga kitchen is located at the back of the house and is separated from the living rooms to prevent cooking smoke from entering the living space. The bedrooms are positioned on either side of the living area and may be separated by simple or no partitions at all.

4.5. Spatial organization:

The spatial organization of Naga domestic architecture has received comparatively limited dedicated scholarly attention; however, broader studies have provided significant insights into the interplay between built forms, social structure, and environmental adaptation. The arrangement of space within Naga houses reflects deeply embedded cultural values, social hierarchies, and responses to ecological conditions (Vasa, 2019). Building on these observations, Waterson's (1990) comprehensive analysis of indigenous architecture in Southeast Asia offers a comparative framework for interpreting how domestic structures embody symbolic meanings, ritual practices, and social organization—insights that are particularly relevant to the Naga context.

Within traditional Naga houses, the internal spatial divisions are neither arbitrary nor purely functional. Elements such as the central hearth serve as critical nodes of social interaction, kinship reinforcement, and oral tradition transmission (Lasuh, 2022). The organization of sleeping spaces, particularly the provision of separate quarters for unmarried youths or peer groups, further reflects structured age-grade systems within Naga society. Fürer-Haimendorf (1939) similarly observes that spatial arrangements among Naga tribes consistently correspond to social institutions, with peer-group accommodations reinforcing collective identity and communal responsibility.

Symbolic and ritual considerations significantly shape the spatial logic of Naga domestic spaces. Waterson (1990) underscores the pervasive role of symbolic meanings in the spatial design of indigenous Southeast Asian dwellings, a pattern mirrored among the Nagas. Decorative carvings on house entrances and gables, often depicting clan insignia, spiritual symbols, or commemorations of Feasts of Merit, not only embellish domestic architecture but also assert the social status and ritual achievements of the household. Houses distinguished by such symbolic ornamentation contrast markedly with more modest dwellings, which lack ritual markers due to the absence of ceremonial accomplishments such as Feasts of Merit (Lasuh, 2022).

The spatial organization of traditional Naga houses is also profoundly informed by environmental adaptation. The use of locally available materials—such as bamboo, timber, and thatch—combined with architectural features like raised floors and steeply pitched roofs, reflects a sophisticated indigenous response to the region’s humid climate and monsoon conditions (Vasa, 2019). These architectural strategies ensure durability, ventilation, and protection from pests and flooding, illustrating a harmonious integration of human habitation within the ecological landscape.

Contemporary developments, however, are reshaping traditional spatial patterns. The increasing use of modern materials such as cement, metal roofing, and concrete foundations has begun to alter not only the materiality but also the internal layout of Naga homes (Vasa, 2019). Nevertheless, traditional principles of spatial organization persist, often adapted to new contexts, and continue to inform cultural identity and community

life. Preserving knowledge of traditional architectural practices remains crucial for safeguarding the cultural heritage of the Nagas amid ongoing socio-economic transformations (Lasuh, 2022).

In sum, the spatial organization of Naga domestic architecture emerges as a dynamic synthesis of cultural values, social structures, ritual symbolism, environmental knowledge, and historical continuity. Understanding these interconnected dimensions is essential for any meaningful engagement with the evolving yet resilient traditions of Naga architectural practice.

4.6. Construction techniques:

Traditional Naga houses are constructed using indigenous techniques that vary among tribes but share common principles rooted in environmental adaptation and cultural significance. One of the most prevalent construction methods is the post-and-beam technique, wherein thick wooden posts—often referred to as mother posts—form the structural core, and beams and rafters are interlocked to support the roof. The structural components are typically secured using bamboo strips and creeper ropes, which offer both stability and the necessary flexibility to withstand environmental challenges such as earthquakes and strong winds. This reliance on natural binding techniques reflects a sophisticated understanding of local materials and an adaptation to seismic vulnerabilities, as emphasized in indigenous architecture across Southeast Asia (Waterson, 1990).

Bamboo plays a pivotal role in Naga architecture, serving as a primary material for walls, floors, and sometimes roofing. Its flexibility and strength make it particularly suited to the hilly terrain of Nagaland. Skilled artisans intricately split and weave bamboo into a variety of patterns, which are then used to construct walls, showcasing a deep aesthetic appreciation alongside functional needs. Bamboo is also integrated as a skeletal framework between timber and thatch and is employed as a binding material, illustrating its versatility and indispensability within the traditional construction system (Plate 64). Such practices resonate with Rapoport's (1969) emphasis on vernacular building systems

that optimize the use of readily available local resources through refined, context-specific techniques.

Roofing materials vary across regions, reflecting the adaptability of Naga architecture to local environments. Common roofing options include thatching with leaves such as *Trachycarpus fortunei* (Arecaceae), *Imperata cylindrica* (thatch grass), and other locally available materials like hay or grass. In the eastern parts of Nagaland and the Mokokchung districts, *Tokupatta* leaves (*Trachycarpus fortunei*) are predominantly used. In some areas, such as parts of Kiphire district, stone slate roofing is found, while in the Phek district, houses belonging to wealthy individuals or priests were historically roofed with wooden planks. These material choices are not only environmentally responsive but also provide effective insulation and protection from the region's heavy rainfall, further highlighting the intimate relationship between architectural practices and environmental conditions (Rapoport, 1969) (Plate 65 & 66).

Spatial arrangements within traditional Naga houses further embody cultural values. Many dwellings are constructed with a circular layout centered on a fireplace, a design that fosters communal bonds and facilitates family gatherings. The central fireplace serves as the heart of the household, symbolically and practically unifying the family unit. Homes built on stilts are another common feature, particularly in areas prone to flooding or pest infestation, offering protection and enabling the keeping of livestock underneath. This structural solution reflects an adaptation that parallels wider Southeast Asian indigenous practices where elevated housing mitigates environmental risks (Waterson, 1990).

Traditional Naga construction also employs intricate joinery techniques, such as mortise-and-tenon joints, eliminating the need for metal nails and thus enhancing structural integrity through purely wooden connections. Such craftsmanship aligns with Rapoport's (1969) observations of traditional building cultures where material constraints inspire ingenious construction solutions. Decorative elements are prominent features of Naga houses as well. Homes are often adorned with elaborate carvings, painted murals, and symbolic motifs, which not only enhance aesthetic appeal but also convey cultural

narratives, social status, and spiritual beliefs. Elwin (1969) underscores the integral role of artistic expression within indigenous architecture, where built forms serve as canvases for communal identity.

Construction of traditional houses is fundamentally a communal activity, with collective labor from clan members reinforcing social unity and interdependence. The act of building thus transcends mere physical shelter to become an affirmation of social cohesion and cultural continuity. The emphasis on the use of locally sourced materials underscores the Naga people's commitment to environmental sustainability and self-sufficiency, echoing broader patterns observed by Rapoport (1969) and Waterson (1990) across indigenous architectural traditions.

While variations exist across different tribes and regions, these commonalities in construction techniques reflect a shared ethos that prioritizes environmental adaptation, social organization, and symbolic meaning. Even as contemporary influences have introduced changes in building materials and methods, traditional Naga architecture remains a vital expression of cultural resilience and environmental wisdom (Elwin, 1969; Rapoport, 1969; Waterson, 1990).

4.7. Entrance and exits:

Naga domestic architecture showcases a variety of entrance and exit methods that reflect the diverse practices among different Naga tribes and their adaptation to the local environment. Traditional Naga houses typically feature a primary doorway—often simple openings covered by bamboo or wooden doors—sometimes adorned with decorative elements or tribal symbols. These entrances serve as the primary means of access and are often crafted with aesthetic and functional considerations in mind, highlighting the Naga's deep connection to their cultural identity (Waterson, 1990).

In elevated structures, particularly those built on stilts; secondary entrances such as trapdoors or temporary latches made of bamboo or wood provide access to spaces beneath the house, which are often used for livestock or storage. Balconies or porches extending from the front of the house serve as gathering areas and functional spaces for

drying vegetables, seeds, and grains. These design elements reflect the Naga people's need for multi-functional spaces that support both domestic and agricultural activities (Mills, 1922). Access to these elevated living spaces is typically facilitated by ladders or stairs constructed from wood or bamboo, which not only enhance mobility but also improve ventilation, creating a comfortable living environment (Waterson, 1990).

Windows, although less common in traditional designs, can serve as emergency exits during events such as headhunting raids or fires. These windows are typically equipped with shutters or sliding panels, which provide privacy while ensuring protection from the elements. In some cases, roofs also function as additional entry or exit points, particularly for maintenance purposes, showcasing the multi-functionality of architectural features in Naga homes. Beyond individual dwellings, traditional Naga villages often feature community gates or entrances, which are maintained and decorated in styles that vary among tribes, reflecting their unique customs and traditions (Mills, 1922).

Compared to modern architecture, traditional Naga homes often have fewer windows, usually featuring a common entrance at the front and a smaller exit door at the back for emergency purposes, such as escaping enemy attacks during headhunting times. Entrances are sometimes marked with symbolic elements like carvings or paintings that represent the community's identity and cultural beliefs. Individuals with notable hunting achievements may decorate their main entrance with bird feathers or animal skulls, displaying their prowess and social status within the community. These symbolic markers serve not only as aesthetic adornments but also as expressions of personal and communal identity, underscoring the social fabric of Naga society (Waterson, 1990).

These architectural features serve both functional and symbolic purposes, embodying the cultural values and social structures of the Naga people. The design of Naga homes illustrates a harmonious blend of practicality, tradition, and cultural significance, where each element of the home serves to reinforce the tribe's identity and resilience (Mills, 1922).

4.8. Adaptation to environment:

Houses in Naga architecture are built with a profound understanding of the local climate and topography. The elevated platforms enable proper air circulation and offer protection against flooding, while the thatched roofs, made from materials such as *tokupatta* or *Trachycarpus fortunei* (*Arecaceae*), stone slates, wooden planks, or bamboo, provide necessary insulation and ventilation, crucial for humid climates.

The adaptability of Naga domestic architecture to its environment is evident in the strategic use of stilts. Elevating houses helps safeguard them from the frequent floods and wildlife in the hilly regions of Nagaland. This construction method ensures both safety and stability in the face of challenging environmental conditions. Additionally, houses are often designed to align with the natural contours of the land, reducing the need for extensive modification and minimizing soil erosion, thus maintaining ecological balance.

Furthermore, Naga architecture reflects a strong commitment to sustainability. The integration of renewable, locally sourced materials, such as bamboo and timber, aligns with sustainable practices that not only reduce environmental impact but also preserve traditional building techniques and knowledge. The use of these materials highlights the community's deep respect for the natural environment and their long-standing relationship with it.

Incorporating the insights of Trigger (2004), the role of environmental adaptation and sustainable practices in indigenous architecture is crucial for understanding the dynamic relationship between Naga communities and their landscapes.

4.9. Sustainable practices:

The work of Sridharan et al. (2023) examines the Ao Nagas' architectural practices, emphasizing their deep-rooted cultural connection to local biodiversity. The study highlights how traditional building materials and methods are aligned with ecological sustainability, reflecting a harmonious relationship between the community and its environment. Concerning oral tradition, the Nagas have a deep respect for their natural surroundings, and their architectural practices reflect this ethos. The use of locally sourced materials and skilled traditional construction techniques promotes sustainability. The

houses are designed and built to be easily dismantled, reused, or repaired, contributing to long-term sustainability. Sustainable practices in Naga domestic architecture play a crucial role in maintaining ecological balance, preserving cultural heritage, and improving the quality of life for the community. These practices are deeply rooted in tradition but are increasingly relevant in today's world as societies face pressing environmental challenges (see Waterson, 1990).

The Naga approach to architecture emphasizes efficient resource utilization. For example, bamboo is a multi-functional material used for construction, flooring, and weaving, minimizing waste and reducing dependence on non-renewable resources. Additionally, house construction in Naga communities is a collective effort, with community members sharing skills like weaving and carpentry. This approach fosters social cohesion and resource-sharing, ensuring minimal material wastage and supporting long-term sustainability (Sridharan et al., 2023).

Naga homes are also energy-efficient, employing passive design strategies such as proper orientation, natural ventilation, and thermal mass for temperature regulation. These techniques reduce the need for artificial heating and cooling, which are energy-intensive and environmentally harmful. The emphasis on natural lighting and airflow lowers energy consumption while promoting a healthier living environment (Sridharan et al., 2023).

As urbanization and globalization accelerate, traditional Naga architecture offers valuable lessons in sustainable living. By adapting traditional methods to modern needs, communities can design homes that are both culturally significant and environmentally sustainable. Integrating eco-friendly practices such as rainwater harvesting, renewable energy sources, and green building techniques ensures that Naga communities remain resilient to climate change and external pressures (Waterson, 1990).

Sustainable practices embedded in Naga domestic architecture play a crucial role in preserving cultural heritage, maintaining ecological balance, and enhancing the well-being of local communities. Traditional architectural methods emphasize the use of renewable natural materials, environmentally conscious construction techniques, and careful management of resources. These features enable Naga homes to harmonize with

the region's climate and landscape, offering valuable insights into sustainable living that is applicable beyond their original context. Scholars such as Waterson (1990) have highlighted how these enduring practices reflect a deep understanding of local environments and continue to support both cultural continuity and environmental stewardship in contemporary settings.

4.10. Bamboo framework:

In traditional Naga architecture, bamboo holds vital importance as both a practical construction material and a cultural symbol. Mills (1922), in his detailed observations of the Ao Nagas, described bamboo as a key component in the building of traditional houses, emphasizing its structural uses as well as its role in expressing craftsmanship and aesthetic identity. Bamboo poles are carefully selected, cut, and treated to prevent decay, and are often split and woven together to create sturdy frameworks for fencing, walls, floors, and roofing structures (*see plates 67-75*) These frameworks are lashed together using natural fibers or rattan, demonstrating indigenous techniques of construction that prioritize flexibility and resilience.

The traditional communal houses, or *morungs*, prominently feature bamboo in their construction, showcasing not only the material's practical versatility but also its cultural significance. Bamboo serves as the primary framework, forming vertical posts, horizontal beams, and wall panels. Its inherent strength and elasticity allow Naga houses to endure seismic activities, an important feature given the tectonic nature of the region. The adaptability and lightweight nature of bamboo make it ideally suited for community-driven construction processes, allowing for easy handling, shaping, and customization of design elements (Plate 76).

Furthermore, bamboo is not just a building material but an integral part of Naga identity, deeply embedded in ritual practices, artistic expressions, and environmental philosophy (Longkumer, 2019). The natural textures and patterns of bamboo define the aesthetic character of Naga homes, creating a visual continuity between the built environment and the surrounding landscape. Bamboo's rapid renewability and abundance

in the region ensure that traditional Naga architecture remains environmentally sustainable, minimizing reliance on resource-intensive materials and supporting ecological balance.

The use of bamboo reflects a deep-rooted cultural ethos of living harmoniously with nature (Sridharan et al., 2023). Traditional building techniques are closely tied to the careful stewardship of local biodiversity, where materials like bamboo are harvested sustainably and used in ways that support long-term ecological health. Bamboo's natural insulating properties contribute to passive thermal regulation within Naga homes, keeping interiors cooler in the summer and warmer during colder months. Additionally, its malleability enables the crafting of intricate patterns and designs, enriching the architectural character of Naga villages.

The resourcefulness and environmental wisdom embodied in the use of bamboo in Naga architecture thus reveal a sophisticated understanding of sustainable building practices. What is essentially apparent is that bamboo is not merely a material but a vital link between the Naga people's cultural identity, environmental adaptation, and architectural innovation (Plate 77 & 78).

Table: 2: Types of bamboo found in Nagaland:

ID	Scientific name	Category	Author(s)	Synonym	Distribution
314751	<i>Sinarundinaria griffithiana</i>	Bamboo	(Munro) Chao & Renv.	<i>Arundinaria griffithiana</i> Munro	Saramati
314752	<i>Sinarundinaria elegans</i>	Bamboo	(Kurz) Chao & Renv.	<i>Arundinaria elegans</i> Kurz	Puliebadze, near Kohima.
314753	<i>Sinarundinaria rolloana</i>	Bamboo	(Gamble) Chao & Renv.	<i>Arundinaria rolloana</i> Gamble	Japfü Range, Kohima.
314754	<i>Sinarundinaria nagalandiana</i>	Bamboo	Naithani		Niriyo Peak, Wokha.

ID	Scientific name	Category	Author(s)	Synonym	Distribution
314755	<i>Chimonobambusa callosa</i>	Bamboo	(Munro) Nakai	<i>Arundinaria callosa</i> (Munro)	Puliebadze above Kohima and Mao.
314756	<i>Neomicrocalamus prainii</i>	Bamboo	(Gamble) Keng f.	<i>Arundinaria prainii</i> Gamble	Puliebadze, Japfü Range
314757	<i>Bambusa balcooa</i>	Bamboo	Roxb.		Wokha
314758	<i>Bambusa tulda</i>	Bamboo	Roxb.		Kohima, Jalukie
314759	<i>Bambusa palliada</i>	Bamboo	Munro		Wokha, Kohima & Zeliang Village
314760	<i>Dendrocalamus hookeri</i>	Bamboo	Munro		Kohima, Wokha
314761	<i>Dendrocalamus hamiltonii</i>	Bamboo	Nees et Arn ex Munro		Dimapur-Kohima Road, and Wokha
314762	<i>Dendrocalamus giganteus</i>	Bamboo	Munro		Kohima, Mao.
314763	<i>Dendrocalamus calostachys</i>	Bamboo	(Kurz) Kurz		Phekerkriema, Dimapur and Kohima
314764	<i>Schizostachyum polymorphum</i>	Bamboo	(Munro) Majumdar	<i>Pseudostachyum polymorphum</i> Munro	Longsachu near Wokha
314765	<i>Schizostachyum dullooa</i>	Bamboo	(Gamble) Majumdar	<i>Teinostachyum dullooa</i> Gamble	Yikhum near Wokha
314766	<i>Schizostachyum fuchsianum</i>	Bamboo	(Gamble) Majumdar	<i>Cephalostachyum fuchsianum</i> Gamble	Kohima, Dzülhami- Kilomi
314767	<i>Melocanna baccifera</i>	Bamboo	(Roxb.) Kurz.	<i>Melocanna bambusoides</i> Trin.	Jalukie
314768	<i>Calamus rotang</i>	Canes			

ID	Scientific name	Category	Author(s)	Synonym	Distribution
314769	<i>Calamus flagellum</i>	Canes			
314770	<i>Calamus erectus</i>	Canes			
314771	<i>Calamus gracilis</i>	Canes			
314772	<i>Calamus floribundus</i>	Canes			

Source: <https://indiabiodiversity.org/datatable/show/239>.

4.11. Roofing:

In Naga domestic architecture, roofing constitutes a critical component that reflects both environmental adaptability and cultural traditions. Various indigenous materials such as palm leaves, *Imperata cylindrica* (thatching grass), and bamboo are traditionally utilized to create roofs that are resilient against the heavy monsoon rains (Longkumer, 2019; Sridharan et al., 2023). These organic materials are carefully woven into tight thatching that efficiently shed water while providing insulation, regulating interior temperatures across seasons (Plate 79).

Thatching with bamboo and grass has historically been the most widespread method. However, modernization and the introduction of industrial materials have led to a noticeable decline in the practice, although it remains significant in many rural and ceremonial settings (Longkumer, 2019). In certain communities, such as the Chakhesang Nagas, the use of wooden planks and stone slabs for roofing signified elevated social status, often associated with priests or affluent households. Wooden rafters, paired with bamboo supports, enabled the construction of durable, waterproof roofs adapted to the region's intense climatic conditions.

Roofing structures in Naga houses are typically characterized by steep pitches, designed to ensure rapid runoff of rainwater and prevent accumulation that could otherwise compromise structural integrity. The gable ends are frequently adorned with intricate wood or bamboo carvings, often embodying motifs tied to ancestral reverence,

protective symbols, or markers of clan identity. Longkumer (2019) emphasize that these carved embellishments reflect the intertwined relationship between architecture, ritual practice, and social organization (see Longkumer, 2019; Sridharan et al., 2023).

Roof construction is generally a communal endeavor, reinforcing the collective labor ethic that underpins Naga village life. Use of sustainable, renewable materials not only demonstrates an environmentally attuned architectural knowledge but also serves as a medium for expressing cultural values. Traditional roofing methods among the Nagas thus exemplify a harmonious integration of ecological sensitivity, social structure, and artistic expression.

4.12. Wooden supports:

In Naga domestic architecture, wooden supports are fundamental for elevating houses above ground level, providing stability, and protecting the structure from environmental factors such as flooding and pests. Several construction techniques employing wooden supports are prevalent:

The method of elevated platforms using wooden stilts involves embedding sturdy wooden posts into the ground at regular intervals along the house's perimeter, creating an elevated platform. This design effectively safeguards the structure from dampness and pests prevalent at ground level (Oliver, 1997).

In traditional Naga architecture, wooden piles are driven deep into the ground to reach stable soil or bedrock, forming a robust foundation for the house. Building atop these piles ensures elevation and structural integrity, which is crucial in areas susceptible to flooding (Waterson, 1990).

Diagonal wooden beams are attached between vertical posts to form cross-bracing, enhancing the house's structural integrity by evenly distributing loads and providing resistance against lateral forces, such as those experienced during seismic events (Oliver, 1997). In some Naga houses, wooden supports are intricately integrated with the walls and roof, serving as load-bearing elements that contribute to the overall stability and coherence of the structure (also see Waterson, 1990). Wooden beams or logs extend from

the base of the house into the ground, acting as foundation anchors that provide additional stability and prevent movement or shaking of the structure (Oliver, 1997).

The installation of wooden supports in traditional Naga houses is typically a communal effort, with villagers working together to dig holes for posts, lift heavy beams, and secure the structural components. This collaborative process fosters a strong sense of unity and shared responsibility among community members (Waterson, 1990). The design and intricacy of these support systems often depend on the homeowner's resources and social standing. While many homes feature simpler constructions, those belonging to village chiefs or individuals who have hosted major community feasts tend to exhibit more elaborate and decorative frameworks (Oliver, 1997).

Elevating houses on wooden posts is a common feature in traditional Naga architecture, serving several functional purposes. This design helps safeguard the home from pests and rodents, minimizes moisture-related damage during the rainy season, and creates space beneath the house for storage or livestock. Such construction methods reflect the Naga communities' keen awareness of their environment and their ability to adapt building techniques accordingly. Moreover, these architectural choices contribute to the longevity of the structures and support the transmission of indigenous building knowledge through generations, reinforcing both cultural identity and practical resilience (Waterson, 1990).

4.13. Lashing techniques:

In Oliver's (1997) *Encyclopedia of Vernacular Architecture of the World*, an in-depth understanding of the construction techniques used by various cultures, including Naga tribes is provided, focusing on the use of bamboo and lashing. Lashing, the technique of tying materials together using rope or natural fibers, is critical for the stability and flexibility of Naga structures, especially in the construction of raised platforms, houses, and communal structures like the *morung*. The use of specific knotting and tying methods ensures that the structures are resistant to seismic activity and adverse weather conditions in the region.

The Nagas combine bamboo with lashing techniques to build their homes, ensuring both longevity and flexibility (Oliver, 1997). Traditional Naga architecture relies heavily on indigenous construction methods, particularly skilled lashing techniques that use natural fibers, rattan strips, or vines to bind bamboo and timber components together (Waterson, 1990). These techniques create durable joints and connections capable of withstanding the region's harsh climate and natural stresses (Plate 80).

Bamboo poles are often joined at right angles using interwoven lashing patterns, reinforcing structural stability at critical junctions, such as wall corners or roof beams. Diagonal lashings are employed to brace frameworks, particularly in constructing inclined surfaces like gabled roofs, while square lashings are used to secure structural poles where multiple elements converge. These practices reflect the adaptation of indigenous knowledge systems to the local ecology, emphasizing flexibility and resilience in the architecture. In addition, the use of natural fibers in traditional Naga construction also showcases the community's resourcefulness and deep understanding of their environment. The specific use of materials like *Bauhinia vahlii* fibers, known locally as *Buwu*, in the Chakhesang Nagas construction methods, demonstrates a remarkable adaptation of local resources, including intricate lashing techniques such as wrap-around or overhand knot lashings.

Such observations provide essential insights into the cultural significance of these construction techniques and the adaptive practices embedded in the architecture of the Naga people, reinforcing the critical role of traditional knowledge in shaping the region's vernacular architecture.

4.14. Joinery:

Traditional joinery methods involving mortise and tenon, dovetail joints, tongue and groove joints, half-lap joints, dowel joints, scarfs and splices, interlocking notches, and other interlocking techniques are used to connect wooden elements securely without the help or need for nails or modern metal fasteners (Plate 81).

The joinery methods in Naga indigenous architecture are a testament to the community's ingenuity and deep understanding of their environment. By utilizing natural materials like wood, bamboo, and rope, the Naga people construct homes that are not only sustainable and functional but also highly adaptable to the diverse and sometimes challenging conditions of the region. The construction techniques employed reflect both the practical and symbolic roles that architecture plays in Naga society, ensuring that these methods continue to be passed down through generations (Waterson, 1990).

Traditional joinery in Naga domestic architecture involves intricate and skilled techniques used to connect various wooden components. One commonly observed technique is the mortise and tenon joint, which joins beams, columns, and structural posts—ensuring both durability and load-bearing capacity. Dovetail joints, applied at structural corners, and tongue and groove joints, used for floors and walls to ensure snug fits, reflect sophisticated craftsmanship rooted in indigenous knowledge systems (see Waterson, 1990).

Half-lap joints, in which overlapping wood members are halved in thickness, are typically used to connect horizontal and vertical elements. Wooden dowel joints provide seamless, secure connections using carved wooden pegs. The scarf and splice joint—used to extend beam lengths—is similarly present in traditional frameworks, minimizing structural weaknesses through bevelled interlocking ends. Interlocking notch joints are also used to assemble walls, emphasizing both structural precision and cultural aesthetics, which are deeply embedded in the vernacular construction practices of the Nagas.

While not a joinery method in the strictest sense, wattle and daub construction remains central to traditional wall-building among the Naga communities. Wattle—a lattice of bamboo or wooden slats—is coated with daub, a mixture of mud, clay, and organic material such as cow dung, sometimes mixed with crushed plant fibers to improve bonding and longevity. This technique ensures insulation and long-term durability while being reinforced with lashing and wooden frames (Waterson, 1990).

In addition to joinery, bamboo lashing and rope binding are widely employed for fastening thatch, straw, and palm leaves (e.g., *tokupatta*), as well as for securing beams

and wall panels. These lashing techniques utilize the flexibility and tensile strength of bamboo, often allowing structures to absorb and redistribute shock—a quality especially valuable in earthquake-prone regions. The post-and-beam construction system, with vertical posts supporting horizontal beams, remains a hallmark of Naga architecture. This system enables spacious interiors and emphasizes community living, with joints carefully crafted to ensure the building’s resilience and structural harmony (also see Waterson, 1990).

4.15. Earth and clay:

Some Naga tribes use earth and clay for plastering walls or floors, enhancing the durability and sustainability of the structure. These materials are often mixed with natural additives, locally known as *kenyi* or *menatsü*, which provide added strength and longevity²⁶. In Naga domestic architecture, the use of earth and clay reflects an effective adaptation to the region’s natural resources and environmental conditions. Construction typically begins with a compacted earth foundation, offering a stable base that is sometimes reinforced with stones or other locally sourced materials (Kolkman & Blackburn, 2014).

In Naga domestic architecture, the use of earth and clay reflects an effective adaptation to the region’s natural resources and environmental conditions. Construction typically begins with a compacted earth foundation, offering a stable base that is sometimes reinforced with stones or other locally sourced materials. This method produces thick, thermally efficient walls that keep interiors cool in summer and warm in colder weather. The use of earth and clay aligns with sustainable building principles, as these resources are abundant, biodegradable, and have a low carbon footprint. Earth-based construction also contributes to natural insulation, which is particularly effective in managing the region’s fluctuating climate. In some instances, artistic elements like carved patterns or figurines are incorporated into the clay walls before they dry, adding a layer of cultural and aesthetic expression. This architectural technique is generally more common in plains regions, especially where timber or bamboo is scarce, or where the household cannot afford more expensive materials. Overall, the use of earth and clay in Naga

domestic architecture exemplifies sustainable living, resourcefulness, and cultural integration with the environment (Kolkman & Blackburn, 2014).

4.16. Stone foundations:

It was observed that certain Naga tribes incorporate stone foundations into their homes, particularly in areas abundant with durable stones. Unlike the more typical use of bamboo and wood, stone foundations are used in select regions where these materials are locally available. These stones provide a solid base for the wooden or bamboo stilts that support the homes, enhancing their overall structural stability (Plate 82).

The process of laying a stone foundation begins with clearing the construction site and ensuring the surface is level, which is essential for even weight distribution. In observations, builders select stones based on their durability, size, and shape. Larger stones are strategically placed to form the core of the foundation, often arranged in interlocking patterns to increase the cohesion of the structure. This alignment is crucial for preventing movement or settling over time.

Additionally, smaller stones fill the spaces between larger stones, often bound together with a mixture of clay or earth. The leveling and alignment of these stones are carefully maintained throughout the process, ensuring the surface remains even and stable. Once the foundation is established, the superstructure, typically constructed of bamboo or wood, is placed on top, ensuring that the foundation and the rest of the structure are securely integrated. In regions where seismic activity or unstable soil conditions are prevalent, the incorporation of stone foundations enhances the structural resilience. This construction technique reflects the community's profound understanding of local materials and their ability to adapt to the unique environmental challenges.

4.17. Community participation:

The construction of traditional Naga houses often reflects a collective spirit, with community members participating in various stages of the building process. This collaborative effort accelerates construction and fosters stronger social ties while

reinforcing shared cultural values. Community involvement in house construction highlights the importance of collective responsibility, mutual cooperation, and cultural preservation (Hutton, 1921).

Decisions regarding the construction process, including design and resource allocation, are typically made through communal consensus, demonstrating the deeply rooted democratic values present in many Naga societies. Labor is distributed based on individual expertise, with tasks such as material preparation, bamboo lashing, and structural assembly shared among community members. Elders play a pivotal role in transmitting traditional knowledge and craftsmanship to younger generations, ensuring the perpetuation of indigenous architectural practices (Hutton, 1921).

The building process often becomes a cultural occasion, accompanied by rituals and communal meals, transforming it from a labor-intensive task into a celebration of unity. This communal aspect of construction reinforces social cohesion and nurtures cultural identity. In many cases, the construction process involves not just physical labor but also ceremonial functions that reflect the community's shared values and traditions.

This communal model of construction also strengthens resilience and adaptability. In the face of natural disasters, such as floods, communities unite to rebuild or fortify their homes, illustrating a sustainable and interdependent system (Mills, 1922). Helping in the construction of others' homes is seen as an act of reciprocity, where mutual support is both expected and valued in times of need (Mills, 1922). This practice deepens social bonds and upholds the communal values of cooperation and solidarity. Thus, the act of building a house becomes more than a practical endeavor; it serves as a cultural process that nurtures enduring relationships, preserves heritage, and sustains a collective identity grounded in respect for tradition and mutual aid (Hutton, 1921).

The internal layout of Naga homes reflects this communal ethos. Household designs are created to accommodate not only everyday functional requirements but also social gatherings and cultural activities, aligning the architecture with the social structure and cultural values of the community. These spatial arrangements demonstrate how

architecture serves as a medium for reinforcing collective identity and cultural continuity in Naga society (Mills, 1922) (Plate 83).

4.18. Single large room:

Traditional Naga domestic architecture is characterized by its simplicity, multi-functionality, and cultural symbolism. Most Naga houses consist of a single large room that functions as a combined space for living, cooking, and sleeping, accommodating the entire family within one enclosed unit. These large central spaces are designed to be versatile, adapting to the needs of daily life and social interaction. The architecture predominantly utilizes locally available materials such as bamboo, wood, and thatch, aligning with both ecological considerations and traditional knowledge systems (Longkumer, 2017).

The internal spatial organization of traditional Naga houses is primarily determined by functionality rather than formality. While the central area serves general household activities, specific zones within the same room are designated for cooking, resting, and communal interactions. Elevated sleeping platforms or lofts are often constructed to maximize vertical space, separating the sleeping area from other functions of the house (Waterson, 1990). Windows and doors are strategically placed to allow for natural light and airflow while aligning with cultural beliefs related to directionality and energy. Additionally, movable partitions made from bamboo mats or wooden panels offer flexibility in creating interior divisions, which can be adjusted based on the household's needs (Mills, 1922).

In terms of architectural layout, Naga homes are commonly built in circular or rectangular shapes, depending on tribal customs and environmental conditions. While there is consistency in the broader architectural principles, variations do exist among tribes. For instance, tribes in the Northern and Southern regions of Nagaland often include within their homes a dedicated space for agricultural storage – such as granaries, pounding tables for rice, wooden jars, and bamboo baskets used for food preservation and daily use (Mills, 1922). In contrast, tribes such as the Ao, Lotha, and certain Eastern Naga

communities often emphasize communal life within their domestic settings. These groups commonly include a large room called a *morung*, a semi-public space traditionally used for social gatherings, mentoring of young men, and ceremonial functions.

The open layout of Naga homes reflects a broader cultural emphasis on community and shared experience. Rather than compartmentalized living, the homes foster daily interaction among family members and uphold a close-knit communal lifestyle. This architectural approach also reflects an intrinsic connection with the surrounding natural environment, highlighting a holistic way of life that integrates function, tradition, and sustainability (Waterson, 1990).

4.19. Central hearth or fireplace:

In traditional Naga domestic architecture, the central hearth occupies a position of both cultural and practical importance. It is the heart of the home, especially in households with a single-room layout, offering warmth, illumination, and a space for daily familial interaction (Hutton, 1921). Among the Ao and Eastern Naga tribes, the hearth is typically placed near the center of the room, often aligned with the main entrance, allowing heat to evenly circulate throughout the house. Conversely, in Northern and Southern Naga communities, it is commonly situated towards the rear of the home, frequently adjacent to the sleeping area of the couple (Hutton, 1921; Mills, 1922).

The hearth is usually constructed using materials such as three large stones, clay, bricks, or iron, and may be either sunken below the floor or raised slightly to contain embers and minimize fire hazards (Hutton, 1921). Proper ventilation is a critical aspect of its construction, typically achieved through smoke outlets in the roof or sidewalls, or through chimneys in homes that incorporate modern features (Mills, 1922).

In Naga households, the hearth serves several key functions, including cooking, heating, and facilitating social interactions. The space surrounding the hearth is typically furnished with low stools, bamboo mats, or wooden benches, creating a cozy setting ideal for conversation and storytelling. Above the hearth, a suspended bamboo rack—known as a *methre*—is often used to store items like firewood, smoked meats, fermented foods such

as *axone* and *anishe*, and perishable goods like dry paddy or chilies, especially during the monsoon season²⁷.

The significance of fire in Naga society extends beyond its utilitarian role. Within the Naga context, the hearth is a sacred space that hosts various rituals and familial ceremonies. In *morung* (youth dormitories) and homes of village chiefs or Anghs, the hearth symbolizes hospitality and collective identity. Cultural prohibitions exist around it – such as the belief that jumping over the hearth could bring misfortune to one’s parents, reflecting the hearth's sacred status (Mills, 1922).

The hearth thus functions as more than just a domestic utility; it is a powerful symbol of unity, tradition, and ancestral heritage. It embodies the emotional and cultural nucleus of the home, serving as a site for storytelling, rituals, communal meals, and generational bonding (Hutton, 1921). In elite households and community structures like the *morung* or Angh residences, hearths often occupy a central architectural position, reinforcing their symbolic weight.

Ensuring the efficient and safe functioning of the hearth requires regular maintenance, including cleaning, structural inspections, and ventilation upkeep. This care reflects the value placed on the hearth, not only as a physical feature but as a cornerstone of cultural continuity and daily life among Naga tribes (Hutton, 1921).

4.20. Sleeping platforms:

In Naga domestic architecture, the sleeping platform holds both functional and cultural significance. Elevated above the ground, these platforms are designed to protect occupants from flooding during the monsoon season, a critical concern in the region where many homes are built on stilts. The raised design also offers protection from wild animals and pests, common in the rural and forested areas of Nagaland.

Typically constructed from locally available materials such as bamboo and wood, sleeping platforms reflect the indigenous knowledge and practices in material use. These platforms often serve dual purposes: as sleeping areas and storage spaces for personal belongings, enhancing both functionality and space efficiency. Their elevation reduces

exposure to ground moisture and insect intrusion, contributing to better hygiene and comfort.

The spatial arrangement of sleeping platforms is influenced by the practical and social needs of household members. In larger homes, particularly those of higher social standing, platforms may be partitioned to ensure privacy and reflect familial roles and responsibilities. This organization not only fulfills practical needs but also aligns with social hierarchies, reinforcing respect and order within the household. Moreover, sleeping platforms play a vital role in fostering familial bonds. These spaces often become the site of social interactions such as storytelling and teaching, especially in the evenings. The shared use of sleeping platforms strengthens intergenerational learning and the transmission of cultural values, further emphasizing the role of these platforms in maintaining Naga traditions.

The design of these platforms is both simple and effective, focusing on ease of maintenance and long-term durability. Most platforms are constructed in a modular fashion, allowing for easy repairs or replacements, which are particularly important in the high-humidity environment of Nagaland. Additionally, the spatial organization of sleeping platforms often reflects deeper cultural and spiritual beliefs. The placement and orientation of sleeping areas are connected to traditional notions of household harmony and balance. Thus, the physical arrangement of sleeping spaces becomes a reflection of societal values and spiritual beliefs, interlinking architectural design with cultural frameworks. The continued use of sleeping platforms in contemporary Naga homes highlights the resilience of traditional practices amid modernization. While architectural styles have evolved, the foundational principles of sustainability, community cohesion, and cultural expression remain central to Naga housing traditions (Sridharan et al., 2023).

4.21. Alcoves or compartments:

It has been observed that, in traditional Naga housing, the main living area often contains alcoves or separated compartments, which serve both practical and cultural purposes. These divisions are seamlessly incorporated into the house's overall structure and are

commonly made from locally sourced materials such as bamboo and wood, reflecting the community's resourcefulness and environmental knowledge. Their functions vary greatly depending on the household's requirements – ranging from sleeping quarters, storage areas, and kitchens to spaces dedicated to rituals and the fermentation of local brews.

The spatial organization of alcoves often reflects the household's social and cultural dynamics. For instance, unmarried sons or daughters may occupy separate sleeping alcoves, which are positioned to ensure a degree of privacy while still being connected to the central family space. Likewise, storage alcoves are often found along the interior walls or elevated platforms to safeguard agricultural produce such as grains, millet, and dry meat from pests and humidity. These compartments are designed for both convenience and cultural appropriateness, ensuring that every item or activity has a dedicated space within the home (Oliver, 1997).

He also emphasizes the design of these compartments by highlighting the craftsmanship and aesthetic sensibility of Naga artisans. While many structures appear modest from the outside, the interiors are often detailed with finely carved woodwork, carefully woven bamboo partitions, and symbolic motifs. These decorative elements are not merely for beautification but often carry cultural significance—representing clan identity, social status, or achievements of the homeowner.

Furthermore, the adaptability of alcove spaces demonstrates the ingenuity of Naga builders in optimizing limited space. In homes where the main room serves multiple purposes – such as cooking, sleeping, and socializing – alcoves act as flexible extensions that help manage the flow and function of daily life. This multi-functionality is particularly crucial in Naga society, where communal living, intergenerational households, and cultural ceremonies require spatial arrangements that can accommodate dynamic activities (see Oliver, 1997).

The continued use of alcoves in modern Naga homes, even with the introduction of concrete and modern building materials, reflects a deep-rooted attachment to traditional spatial logic. It underscores the enduring relevance of indigenous knowledge systems and

architectural wisdom, which continue to shape how space is used and experienced within Naga society (Oliver, 1997).

4.22. Elevated platforms:

In traditional Naga domestic architecture, houses are frequently constructed on raised platforms, a design choice that reflects both environmental adaptation and spiritual symbolism. This elevation protects against flooding in lowland areas and offers a barrier against wild animals in both hilly and plain terrains (Fürer-Haimendorf, 1939; Jamir, 2017). Additionally, the act of lifting living spaces above ground level is not merely functional but carries cultural and spiritual connotations—signifying a separation from the impurities of the earth and aligning with indigenous beliefs about cleanliness and sanctity (Fürer-Haimendorf, 1939).

One of the most significant features of elevated Naga structures is the presence of communal dormitories known as *morungs*, traditionally designated for unmarried males. In certain Naga tribes like the Chakhesang, similar structures called *kezhike* (female dormitory) and *kekroke* (male dormitory) serve as educational and social spaces where peer groups are housed and socialized based on gender²⁸. These dormitories, typically located at the center of the village, act as vital cultural institutions where oral traditions, folk songs, moral instruction, and skills such as wood carving or warfare techniques are passed down from elders to the younger generation (Jamir, 2017).

Among the Chakhesang Nagas, these dormitories also function as sites of controlled interaction between the sexes. Young men often visit the female dormitories during social evenings, engaging in folk music, storytelling, teasing, and other courtship rituals. Such spaces are not only meant for entertainment but also play a crucial role in shaping communal bonds and moral development. Through this practice, youth internalize cultural values such as *metha* (fear), *menye* (shame), and *kenyü* (taboo), which are foundational to Chakhesang or Naga societal norms²⁹.

Architecturally, these homes are typically elevated on robust wooden stilts or supports. The space beneath the house—often overlooked in conventional analysis—is

multifunctional. It is commonly used for the storage of agricultural tools, firewood, and household equipment, and in some cases, it even houses small livestock (Fürer-Haimendorf, 1939). This under structure not only maximizes spatial efficiency but also reflects the ingenuity of the Naga people in adapting their living environment to practical and cultural needs. The raised design of Naga houses serves as a tangible reflection of the community's symbiotic relationship with nature and their commitment to preserving social order through built space. In contemporary times, while some structural materials may change, the practice of elevating houses continues in many villages—a testament to the resilience and enduring relevance of traditional knowledge systems in shaping Naga life and identity (Fürer-Haimendorf, 1939; Jamir, 2017).

4.23. Communal living:

In Naga domestic architecture, the ethos of communal living is deeply embedded in both the spatial arrangement and construction of dwellings. Traditional Naga houses are typically built on elevated platforms, a practice that not only provides protection against flooding and pests but also symbolizes separation from the spiritual impurities of the ground (Fürer-Haimendorf, 1939). These homes often accommodate multiple family units under one roof, particularly in extended family settings or in large communal houses. Within such structures, each nuclear family maintains a clearly designated section demarcated by bamboo partitions or wooden walls, allowing for both privacy and cohesion (Waterson, 1990).

Despite the presence of private zones, the layout is intentionally designed to foster interaction. Communal spaces are centrally located within the house, serving as gathering areas for meals, rituals, and daily socialization. Cooking areas are generally shared or situated close to individual sections, while sleeping platforms are arranged to accommodate all members in a manner that reflects age, gender, or social roles (Waterson, 1990). The single-room format common in many traditional homes enhances familial intimacy, promoting collective care and mutual dependence among household members (Fürer-Haimendorf, 1939).

This architectural approach reinforces social harmony and cultural continuity. The practice of communal living is more than a logistical solution; it represents the foundational values of kinship, reciprocity, and shared identity among the Naga people (Fürer-Haimendorf, 1939). The use of locally sourced materials—such as bamboo, wood, and thatch—not only reflects environmental sustainability but also embeds cultural narratives into the physical space. Decorative motifs carved into doorways, walls, or central pillars often denote clan affiliations, warrior achievements, or spiritual symbols, thereby transforming the home into a vessel of cultural expression (Waterson, 1990).

Overall, Naga domestic architecture is a profound reflection of the people's values and way of life. Its emphasis on communalism, spatial logic, and cultural symbolism makes it a living tradition that continues to adapt while preserving its roots.

4.24. Cultural significance:

The spatial arrangement within traditional Naga homes is not arbitrary; rather, it is carefully shaped by longstanding cultural norms, social hierarchies, and socio-religious practices. The division and use of space within these homes reflect intricate aspects of kinship systems, gender roles, and spiritual beliefs (Hutton, 1921). Core areas such as the central hearth, ancestral altars, or designated ritual corners are often imbued with spiritual significance. These spaces serve as focal points for family rituals, community ceremonies, and ancestral worship, symbolizing the home as both a physical and metaphysical center of life (Waterson, 1990). These areas are treated with deep reverence, governed by strict behavioral norms and taboos that reinforce cultural continuity and the intergenerational transmission of values (Hutton, 1921).

The method of construction also mirrors this spiritual and cultural framework. The careful selection of local materials, such as bamboo, timber, and thatch, showcases ecological sensitivity while holding symbolic meaning often tied to purification, fertility, and protection (Mills, 1922). These materials also reflect the Naga people's understanding of their environment, where their homes become extensions of their cultural worldview. Interior arrangements frequently follow a hierarchical order, with spaces reserved for

elders, men, or women, based on age and gender roles, subtly enforcing social order within the domestic setting (Hutton, 1921). These arrangements not only promote harmony but also express societal structures that have persisted through generations (Waterson, 1990).

Additionally, adaptability is a defining characteristic of Naga domestic architecture. The design of homes accommodates multi-generational families, with flexible layouts that can evolve as the household grows or as needs shift due to environmental challenges such as monsoons or landslides (Waterson, 1990). The use of movable partitions or modular sleeping platforms reflects a pragmatic approach to space management, allowing families to adjust their living environment without compromising cultural principles or disrupting the household's social cohesion (Mills, 1922). This flexibility ensures the sustainability of domestic life in the face of shifting needs and external factors.

More than just physical structures, Naga homes embody the dynamic interplay between function and meaning. They are not merely shelters but living expressions of identity, belief systems, and societal values. As such, Naga architecture serves as a vital medium through which culture is preserved, negotiated, and reinterpreted across generations. The resilience of these architectural forms—continuing to adapt while preserving tradition—underscores their role in shaping and sustaining Naga heritage, both in rural settings and in the context of modernity (Waterson, 1990).

4.25. Ventilation and light:

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4.26. Customization:

While the basic structural layout of Naga houses follows a consistent pattern, customization plays a crucial role in adapting spaces to meet the evolving needs of households. The domestic architecture of the Nagas is characterized by flexible spatial organization, allowing for modifications based on household dynamics, cultural practices, and environmental considerations (Waterson, 1990). The arrangement of platforms, compartments, and additional elements within the home is highly adaptable, providing a balance between tradition and personalized living.

One of the key ways in which Naga homes are customized is through modular and multifunctional design. Traditional houses are often constructed using a framework that enables reconfiguration, ensuring that spaces can be adjusted as the family grows or as their requirements change (Rapoport, 1969). Rooms and sections of the house are designed with open or semi-open layouts, making it easy to convert living areas into communal spaces for ceremonies, social gatherings, or even workspaces, depending on the occasion (Waterson, 1990).

Another essential aspect of customization is the incorporation of cultural symbols and motifs into architectural elements. Carvings, engravings, and painted designs on wooden beams, walls, and pillars are commonly found in Naga homes, each carrying specific meanings related to the owner's lineage, social status, and tribal affiliation

(Rapoport, 1969). These personalized design elements ensure that each house remains a unique expression of cultural identity while adhering to broader community architectural norms.

Furthermore, Naga domestic architecture demonstrates adaptive reuse of materials, a practice deeply rooted in sustainability. Homes are frequently modified using locally sourced or recycled materials, allowing for economic efficiency and customization without compromising structural integrity (Rapoport, 1969). For instance, older wooden planks from dismantled houses are often repurposed in new constructions, or bamboo components are reshaped to fit modern needs while retaining their traditional aesthetic and functional appeal (Waterson, 1990).

The hierarchical organization of space also allows for dynamic customization. Within the home, areas are strategically divided into public and private zones, ensuring a smooth flow between communal and intimate spaces. Public areas are typically larger and serve as gathering spaces for family members and visitors, while private sections accommodate sleeping quarters, storage areas, or ritualistic spaces, reinforcing the social structure within the household (Waterson, 1990). The ability to rearrange these areas based on gender, age, or social role makes each home uniquely suited to the needs of its occupants.

Moreover, Naga houses integrate natural elements such as verandahs, courtyards, and gardens, which offer additional opportunities for customization. These outdoor spaces can be modified to serve as gardens for medicinal plants, communal gathering spaces, or even places for storytelling and cultural practices (Waterson, 1990). The inclusion of such natural extensions enhances the livability of homes while ensuring a connection to the surrounding landscape.

Through flexible design, cultural expression, sustainable material use, spatial hierarchy, and integration with nature, Naga domestic architecture reflects the deep relationship between built environments and human adaptability. These customization methods not only support individual household needs but also reinforce communal

identity, sustainability, and continuity of traditions in the face of evolving social and environmental challenges (Rapoport, 1969).

4.27. Social interactions:

Naga domestic architecture serves as a profound reflection of the community's social structure, cultural values, and environmental adaptations. The spatial organization within traditional Naga homes is meticulously designed to foster communal living, facilitate social interactions, and accommodate multifunctional uses, all while respecting individual privacy and cultural practices (Fürer-Haimendorf, 1939).

Central to Naga architecture is the emphasis on communal areas that promote social cohesion. Traditional Naga houses often feature open layouts with minimal internal partitions, encouraging interaction among family members and guests. Verandahs and courtyards are common extensions of these homes, serving as additional spaces for socializing, relaxation, and hosting communal activities. These design elements reflect the Naga people's communal lifestyle and their emphasis on collective living (Mills, 1926; Fürer-Haimendorf, 1939).

The internal arrangement of spaces within Naga homes mirrors social hierarchy and familial relationships. Specific areas are designated for various family members, ensuring both privacy and interconnectedness. For instance, in Chakhesang Naga dwellings, the interior is traditionally divided into sections such as the *Paphelu* (front room for rice pounding), *Buke* (granary) *Kezhi/Kekhro zübo* (room for unmarried boys or girls), *Pfüzu – zübo* (parents' room), *Lekhake* (kitchen) *Hazhi - bu* (liquor storage room, and *Dzükhrukhe/Mezüke* (bath room or urinal shed). This delineation of space underscores the functional and social dynamics within the household³⁰.

Morungs, or communal dormitories, hold significant cultural importance in Naga society. Traditionally used to accommodate unmarried men and boys, these structures served as centers for imparting cultural education, transmitting traditional knowledge, and conducting initiation ceremonies (Hutton, 1921; Mills, 1926). Adorned with intricate carvings and symbolic motifs, *morungs* also functioned as repositories of tribal art,

standing as embodiments of community identity and pride (Fürer-Haimendorf, 1939). The architectural design and social function of *morungs* reflect the values of discipline, solidarity, and continuity that are central to Naga communal life (Lotha, 2007).

Furthermore, Naga architecture demonstrates a harmonious relationship with the environment through the use of locally sourced materials like bamboo, wood, and thatch. Houses are often elevated on stilts to provide protection from floods, pests, and wild animals, while also offering ventilation and space for storage beneath (Hutton, 1921; Varuni, 2024). The steeply pitched thatched roofs effectively channel rainwater away from the structure, ensuring durability and comfort during monsoons. These features highlight the Naga people's intimate knowledge of their landscape and their commitment to sustainable, climate-responsive building practices (Varuni, 2024; Fürer-Haimendorf, 1939).

The traditional homes of the Nagas are more than just functional dwellings – they represent a deep interconnection between cultural values, social dynamics, and environmental awareness. Every aspect of their design, from structure to spatial layout, reflects a lifestyle attuned to both the natural world and the community's collective identity. These homes are crafted with a blend of practicality and symbolism, echoing long-standing traditions and ecological intelligence.

Construction practices are rooted in generations of knowledge and are executed with precision and care. The selection and preparation of building materials such as bamboo and timber involve specific methods that enhance durability and align with seasonal rhythms. These materials are locally sourced, reinforcing a sustainable way of building that maintains harmony with the environment.

Inside the home, spaces are thoughtfully organized to support both shared activities and individual needs. The hearth often serves as the center of the household, providing warmth and acting as a place of gathering. Functional areas are arranged with intention – some for rest, others for work or storage – divided subtly by partitions or fabric screens. This internal arrangement supports both privacy and openness, reflecting the balance between personal space and communal living.

Flexibility is a key feature of these traditional homes. Many elements serve multiple functions, allowing the house to adapt to the changing needs of its residents over time. This adaptability ensures that the architecture remains relevant, even as lifestyles evolve, while still preserving its cultural significance.

Spiritual practices are also woven into the architecture. Specific parts of the home are reserved for rituals and traditional ceremonies, reflecting a worldview in which the spiritual and physical coexist. These sacred areas emphasize the importance of tradition and continuity within the home.

Overall, Naga domestic architecture illustrates a comprehensive approach to building that combines utility, cultural meaning, and environmental consciousness. The design of these homes supports a way of life that values tradition, community, and resilience. Their continued use and relevance today demonstrate the enduring strength of vernacular design deeply rooted in cultural heritage.

Endnotes:

²⁶. Interview with Chülonyi Lasuh, 88 years, Elder and Feast Donor, Mesulumi village, Dated: 07/02/2020.

²⁷. Interview with Guru Sangyunsang Pongen; 78 years, GB, & Aotongpang Jamir; 82 years, Elder, Ungma village, Dated: 11/10/2022. Veswüzo Phesao; 65 years, Exhibition Officer, NEZCC, Naga United village, Chümoukedima, Dated: 09/04/2022 & Neitelo Rhakho, 58 years, Village Council Chairman, Sümi village, Dated: 28/11/2017.

²⁸. Interview with Wenyilo Venuh, 54 years, Ex. VCC; Kekhwechülo Thele, 60 years, Goanbura & Feast Donor, Mesulumi village, Dated: 08/06/2024.

²⁹. & ³⁰. Interview with Chülonyi Lasuh, 85 years, Elder & Feast Donor; Kekhwechülo Thele 54 years, Goanbura & Feast Donor; Kezhiehli Venuh, 65 years, Head Goanbura (Head GB); Mehmvü Lachü, 63 years, Head priest & Wenyilo Venuh, 47 years, VCC, Mesulumi village, Dated: 06 – 08/04/2017.



Plate 62 & 63: Raised platform and stilts as the foundation, which helps protect the home from dampness and pests. (Ungma village and Changtongya Old).



Plate 64: Bamboo is also integrated as a skeletal framework between timber and thatch.



Plate 65 & 66: Common roofing used such as *Trachycarpus fortunei* (Arecaceae) and *Imperata cylindrica* (thatch grass).



Plate 67:



Plate 68:



Plate 69:



Plate 70:



Plate 71:



Plate 72:



Plate 73:



Plate 74:



Plate 75:

Plates 67 -75: Intricate split woven bamboo design in variations to create sturdy frameworks for fencing, walls, floors, and roofing structures.



Plate 76: The traditional communal houses or *morungs*, prominently feature bamboo in their construction, thatch lashing techniques with intricate design at front roof. (Eastern Naga *morung*).



Plate 77 & 78: Bamboo's natural insulating properties contribute to passive thermal regulation and architectural innovation.



Plate 79: *Imperata cylindrica* (thatching grass) and bamboo are traditionally utilized to create roofs that are resilient against the heavy monsoon rains.



Plate 80: Lashing techniques that use natural fibers (Local name *buwu*), rattan strips, or vines to bind bamboo and timber components together.



Plate 81: Joinery techniques that eliminate the need for nails or metal fasteners.



Plate 82: Stones provide a solid base for the wooden or bamboo stilts that support the homes.



Plate 83: Community participation in traditional Naga house construction.

CHAPTER-5

Comparisons of Built Structures and their Symbolic Associations

5.1. Introduction:

To gain a deeper understanding of the cultural relevance and evolving meanings of traditional Naga dwellings, it is essential to compare them with other indigenous and vernacular architectural traditions. This comparative approach is particularly meaningful when examining communities that share similar ecological settings, socio-cultural practices, and symbolic worldviews (Oliver, 2006; Nabokov & Easton, 1989).

This Chapter builds on such insights by undertaking a comparative analysis of built structures and their symbolic associations, with a focus on how domestic architecture among the Nagas encapsulates both tangible and intangible cultural elements. By examining traditional house variations, spatial arrangements, and architectural motifs, it aims to reveal how meaning is embedded in material form. It further explores how these symbolic functions compare across various tribes in Nagaland and in relation to broader indigenous architectural traditions, offering a deeper understanding of the intersection between form, function, and cultural expressions.

It thus presents a comparison of Naga domestic architecture, juxtaposing it with examples from other indigenous communities in Northeast India, Southeast Asia, and tribal societies worldwide. The objective is to identify both commonalities and distinctions in symbolic interpretation, spatial arrangements, material choices, and the cultural significance embedded in residential architecture. Through this comparative lens, the analysis underscores how Naga domestic spaces not only reflect indigenous identity and heritage but also resonate with broader vernacular traditions that express shared human values through built forms (Oliver, 2006; Waterson, 1990).

Although scholarly research specifically addressing symbolic comparisons of Naga domestic architecture remains limited, existing literature explores symbolic

meanings within individual architectural elements. Traditional Naga homes utilize locally sourced materials selected for their practicality, resilience, and suitability to the region's climatic conditions. For instance, motifs such as the *mithun* head symbolize wealth and prosperity, while hornbill carvings represent valor and status (Hutton, 1921; Mills, 1922). These symbolic elements are integral to the architectural expression of cultural identity and social status within Naga society

Built structures, whether homes, religious buildings, or monumental landmarks, hold significant symbolic associations beyond their functional purposes. These symbolic associations are deeply ingrained in cultural, historical, and spiritual contexts, reflecting a community or civilization's values, beliefs, and aspirations (Eliade, 1959; Rapoport, 1969). A built structure often serves as a visual and symbolic gateway, setting the tone for the overall experience and conveying important messages (Alexander et al., 1977).

Nagaland is a land of unity in diversity among the tribes, and there are many cultural commonalities in festivals, religious beliefs, rituals, ceremonies, the orientation of traditional architecture, and other practices. In – built architectural structures and symbolic associations – particularly gates and entrances – were pivotal in the olden days. Gates and entrances often served as thresholds between different realms or spaces, symbolizing transitions from the mundane to the sacred, the public to the private, or the earthly to the divine (Eliade, 1959). In the context of traditional Naga architecture, elaborate gates evoked a sense of awe, reverence, and cultural importance, especially during the headhunting era when they also served defensive functions (Hutton, 1921; Mills, 1922).

The façade elements of a building, particularly architectural features such as decorative motifs, statues, columns, and carved wooden panels, carry symbolic meanings. These elements often represent historical events, cultural heroes, mythical beings, or fertility symbols linked to agricultural prosperity (Oliver, 1997; Rapoport, 1969). Facades also reflect the ideals of specific architectural styles or periods – where the choice of color and materials conveys further symbolic associations. For example, gold or metallic accents may indicate wealth, prowess, or divine favour, while natural materials such as

wood or stone symbolize permanence, harmony with nature, and indigenous craftsmanship (Alexander et al., 1977; Oliver, 1997).

Decorative motifs like carvings, mosaics, or stained wooden panels are rich in symbolism. They often portray religious stories, ceremonial traditions, or abstract designs that evoke emotional responses or convey moral and spiritual messages (Basso, 1996). The alignment and orientation of house structures also bear symbolic meaning. Religious buildings may be oriented in specific cardinal directions, and traditional Naga *morung* and living houses are often aligned eastward, in accordance with spiritual or cosmological beliefs (Rapoport, 1969; Eliade, 1959). Alignments with celestial events such as solstices or equinoxes further reinforce symbolic connections to time and the cosmos.

The integration of a structure into its landscape – through elements such as gardens, courtyards, central hearths, or water features – adds further layers of symbolism. These features represent tranquillity, harmony, social bonding, hospitality, festive life, and atonement with nature (Alexander et al., 1977; Rapoport, 1969). Finally, the urban placement of buildings and their spatial relationship to neighboring structures can reflect social organization, political hierarchies, or historic relationships within the community (Oliver, 1997; Basso, 1996).

5.2. Material choices:

The primary construction materials used in Naga traditional houses are bamboo, wood, thatch, stone slate, cane, and rattan which reflect not only environmental adaptation but also its symbolic meaning. Certain timbers are ritually chosen during its season, believed to possess protective spiritual qualities, while the carving designs of posts and beams in each community believe to involve ritual invocation of ancestral spirits. Similar practices can also be observed in the Dayak longhouses of Borneo (Waterson, 1990) and Zeliangrong houses in Manipur (Hodson, 1911), where sacred materials and ritual construction encode cultural memory into the physical house.

By comparing construction practices among the Naga people with those of other indigenous communities, it becomes evident that indigenous architectural knowledge

reflects a profound understanding of local ecological systems, integrated with cultural and spiritual consciousness. This dual knowledge system – where ecological awareness intersects with cultural symbolism – is a hallmark of many traditional societies, supporting the view that vernacular architecture encapsulates both environmental intelligence and cultural storytelling (Rapoport, 1969; Oliver, 1997).

This research investigates the symbolic and functional meanings associated with various materials used in Naga domestic architecture. Natural materials such as wood, thatch, stone slabs, clay, and palm leaves locally known as *tokupatta* (*Trachycarpus fortunei*) are commonly utilized, each carrying specific ecological and cultural significance. For instance, the use of wood is often associated with strength, tradition, and craftsmanship, while thatch and palm leaves symbolize resourcefulness and harmony with nature (Hutton, 1921; Mills, 1922; Waterson, 1990).

While traditional materials continue to play a central role in many rural and semi – urban Naga homes, there has been an increasing incorporation of modern construction materials – such as concrete, steel, and glass – particularly in urban centers. This blending of traditional and contemporary elements gives rise to a distinctive architectural style in the region, reflecting evolving socio – economic conditions and aesthetic preferences (Rapoport, 1969; Alexander et al., 1977). Some of the most common material choices today reveal a balance between maintaining cultural identity and adapting to modern needs.

a). *Bamboo*:

Bamboo constitutes a fundamental element in the economic and socio-cultural landscape of bamboo-growing regions in India, particularly across the northeastern states. In Nagaland, it assumes a pivotal role in the daily lives and cultural practices of indigenous communities, serving as a crucial material for construction, artisanal crafts, and traditional rituals. Deeply embedded in the region's heritage, bamboo significantly contributes to social customs, household economies, and sustainable resource use (Nath et al., 2015). Its widespread presence in natural forests, alongside active cultivation in home gardens,

village groves, and private plantations, reflects its ecological versatility and enduring accessibility (Borah et al., 2013).

Its versatility renders bamboo an indispensable resource for Naga society. It is extensively used in construction, particularly in the building of homes, granaries, fences, and community structures. Traditional Naga houses often feature bamboo in their framework, walls, flooring, and roofing, offering both structural strength and climate adaptability (Hutton, 1921). The flexibility, lightness, and durability of bamboo make it especially suitable for the hilly terrain of Nagaland, where materials need to be both strong and transportable. Additionally, bamboo serves as a principal material in crafting household and agricultural tools, such as winnowing trays, baskets, fishing traps, and harvesting implements, which are vital to subsistence lifestyles in rural areas.

In traditional Naga domestic architecture, bamboo plays a multifaceted role that extends beyond its utilitarian function. It is integral to both the structural and aesthetic composition of the home. Indigenous artistic bamboo panels and carved posts are not merely decorative; they are imbued with cultural significance, often serving as markers of social status, clan affiliation, and local craftsmanship. Functionally, bamboo is employed in key domestic zones—notably in the hearth area, cooking platforms, handicrafts such as granary baskets, carrying baskets, mats, and elevated storage lofts—demonstrating its adaptability and efficiency. Moreover, architectural features such as bamboo ceilings, stilt platforms floors, woven walls, and partitions are utilized for their insulating properties, contributing to the thermal comfort of households across Nagaland's fluctuating climatic conditions. This interplay of form and function underscores the material's symbolic and environmental relevance within Naga vernacular building traditions (*see plate 84-89*).

Furthermore, bamboo is a sustainable material with a rapid growth cycle, and the Naga people have inherited indigenous knowledge systems concerning its cultivation, management, and harvesting. These practices promote environmental conservation and ensure the long-term availability of bamboo resources (Singh et al., 2010). Such ecological consciousness is deeply tied to Naga cosmology and land-use ethics, where

natural resources are not merely exploited but are respected and maintained for future generations.

Thus, bamboo is not merely a building material in Nagaland; it is a cultural artefact, a medium of artistic expression, and a sustainable resource that supports both the tangible and intangible heritage of Naga communities.

Bamboo is widely used in Naga architecture due to its abundance, flexibility, and strength. It is often used for constructing walls, floors, roofs, and even furniture. Bamboo is known for its resilience and ability to withstand harsh weather conditions. The main genera and most common used among the bamboo genera in Nagaland are *Cephalostachym* and *Dendrocalamus* and the main species are *B. khasiana*, *B. tulda*, *D. hamiltonii*, *Dendrocalamus patellaris*, *D. hookeri*, *D. sikkimensis*, *Cephalostachym capitatum*, *C. latifolium*, *Neohouzeana dullooa*. According to the research survey of bamboo in Nagaland, it has been recorded that there are Genera bamboo (11) and Species of bamboo (23) (Hazarika et al., 2008).

b). *Wood*:

Wood plays a crucial role in the domestic architecture of the Naga people. Locally available hardwoods such as teak (*Tectona grandis*), oak (*Quercus spp.*), and sal (*Shorea robusta*) are commonly used for essential structural elements like beams, columns, doors, windows, and interior paneling. High-quality timber from species such as *Toona ciliata* (commonly known as Indian mahogany or toon, and locally as *Etsetshü*) and *Chukrasia tabularis* (known as Indian mahogany or Chittagong wood, locally referred to as *Kedimene*) are traditionally reserved for crafting symbolic architectural features like gable horns. These horns often shaped to resemble those of a buffalo or mithuns – symbols of strength and prosperity – are skillfully carved from the root or reverse end of the timber, enabling artisans to achieve the natural curvature required for the form. Another notable species is *Choerospondias axillaris* (locally known as *Kulachetshu*, also called Nepali hog plum or *Lapsi*), native to the Himalayas and parts of Southeast Asia, including Nagaland. Its timber is used for essential structural elements such as joint posts and house gable

horns, further emphasizing its significance in traditional Naga architecture. Other durable woods, including *Albizia procera* (koroï, locally known as *Chütsü mezü*) and *Phoebe goalparensis* (commonly called bonsum, locally known as *Mewitshü*), are used in the construction of key household items such as pounding tables, mother posts, beds, barrels, and seats, valued for their durability and strength. *Sürhumdsü* (*Caryota urens* L.), commonly known as the fishtail palm, is widely found across Nagaland. Among the Konyak Nagas, various parts of the plant are traditionally used in domestic architecture – particularly for wall construction and crafting simple furniture – owing to its fibrous texture and sturdy leaf stalks. Additionally, the trunk pith is consumed as sago, and the fibers are utilized for making brushes and brooms³¹ (see plate 90-95).

Abundant forest cover in the Naga Hills provides a sustainable source of timber for construction. Wood is not only adaptable to the local terrain but also offers thermal comfort by insulating homes during both cold winters and humid summers. Its ease of use allows for artistic and functional expression in various structural elements, including doors, plank roofs, village gates, decorative walls, and symbolic components like gable horns (Alexander et al., 1977). Naga architecture demonstrates remarkable adaptability to natural challenges, including seismic activity, through the flexible use of wooden frameworks.

The use of wood in traditional Naga homes carries deep spiritual and cultural significance. Trees are often considered sacred, and incorporating wood into architecture is believed to bring blessings from ancestral spirits and attract prosperity to the household (Eliade, 1959). These structures serve not only as functional shelters but also as symbolic manifestations of Naga identity. Distinctive wooden features help define village aesthetics and communicate cultural heritage to both insiders and outsiders.

Moreover, building a traditional Naga house is a communal activity. While the construction of an *Angh* (chieftain) house may involve the entire village, individual homes are typically built with voluntary labor contributions from relatives and neighbors. This cooperative tradition reinforces community solidarity and mutual support, reflecting the societal values of unity and collective responsibility (Basso, 1996; Oliver, 1997).

Wooden houses, when maintained properly, can endure for generations. Their longevity and resilience are a testament to the craftsmanship and ecological knowledge embedded in Naga building traditions. Furthermore, the harmony between these wooden structures and the surrounding environment underscores the Naga people's belief in living sustainably and in close connection with nature. In this context, the use of wood goes beyond practicality—embodying cultural identity, spiritual continuity, and a sustainable way of life (Rapoport, 1969). One of the best examples can be seen in the village of Zhavame in Phek District, where a priest's house remains partially constructed with wooden planks—a surviving testament to the importance of wood in traditional Naga architecture. (see plate 96).

c). *Thatch*:

Thatch (*Imeperata cylindrical*/commonly known as congong grass), once cut and thoroughly dried, are skillfully crafted and used for house roofing and other household elements, valued for their durability and ecological suitability in house construction. Thatch or palm leaves, plays an essential role in the roofing of traditional Naga homes. Its natural insulating properties help regulate indoor temperatures, keeping interiors cool during the hot summers and warm in the cold winters. The steeply sloped roofs not only facilitate efficient rainwater drainage but also provide resilience during heavy storms, making them well-suited to the region's climatic conditions (Plate 97).

Among various Naga tribes such as the Angami, Ao, Chakhesang, Lotha, Pochury, Rengma, and Zeliang, thatch is widely available due to the abundance of natural vegetation in the traditional Naga territories. This accessibility makes it a sustainable and cost-effective building material.

Beyond functionality, thatched roofs also carry deep cultural and symbolic significance. Their natural appearance integrates harmoniously with the environment and enhances the visual identity of Naga villages, setting them apart from other architectural forms. The use of organic materials like thatch is often linked to traditional beliefs, where natural elements are thought to invite blessings from ancestors and ensure the household's

well-being and prosperity. Moreover, the construction of thatched roofs typically involves collective community participation, reinforcing social bonds and the cultural value placed on unity and cooperation. As Rapoport (1969) emphasizes, vernacular architecture is not merely shaped by climate or materials but is deeply embedded in the cultural patterns and social values of a community, making such features both symbolically and functionally significant.

d). *Stone slate:*

In the eastern regions of Nagaland, particularly Kiphire and Tuensang districts, stone slates are widely used in traditional Naga architecture due to their local availability and exceptional durability. These slates serve both functional and symbolic purposes in the construction of homes and supported granaries posts. In roofing, stone slates offer high resistance to harsh weather conditions such as heavy rainfall, strong winds, and intense sun exposure. Additionally, they provide excellent thermal insulation and require minimal maintenance, making them a practical and sustainable choice for long-term habitation.

Beyond their functional benefits, stone slates hold profound cultural and symbolic significance in Naga society. Their heavy and solid nature is seen as a representation of strength, endurance, and stability—qualities that are deeply valued and often linked to the resilience and prosperity of the household. In granaries, stone caps placed atop wooden posts are strategically used to protect stored grains from rodent infestations and pests, reflecting an indigenous knowledge system that harmonizes ecological awareness with architectural practices. Additionally, stone slates are naturally fire-resistant, providing extra protection in a region where clustered wooden settlements are particularly susceptible to fire outbreaks (Plate 98).

Such utilitarian and symbolic uses of stone are deeply embedded in the megalithic tradition of the Nagas. As Jamir (2004) observes, megalithic stone forms across Naga communities not only serve practical and commemorative roles, but also articulate social memory and collective identity through their enduring presence in the built environment.

The use of stone slates is also linked to social identity and prestige. According to oral traditions and community narratives, houses roofed with stone slates are often seen as symbols of status and wealth. The construction process requires considerable labor and resources, indicating the homeowner's capacity to mobilize collective effort and investment – an important marker of social standing within traditional Naga villages. These structures not only reflect vernacular craftsmanship but also embody a community's historical continuity, spiritual values, and harmonious relationship with the natural environment.

e). *Tokupatta/Trachycarpus fortunei* (Arecaceae):

In the traditional architecture of Nagaland, particularly within the Konyak tribe of the Mon district, palm leaves – locally known as *tokupatta* (*Trachycarpus fortunei*, Arecaceae) – are commonly used as roofing material. This practice is also evident in some regions of the Mokokchung district, home to the Ao tribe and in some other tribes of the eastern Nagas. The preference for palm leaves can be attributed to their lightweight nature, renewability, and cost-effectiveness. In areas where palm trees are abundant, the construction, repair, and replacement of roofs made from palm leaves are simple and cost-effective, allowing for quick maintenance using readily available local materials. Additionally, these roofs provide excellent natural insulation and blend harmoniously with the habitations (Plate 99).

From a functional perspective, palm leaves provide durability, flexibility, and natural insulation, protecting structures from the intense rainfall, strong winds, and direct sunlight typical of the Naga Hills. The leaves are skilfully woven or arranged in overlapping patterns to create robust roofing layers, a technique passed down through generations of indigenous knowledge (Sridharan et al., 2021).

Visually, palm leaf roofs contribute to the unique identity of Naga dwellings. Their natural texture and color enhance the aesthetic value and distinguish them from other tribal and regional architectural styles. In both Konyak and Ao areas, the thatching process involves the careful drying and cleaning of palm leaves before they are affixed to bamboo

or wooden frames. Multiple layers are often applied to improve insulation and durability (Sridharan et al., 2021).

Although traditional palm-leaf roofing remains common in rural areas, its use has gradually declined in urban settings due to urbanization and the adoption of modern building materials. Nevertheless, palm leaves are still used for decorative and symbolic purposes during cultural events, the reconstruction of traditional huts, and heritage tourism projects, thus preserving a connection to ancestral architectural practices (Arora & Choudhary, 2022).

Ultimately, the use of palm leaves in Naga domestic architecture reflects a harmonious blend of environmental adaptation, practicality, and cultural significance. It serves as a testament to the deep ecological wisdom of the Naga people and their efforts to preserve and transmit traditional knowledge systems (Sridharan et al., 2021).

5.3. Spatial arrangements:

The spatial organization of a Naga house follows a well-defined cultural logic, with distinct functional, ritual, and social spaces. Typically, Naga houses feature a prominent front porch, a central hearth, separate sleeping areas, and designated storage zones for tools and harvest. This internal division reflects social hierarchies, gender roles, and cultural customs (Hutton, 1921).

Comparative examples from Malay traditional houses and Indonesian longhouses (Waterson, 1990) show similar spatial segmentation, where public and private areas are carefully separated, and ritual significance is attached to specific spaces such as the hearth or ceremonial platforms. Among the Nagas, the hearth is not only a cooking space but also a symbolic center for ancestral worship, hospitality, and communal storytelling (Nshoga, 2014). This reflects a broader indigenous worldview in which domestic space is sacralised, and built forms serve spiritual as well as practical functions.

The layout and spatial organization of traditional Naga houses reflect deep symbolic associations with cultural, social, and spiritual practices. Across various Naga tribes, these architectural arrangements convey a nuanced understanding of social

hierarchies, gender roles, and religious beliefs. For instance, the positioning of sacred corners or the segregation of spaces for men and women serves as a spatial manifestation of cultural norms and taboos (Sridharan et al., 2021; Hutton, 1921). These spatial demarcations not only fulfil functional needs but also express identity, privacy, and ritual observance.

A comprehensive study of traditional Naga floor plans reveals that space is systematically allocated for specific activities such as cooking, sleeping, storage, and religious rites. The hearth, often centrally placed, functions as a locus of family life, hospitality, and ancestral reverence (Nshoga, 2014). Such layout patterns are comparable to spatial divisions observed in other Southeast Asian vernacular traditions, such as Malay and Indonesian houses, where domestic structures are carefully designed to distinguish between public and private realms and to host rituals of social and spiritual importance (Waterson, 1990). Variations in spatial layouts among Naga tribes reflect differences in environmental adaptations, family structures, and socio-political arrangements. For example, among the Ao Nagas, the *Arju* (*Morung*) serves as a designated space for young men to undergo socialization, education in warfare, and cultural rites. The placement of the *morung* within the village underscores the importance of clan-based systems and oral traditions in shaping the spatial organization of these communities (Mills, 1926).

The symbolic placement of altars, ritual items, and ceremonial areas within the home underlines the house's role not merely as a shelter but as a sacred microcosm (Sridharan et al., 2021).

The adaptability of these spatial arrangements reflects the community's response to evolving socio-economic conditions and lifestyle changes. As traditional values intersect with modern influences, house designs are modified to accommodate contemporary needs while retaining core symbolic and cultural features. Studying these dynamic yet deep-rooted practices provides valuable insights into technological adaptations, environmental resilience, and inter-tribal influences within Naga society, while also revealing the diversity and complexity of Naga traditional architecture (Waterson, 1990).

5.4. Orientation and cosmological beliefs:

Traditional Naga houses are carefully oriented, often with their entrances facing east, a direction that symbolizes renewal, prosperity, and divine blessings from the rising sun. This eastward orientation is not a matter of convenience but a ritual and cosmological imperative, rooted in the belief that the first light of dawn brings purification, fertility, and spiritual protection to the household (Elwin, 1961). The orientation reflects an understanding of the house as a cosmic vessel, harmonizing the human world with natural forces and ancestral spirits.

On the other hand, basing on field observations conducted in several Naga villages, the orientation of house entrances—often facing north or west—appears to be guided more by practical and topographical considerations than by any standardized tradition though commonly faced eastwards. The direction in which a house opens is frequently adapted to the natural slope of the terrain, prevailing wind patterns, and the path of the sun rays. In settlements situated on east-facing hillsides, entrances are commonly oriented westward, offering shelter from the cold morning air and minimizing the impact of strong monsoon winds. In other locations, a north-facing entrance may be chosen for its alignment with internal village pathways or central spaces, facilitating accessibility and visual coherence within the settlement. These patterns suggest that the orientation of Naga houses is not arbitrary but reflects a context-specific response to environmental conditions, underscoring the builders' deep familiarity with the land and their emphasis on functional harmony between dwelling and landscape.

The importance of orientation is further emphasized through the central post (Y-post), a ritual axis that vertically connects the underworld (ancestors), the human realm (inhabitants), and the sky world (spirits and deities). This conceptualization aligns closely with the axis mundi found in other indigenous traditions, where the central post acts as the spiritual spine of the house, ensuring the household's cosmic balance and ritual purity (Hutton, 1921; Eliade, 1959). Such spatial cosmology is not unique to the Nagas; among the Konyak Nagas, ritual specialists or village elders often consult divination techniques

before determining the orientation of a new house, reinforcing the belief that spatial positioning directly influences prosperity, fertility, and spiritual safety (Elwin, 1961).

Similar cosmological and directional symbolism can be observed in other vernacular traditions, such as traditional Malay houses, where orientation serves both practical functions (maximizing light, warmth, and airflow) and symbolic purposes (aligning the household with beneficial cosmic forces) (Waterson, 1990). This shared emphasis on cosmological orientation underscores that indigenous domestic architecture often functions as a sacred microcosm, encoding cultural knowledge, spiritual beliefs, and ecological intelligence into its physical form.

The front façade of a Naga house also plays a critical ritual role, acting as a symbolic boundary between the profane external world and the sacred interior space. This façade often becomes a ritual stage, where ancestral carvings, headhunting trophies, and protective symbols are prominently displayed to communicate the household's spiritual authority, ritual accomplishments, and clan lineage. Such façade symbolism finds clear parallels in Southeast Asian ceremonial houses, where painted gables, threshold carvings, and guardian figures similarly convey mythological stories, historical achievements, and spiritual protections (Waterson, 1990). In this sense, the orientation, spatial symbolism, and visual display transform the Naga house into a cultural text, encoding myth, identity, cosmology, and ritual power into its very structure.

Through these architectural practices, Naga houses become more than mere shelters – they are cosmological landscapes, where the living, the ancestors, and the spirit world converge in carefully orchestrated spatial and symbolic harmony. This integration of cosmological beliefs into domestic design reinforces the inseparable link between architecture, cultural identity, and spiritual continuity within Naga society.

5.5. Symbolism and ritual functions:

Naga domestic architecture embodies more than functional shelter; it serves as a sacred microcosm, symbolizing the connection between humans, ancestors, spirits, and the natural world. Every structural element carries deep symbolic meaning, transforming the

house into a ritual object that encodes social status, clan identity, and spiritual beliefs (Elwin, 1961). The front porch, often elaborately carved, displays the owner's status, clan affiliations, and ritual purity. Meanwhile, the central Y-post, often regarded as a guardian post, acts as the axis mundi, a sacred connection between the underworld, the human realm, and the spirit world (Eliade, 1959; Waterson, 1990). This symbolism is not unique to the Nagas but aligns with Austroasiatic and Austronesian architectural traditions, where central pillars often serve cosmological and ancestral functions (Waterson, 1990).

Ritual and ceremonial spaces are integral to Naga houses, further emphasizing the interweaving of domesticity and spirituality. Specific zones within the house are dedicated to ancestral worship, rites of passage, and healing practices, with spatial variations reflecting tribal-specific customs among the Ao, Chakhesang, Konyak, and Sangtam tribes. Outside the domestic sphere, *Morungs* – youth dormitories – serve as communal hubs for ritual education, initiation ceremonies, and the transmission of tribal knowledge. These ritual spaces extend to open areas in the village designated for agricultural rituals, fertility rites, and community feasts, all of which emphasize collective identity through shared ritual practice (Waterson, 1990).

Traditional Naga domestic architecture is profoundly imbued with symbolic elements that articulate layers of social, spiritual, and cosmological meaning. Prominently displayed carved *mithun* and buffalo horns on wooden panels and gable ends function as potent emblems of wealth, ritual accomplishment, and elevated social status, associated with the hosting of feasts of merit (Hutton, 1921; Mills, 1922). Bamboo spikes affixed to rooftops serve both as spiritual defences against malevolent forces and as visible remnants of the household's martial legacy. The exhibition of animal and human skulls further signifies hunting prowess, ritual authority, and the valorization of warrior status within the community (Hutton, 1921). Phallic representations, discreetly integrated into architectural features, symbolize fertility and affirm the community's profound relationship with the fertility of the land. Roofs with steep pitches, while functionally suited to the region's heavy monsoonal rainfall; also embody protective symbolism,

likened to shields that safeguard the household from natural and supernatural threats (Waterson, 1990).

The central hearth occupies a sacred position within the domestic space, establishing a vital connection between the living, ancestral spirits, and tutelary deities of the land, thereby reinforcing familial unity and cultural continuity (Rapoport, 1969; Waterson, 1990). Carvings adorning entrances act as ritualized barriers, warding off hostile forces and marking the threshold between sacred domesticity and the external world. Monoliths erected in association with feasts of merit stand as monumental declarations of wealth, social prestige, and ritual fulfilment (Mills, 1922; Hutton, 1921). Y-shaped posts positioned within domestic interiors further articulate themes of prosperity and ritual success. The great log drums, distinctive features of many Naga villages, symbolize communal identity, collective strength, and spiritual guardianship, while serving practical functions in communication during warfare and ceremonial occasions (Mills, 1922). Practical furnishings such as the pounding table are deeply embedded with values of self-sufficiency, skilled craftsmanship, and economic vitality. Likewise, elaborately carved wooden beds and seats are tangible expressions of artistic sophistication, hospitality, and social honor. Carvings of animals and celestial motifs — including representations of the sun, moon, and stars — on the principal wooden pillars, particularly at the front porch, articulate beliefs in a divinely ordered cosmos, ancestral oversight, seasonal rhythms, and the cyclical fertility of land and people (Waterson, 1990). Through these manifold symbolic articulations, Naga houses emerge not merely as utilitarian structures but as living embodiments of cultural memory, ritual practice, and social reproduction.

Additionally, many Naga villages preserve sacred groves, regarded as spiritual sanctuaries where offerings and prayers strengthen the connection between humans and the spirit world. The symbolism of transition and protection also appears in village gateways, adorned with carvings of human heads, animals, and guardian spirits that mark the boundary between the profane outside and sacred village interior (Elwin, 1961).

Comparative studies further reveal that Naga domestic and ritual architecture shares fundamental characteristics with broader Indigenous Southeast Asian traditions. In Austroasiatic and Austronesian cultures, the house itself functions as a ritual cosmos, where central posts serve as spiritual anchors, carved façades express mythology and status, and spatial zoning separates the pure from the impure (Waterson, 1990). By encoding myth, memory, and ritual into architecture, Naga houses become living cultural archives, ensuring that ancestral wisdom, collective identity, and spiritual beliefs are preserved for future generations. This architectural continuity, even amidst modernization, demonstrates the deep-rooted belief that the house is not merely a shelter but a sacred vessel, embodying the cosmic order within domestic space (Elwin, 1961; Waterson, 1990).

5.6. Wood carvings and motifs:

The spatial organization of Naga houses reflects a well-defined cultural logic, delineating functional, ritual, and social spaces. Typically, these structures feature a prominent front porch, central hearth, separate sleeping areas, and designated storage zones for tools and harvests. This internal division mirrors social hierarchies, gender roles, and cultural customs within Naga communities (Jamir & Lanunungsang, 2005).

Comparative studies reveal similar spatial segmentation in traditional dwellings of other cultures. Similarly, Indonesian longhouses maintain distinct divisions between communal and private spaces, underscoring the ritual significance of areas like the hearth or ceremonial platforms (Waterson, 1990). Among the Nagas, the hearth transcends its utilitarian purpose, serving as a symbolic center for ancestral worship, hospitality, and communal storytelling (Nshoga, 2014). This sacralization of domestic space reflects a broader indigenous worldview where built forms fulfill both spiritual and practical functions.

The layout and spatial arrangements of Naga houses reveal symbolic associations with traditional social and cultural practices. For example, the placement of a sacred corner or the segregation of spaces for men and women offers insights into gender roles

and religious beliefs within different Naga tribes. Analyzing the allocation of spaces for living, sleeping, cooking, storage, and religious activities across various tribes and regions sheds light on family structures, social hierarchies, and environmental adaptations (Jamir & Lanunungsang, 2005). The segregation of spaces for men and women, or the placement of ritual areas in specific locations, reflects cultural norms, religious beliefs, and notions of privacy and sacredness.

Naga domestic architecture often includes specific spaces dedicated to rituals and ceremonies. Examining the placement of altars, sacred objects, or ceremonial areas within the house elucidates the religious beliefs, mythologies, and social customs associated with these rituals (Nshoga, 2014). The adaptability and functional considerations present in Naga domestic architecture reveal how spatial arrangements have evolved to accommodate changing lifestyles or practical needs, providing insights into technological innovations, socio-economic shifts, and environmental factors influencing the design and layout of Naga houses.

Studying the spatial arrangements in Naga houses also offers a deeper understanding of cross-cultural influences among tribes, highlighting the cultural values, social dynamics, and functional considerations embedded in these structures. Such investigations contribute to the preservation and documentation of Naga architectural traditions and illuminate the cultural diversity and adaptations within Naga tribes.

5.7. Ecological adaptation to the natural environment:

According to oral tradition, Naga domestic architecture solely adapts to the local geographic and climatic conditions. This could involve analyzing the symbolism behind raised platforms, use of available local materials, and design elements that establish a harmonious relationship with nature. The natural environment in Naga domestic architecture reveals a strong connection between the built structures and the surrounding landscape. The Naga tribes, residing in the northeastern region of India, have developed an architectural tradition that seamlessly blends with the natural environment, both in practicality and symbolic associations.

Naga traditional dwellings are constructed using locally sourced materials such as wood, bamboo, stone, and thatch. These materials are abundant in the region, which makes them both environmentally sustainable and easily accessible for construction (Hutton, 1921). The integration of these natural elements into the architecture, along with the careful placement of homes in the landscape, reflects the Naga people's profound respect for nature (Mills, 1922).

The construction of Naga houses is tailored to the specific climate of the region. Steeply pitched roofs, often made of thatch or stone slates, are designed to channel heavy rainfall away, while elevated foundations on stilts prevent flooding during the monsoon season (Jamir & Lanunungsang, 2005). Many houses feature raised floors, enhancing airflow and helping to keep the interiors cool during hotter months. The thoughtful design of the roof helps maintain comfortable indoor temperatures year-round, even without traditional windows. Given the seismic nature of the region, Naga houses are built with techniques that enhance their resistance to earthquakes (Hutton, 1921). These building methods reflect the community's ancestral wisdom and their ability to create dwellings that are sustainable and responsive to their environment. Additionally, the use of natural materials in house construction holds spiritual significance for the Naga, as it is believed to invite blessings from ancestral spirits and deities, ensuring protection and prosperity for the household (Mills, 1922).

Naga domestic architecture not only serves practical needs but also acts as a symbol of cultural identity, marked by unique design principles that integrate with the environment. This approach underscores a broader commitment to living sustainably and responsibly managing natural resources, ensuring that these benefits are passed down to future generations (Hutton, 1921).

5.8. Communal spaces and collective identity:

The communal spaces and collective identity in Naga domestic architecture is deeply engrained in the cultural, social, and historical fabric of the Naga tribes. Naga domestic architecture is not just about granary, residential and, individual homes; it reflects the

broader collective identity of the community and the vital role that shared spaces play in maintaining social cohesion, cultural practices, and tribal identity.

One of the most iconic communal structures in Naga villages, the *morung* serves as a space for social gathering, education, and the transmission of cultural knowledge. Young boys live together in these dormitories, learning about tribal history, warfare, craftsmanship, and customs from elders. Community gathering spaces were maintained in open courtyards, village squares, and festival grounds serve as venues for collective rituals, festivals (e.g. Hornbill Festival), storytelling, and decision-making meetings. Ceremonial spaces are also crucial for the performance of rites, religious ceremonies, and celebrations, reinforcing the tribe's collective spiritual identity. Among the Nagas, the *morung* (youth dormitory) stands out as a communal structure that reinforces peer identity, transmits oral tradition, and serves as a training ground for social, ritual, and martial life (Singh, 2017). Though the *morung* is not a domestic structure in a strict sense, its spatial and symbolic relationship with individual houses reflects how domestic and communal architectures are integrally connected in Naga culture.

Naga houses are traditionally arranged in clusters house arrangements that reflect kinship ties, social hierarchy, and defense strategies. The spatial organization mirrors the collective security mind set of Naga tribes. The carved wooden posts, mithun skulls, and elaborate house façades found in Naga houses often depict symbols representing the family's status, achievements, and participation in community rituals – emphasizing the connection between the household and the larger community.

The construction techniques, materials used (bamboo, thatch, wood), and architectural forms are deeply linked to ancestral knowledge shared collectively across generations. Building a house itself is a communal activity, with extended family and neighbors participating in construction, reinforcing the sense of belonging and mutual reliance.

Each Naga tribe has distinctive architectural styles that act as visual markers of identity and a house or communal structure reflects not just the personal taste of the builder but the collective aesthetic and cultural codes of the tribe. *Morungs* often feature elaborate

carvings, totemic symbols, and tribal insignia, making them not just physical structures but also cultural archives that embody the tribe's historical narratives. Even as modernization has introduced new materials and construction styles, the idea of communal participation in house construction and the emphasis on symbolic identity in built form still persists in many Naga villages. This highlights the enduring value placed on community spirit and shared identity within evolving domestic architecture.

In Naga domestic architecture, communal spaces are the heart of village life, fostering social bonding, knowledge transmission, and cultural continuity. Collective identity is physically manifested in architectural forms, spatial organization, decorative motifs, and building rituals, making architecture a living expression of who the Nagas are – both as individuals and as a community. Comparatively, the longhouses of Borneo and the Balai (ceremonial houses) in parts of Indonesia (Waterson, 1990) perform similar communal functions, integrating socialization, governance, and ritual performance into architectural forms. This comparison highlights that Naga domestic architecture cannot be fully understood in isolation but must be seen in the broader context of village spatial organization and communal identity formation.

5.9. Built structures and their symbolic associations:

The architectural designs and decorations of Naga houses are deeply imbued with cultural and religious symbolism. The motifs often represent elements from nature, such as animals, birds, flowers, and geometric patterns, which are believed to symbolize fertility, prosperity, and protection from malevolent spirits. These symbols not only enhance the aesthetic appeal of the structures but also carry deeper spiritual meanings. Naga tribal architecture reflects a profound connection between the indigenous communities and their land, culture, and spirituality. As Waterson (1990) notes, these decorative motifs are deeply connected to the spiritual and cosmological beliefs of the Naga people, symbolizing ancestral worship and protection from malevolent forces. The craftsmanship, sustainability, and symbolic depth embedded in these structures illustrate a harmonious relationship between the people and their environment, reflecting the spiritual worldview

of the Naga tribes, as also discussed by Hodson (1911). Preserving these architectural traditions is vital for safeguarding cultural heritage and inspiring future generations to honor their identity.

The domestic architecture of the Naga tribes is rich with symbolic elements that reflect their cultural heritage, social structures, and spiritual beliefs. One prominent feature is the gable horn, often crafted from wood and bamboo and attached to the front of the house. These horns symbolize the homeowner's social status and wealth, and in Naga culture, they represent the horns of the *mithun* (a semi-domesticated gaur) or buffalo, signifying prosperity. The horns are also thought to possess supernatural powers and are linked to mythological creatures, particularly serpent-like beings. The size and intricacy of the gable horns' design often correlate with the homeowner's social standing—larger and more elaborate horns signify higher status and wealth. These horns may also feature carvings or paintings depicting Naga symbols or ancestral legends. (Waterson, 1990; Rapoport, 1969).

In addition to gable horns, Naga houses are adorned with decorative carvings and intricate patterns on pillars, beams, and walls. These designs frequently depict local legends, mythical creatures, and cultural motifs, reflecting the Naga people's rich mythology and artistic traditions. Symbolic motifs such as animals, human figures, and geometric patterns are used to convey stories and traditional wisdom. For example, the hornbill, which appears in the headdresses of the Konyak tribe, symbolizes power and honor, while the tiger represents strength and protection (Sahapedia, 2020). These motifs not only enhance the visual appeal of the structures but also serve as expressions of cultural identity and spiritual beliefs (Sahapedia, 2020; Morung Express, 2023). Another excellent example is the interior of the Konyak Angh's house in Longwa village, which features traditional symbols of power and heritage. Buffalo horns, wooden carvings, ceremonial gongs, and a central hearth represent the Angh's authority, headhunting legacy, and ancestral ties (*see plate 100*).

The spatial organization of Naga houses also holds significant symbolism. Traditional Naga homes generally follow an elongated rectangular plan, often oriented

eastward, with wildlife carvings on the wooden façades. The interiors are organized into communal living spaces, reflecting the shared values and importance of community bonds. Specific areas within the house are designated for rituals and ceremonies, with the placement of altars, sacred objects, and ceremonial spaces mirroring the religious beliefs and social customs of the inhabitants (Sridharan et al., 2021; Hutton, 1921; Mills, 1922).

Woodcarving in Naga architecture extends beyond individual homes to communal structures such as *morungs* (men's dormitories) and village gates. These carvings serve both social and ritualistic purposes, symbolizing the aspirations and achievements of individuals as well as the broader community. The non-utilitarian carvings often reference tribal institutions like head-hunting, feasts of merit, and male ceremonial traditions (Morung Express, 2023). Their presence in both domestic and communal spaces highlights the importance of these carvings in preserving and transmitting cultural memory and social values.

The study of Naga domestic architecture reveals a profound integration of symbolism and functionality. Each architectural element, from gable horns to intricately carved panels, functions not only as a structural component but also as a narrative device, conveying the worldview, history, and identity of the Naga people. These homes embody the intersection of spiritual beliefs, social status, communal values, and aesthetic expression, making them invaluable to the anthropological understanding of indigenous built environments (Sridharan et al., 2021).

The rituals performed and the offering of a feast of merit, conducted twice for seven days each time, entitle the couple to gable horns that do not rise above the rooftop and wood carvings of the decorative design represent mithun heads at the front walls known as *echü ketsücho* or *echo*, after which the couple is entitled to wear a pure white shawl which is stitched thickly using porcupine coat of sharp spines, or quills called *terü kedera* (see plate 101 & 104).

A traditional architectural form is observed following the Christmas feast on December 25th and 26th, 1998, at Naga United Village, Chümoukedima, and the Pre – Christmas feast on December 11th, 2021, at Chozuba village in Phek district. This

architectural style embodies the rich cultural heritage of the Chakhesang Nagas and reflects the accumulated wealth of the feast donor before the offering is made to the community. As part of this cultural practice, the donor earns the right to wear an ornate ceremonial shawl known as *hapidasa*, locally referred to as *lichira* or *thüpi khü* (feast of merit shawl), and to construct a new house featuring gable horns and other decorative architectural elements. When a person offers a feast only once or twice shall not be entitled to put a gable horn rising above the house, but after fulfilling the norms, a person is allowed to wear a shawl, drag a mega monolith and construct a house with gable horns rising above the house known as *chika/kechike* (see plate 102 & 104). Notably, couples who have hosted a community – wide feast are culturally permitted to construct this distinctive architectural house in any location, including towns or cities, as there are no customary restrictions within Naga society regarding the geographical placement of such houses.

The Naga gable horn is an intriguing symbol of how cultural beliefs and traditions can be expressed through architecture and design, representing ethnic values beyond its functional use. Megalithic or monolithic structures are common features in Naga architecture. The Naga people are known for constructing menhirs, dolmens, stone circles, and cairns. These monolithic structures served various purposes, such as marking significant events, burial sites, feasts of merit, and ceremonial rituals. Their construction required significant human resources and was often a communal effort (Jamir, 2004).

The foremost main post in the construction of a house plays a vital role, bearing the weight at the front. The middle front posts also carry symbolic designs that represent wild animals, warriors, and celestial bodies such as the sun, moon, and stars. The wealthiest individual in the village often uses curved main pillar posts, shaped from top to bottom like a ladder for lifting the gable horn. The strongest man of the day is selected for the most challenging task, and the owner must provide 40 pieces of meat to the workers.

The monolith is represented as a memorial and a sign dedicated to the Glory of God, for which the owner of the house offers a feast to two villages. It is said in the olden

days, the best warriors and healthy, capable persons from the village were chosen to stand on a Monolith while dragging stones after the priest completes performing rituals, which is a sign of alerting and fighting against the evil spirits to avoid any kind of eventualities or misfortunes. Contrary to the olden days, at present, Rev. Pastors or village elders invoke God's blessings, and the crowd starts pulling or dragging stones for the feast donor. Many of these megalithic or monolithic structures still stand and serve as reminders of the Naga people's rich cultural heritage (Plate 103).

A professional design at the topmost shape of a tiger symbolizes a human elder brother who respects a tiger because of its strength and not harming him anywhere he goes. "Though our great grand forefathers don't decorate our house with the human skulls, I have made it in my own ways that my house gives more tourist attraction, values and majestic³²", (Plate 105). The decorated measures of a sun, moon, and star in the main post represent the son. During the *Sekrenye* festival, father takes his son for a bath in the early dawn, brings three clean pieces of wood to make a new hearth around 1 (one) foot long, kills the best cock, and prays for his son before the food and best local brew is served.

The blessing words pronounced upon a son by his father are as such; "Heaven my father, Earth my mother, let not my son fall sick and become a good person, stay cold and strong as an iron, let my son be as famous as Sun, Moon, and Stars and let him live long like a Sun, Moon, and Stars³³".

The food that has been prepared on that day will not be shared with anyone except for the father and son, and if it cannot be finished, the leftover shall be covered in banana leaves said to be kept or given to the spirit.

The animal skulls such as elephant, deer, monkey, stag, bat, and buffalo. Decorated with an elephant's skull, trunk, and tooth signifies rich culture because after offering a feast of merit, a person is entitled to wear a shawl that is weaved with pictures of an elephant, hornbill, and *mithun*'s heads. Decorated with buffalo and *mithun* skulls in a house represent the wealth and richness of a person after offering a feast of merit. Other animal skulls symbolize excellent hunters and the love of hunting (Plate 106 & 107).

The skilled crafts resembling a pig, *mithun*, and buffalo heads symbolize the feast offered to the villagers. The breast – like curved crafts tell that every human being born on this earth has been fed with the mother's breast milk. Every nutritional food a person requires has been provided from the mother's breast milk; therefore, everything is considered available inside a rich man's house (Plate 108). The human head decorated with headgear, depicts taking the head of a female, and when a person has a physical relationship, his girlfriend offers him her hair and decorates the head with that hair received is known as *thame*.

The evening gathering after the day long work singing folk tunes and having their local brew. After they gather and once the cock crows, they would disperse to their homes. When a person's house is decorated with the skull of pigs, horses, wild boar, buffalos, or *mithun*, any visitor can distinguish that the owner is well – off (Plate 109).

An indigenous architectural style is the mini wood pounding table, which serves both as a tool for making local brew and for pounding millets and maize. The reverse side of the table functions as a wooden seat (Plate 110).

Various wooden and bamboo materials are used in construction, including wooden plates for distributing meat during feasts and bamboo baskets for carrying arrows during hunting. Larger granary bamboo baskets are used for storing rice, millet, and other grains (Plate 111).

A three – stone hearth and an earthen pot for cooking curry is an essential part of Naga life. Fire is considered to be one of the most important in human's life. It is taboo to put our legs around and jump over the hearth or above the oven because when a person does, their parents face an untimely death. When any neighbor exchange fire from the hearth, he or she needs to be very careful or cautious, making sure it reaches their home, failing which is considered a bad omen, meet misfortune, or become poor (Plate 112).

The spatial organization of the traditional Naga kitchen reflects a deep integration of function, culture, and environmental adaptation. One of the most significant interior architectural features is the *methre*, a suspended, tiered storage platform placed above the hearth. As shown in Plate 113, the *methre* serves multiple purposes – drying meat, storing

grains and utensils, and preserving items through the heat and smoke generated by the hearth. The accumulation of soot over time acts as a natural preservative, demonstrating an indigenous form of thermal and smoke – based food preservation. This arrangement not only highlights the resourcefulness of the Nagas but also reinforces the role of the kitchen as a multifunctional and symbolic space within the household

Symbolism plays a vital role in traditional Naga architecture. Every element of the architecture has a symbolic meaning that reflects the Naga people's beliefs, values, and traditions. The use of certain symbols and motifs can also convey social status, clan identity, and historical events. Studying of symbolism in Naga traditional architecture construction provides insight into the rich cultural heritage of the Naga people. It also highlights the importance of preserving and promoting traditional architectural knowledge and skills for future generations.

An overview comparison offers a comprehensive foundation for interpreting the cultural and symbolic dimensions of Naga domestic architecture of this research. Naga architecture is a rich tapestry of symbolic and functional elements that reflect the culture, spirituality, and social values of the indigenous communities. One of the most significant features of Naga architecture is the *morung*, a men's dormitory that serves both as a physical and symbolic space. The pillars of these *morungs* are not only structural but also deeply symbolic, representing strength, virility, and the continuity of clan identity (see Eliade, 1959). Additionally, the carved human figures in the *morung* are thought to invoke ancestral guardianship, thus maintaining the spiritual protection of the community. The village gates, often adorned with carvings, are also seen as important spiritual thresholds, marking the boundary between the sacred and the profane.

The cultural heritage of the Naga people is also embedded in the spatial organization and ritual meanings of domestic and communal structures. In many Southeast Asian societies, including among the Nagas, domestic space is intimately connected with cosmological beliefs, ancestral veneration, and gendered spatial divisions (Waterson, 1990). The arrangement and decoration of Naga houses—including hearth orientation, use of symbolic carvings, and spatial hierarchies—are deeply informed by ritual practices and

beliefs about protection, fertility, and social order (Hutton, 1921). Vernacular architecture serves not merely as shelter but as a cultural expression shaped by worldviews, rituals, and belief systems, where every architectural element—from carved posts to spatial arrangements—can carry layered symbolic meanings (Oliver, 1997). Naga homes are not just places for habitation but also a reflection of the Naga people's deep spiritual beliefs and cultural practices (Fürer-Haimendorf, 1939). These homes were designed to be in harmony with the land, with each element serving both a practical and symbolic function. The material culture of the Naga people, including their homes, are living archives of ancestral memory (Vasa, 2019). These spaces symbolize collective spiritual identity, offering a space where both history and spirituality coexist, thus bridging the past with the present.

The concept of wealth and social status is also symbolically represented in Naga architecture. Display of *mithun* skulls in Naga homes are indicators of wealth and prestige. The central hearth often placed at the heart of the home, functions as a cosmic and ancestral center, while entrance carvings serve as protective symbols, warding off malevolent forces. These elements of Naga homes are not mere decorative features but carry deep spiritual and cultural meaning, serving as expressions of the family's social standing and spiritual beliefs.

Hutton (1921) and Mills (1922) also provide valuable insights into the symbolism of Naga village gates and houses. Hutton (1921) notes that the village gates serve as sacred-profane boundaries, with elements such as horns, tusks, and feathers displayed on the gates symbolizing status. The height of houses and the presence of Y-shaped posts further indicate the rank and authority of the chieftain. Similarly, Mills (1922) emphasizes the significance of carvings on *morung* pillars, which depict Naga myths, bravery, and historical events, illustrating the deep connection between social identity and architectural design. The symbolic meanings of architecture and carvings across various Naga tribes and the integration of these elements into the social and spiritual fabric of Naga society underscores the central role of architecture in maintaining cultural identity.

The spatial organization and materials used in Naga architecture are also central to understanding the symbolic and cultural dimensions of their homes. The architecture of Naga houses, through its materials and design, reflects the spiritual and social values of the Naga people (see Waterson, 1990). The layout of Naga homes is a reflection of their cosmology, with different areas dedicated to various functions, from communal spaces to sacred ritual areas. Naga homes are often seen as microcosms that reflect the cosmic order, with the gates and *morungs* functioning as ritual thresholds connecting the spiritual and physical worlds (see Eliade, 1959). The use of animal skulls and bones in Naga homes also are symbols of wealth and hunting prowess (Nshoga, 2015). The placement of these objects within the home, along with the spatial hierarchy, reflects the spiritual significance and clan status of the inhabitants.

The continued existence and cultural significance of the *morung* are evident in the present-day remains and ongoing use of these structures by way of preserving with modifications. The symbolism embedded in the carvings and architectural features of the *morung* conveys crucial social and ritual meanings, which vary across Naga tribes. These features, such as intricate wood carvings, serve not only as artistic expressions but also as cultural markers, embodying the collective heritage of the community. The preservation of these architectural elements is vital for maintaining the traditions and worldview of the Naga people, acting as a bridge between past and present cultural practices.

Naga carvings decode the intricate symbolism found in various Naga built structures, such as *morungs* and village gates (Elwin, 1959) that provides a foundational understanding of the cultural and spiritual meanings embedded in Naga architecture, offering key insights into how these symbols serve to communicate the values, beliefs, and history of the Naga people.

Naga architecture is a profound expression of the people's culture, spirituality, and social structure. From the symbolic carvings on *morung* pillars to the intricate designs of village gates and the central hearths in Naga homes, every architectural element is imbued with meaning. These structures are not just functional but serve as powerful symbols of identity, wealth, protection, and spiritual connection, demonstrating the deep integration

of the material and spiritual realms in Naga culture (Ramble, 1997; Fürer-Haimendorf, 1990; Eliade, 1959; Elwin, 1959). A comparative review thus reveal that Naga domestic architecture cannot be understood solely as a product of functional necessity or environmental adaptation. Rather, it emerges as a complex cultural artefact, intricately tied to cosmological beliefs, kinship organization, ritual performance, and historical memory. The works of early ethnographers provide important descriptive foundations, documenting the material and symbolic elements of Naga houses. At the same time, broader perspectives from Amos Rapoport (1969) and Roxana Waterson (1990) introduce valuable comparative lenses, emphasizing how vernacular architecture globally — and in Southeast Asia — often functions as a living cultural text. These comparative insights highlight that Naga domestic architecture is not isolated; rather, it participates in wider regional patterns where houses serve as sites of cultural performance, symbolic boundary-marking and social reproduction.

This comparative application also identifies key gaps in the existing literature, particularly the need for more systematic studies that explore how Naga house forms are evolving in response to modernity, changing social structures, and climate challenges. Furthermore, the intergenerational transmissions of indigenous building knowledge, and the ways in which young Naga builders reinterpret traditional symbolism, remain underexplored areas that this research aimed to address.

Table 3: Key symbolic elements in Naga domestic architecture

Symbolic element	Significance
Carved <i>mithuns</i> /buffalo horns on wood and gable horns	Wealth, rituals, sacrifices, and high social status.
Spikes bamboo elements on a roof	Ward off evil spirits or malevolent forces and vestiges of warrior.
Skulls (animal/human)	Hunting prowess, rituals, sacrifice, and warrior status.
Phallic symbols	Fertility and connection to land.

Roofs with steep pitch	Protective symbolism – akin to shields, also practical in heavy rainfall areas.
Central hearth	Sacred space – connects ancestors, land spirits, and family unity.
Entrance carvings	Protection from evil spirits, enemies and symbolic guard.
Erecting a Monolith	Feast of merit, wealth, and social status.
Y – Shaped posts	Feast of merit, prosperity, rituals.
Log drums	Community identity, unity/strength, communication of warfare, and spirituality, guard, victory.
Pounding table	Functional, self – sufficiency, skilled craftsmanship, sustainable, wealth.
Wooden bed or seat	Craftsmanship, artistic abilities, status, wealth, and aesthetic sense, hospitality, respect and honor.
Carved animals, and motifs of sun, moon, and stars on a main wooden pillar (Front porch)	Courage, and the beliefs of divine order, ancestral realm, spirits of the dead watching over the living, knowledge, seasonal rhythm, cosmic cycles, ancestral legacy, and the fertility of land and people.

Endnotes

³¹. Interview with Chülonyi Lasuh, 85 years, Elder & Feast Donor; Kekhwechülo Thele 54 years, Goanbura & Feast Donor & Wenyilo Venuh, 47 years, VCC, Mesulumi Village, Dated: 06 – 08/04/2017 & Dilhi Kreo, 86 years, Ex. VCC; Kezütshü Khutso, 84 years, Ex. VCM & Dichü Wetsah, 66 years, VCM, Zapami Village, Dated: 23/06/19.

³². Interview with Veswuzo Phesao; 65 years, Exhibition Officer, NEZCC, Naga United Village, Chümoukedima, Dated: 09/04/2022.

³³. Interview with Veswuzo Phesao; 65 years, Exhibition Officer, NEZCC, Naga United Village, Chümoukedima, Dated: 09/04/2022.



Plate 84:



Plate 85:



Plate 86:



Plate 87:



Plate 88:



Plate 89:

Plate 84-89: Type of bamboo species - *Vüso* (*Dendrocalamus strictus*), *Mezhilo* (*Dendrocalamus hamiltonii*), *Khuchi* (*Bambusa balcooa*), *Kepho* (*Dendrocalamus giganteus*), *Zhiti* (*Bambusa tulda*), and *Echi* (*Chimonobambusa callosa*) that are integral to Naga architecture and daily life.

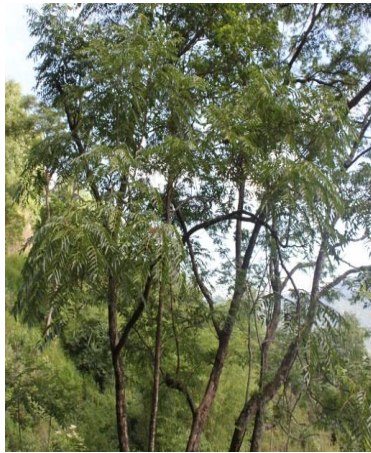


Plate 90:



Plate 91:

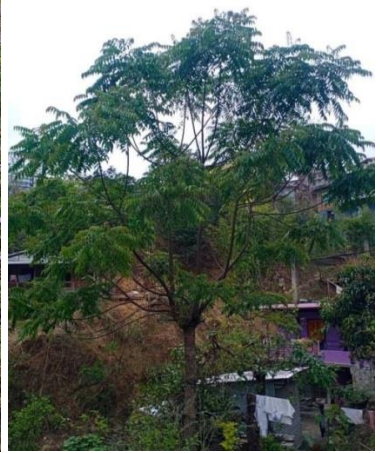


Plate 92:



Plate 93:



Plate 94:



Plate 95:

Plate 90-95: Timber from locally known species—*Etsetshü* (*Toona ciliata*), *Kedimene* (*Chukrasia tabularis*), *Kulachetshu* (*Choerospondias axillaris*), *Chütsü Mezü* (*Albizia lebbeck*), *Mewitshü* (*Phoebe goalparensis*), and *Sürhumdsü* (*Caryota urens* L.)—widely used in Naga architecture and craftsmanship.



Plate 96: A priest's house in Zhavame village, Phek district, remains partially constructed with wooden planks and fallen pieces serving as a surviving testament.



Plate 97: Thatch grass grown on terraced slopes for use in traditional Naga architecture.



Plate 98: Stone slates in eastern Nagaland used for roofing and as post caps in granaries to deter rodents. (Measuring 2.4 cm thick and 25.4 cm long Approx.).



Plate 99: Tokupatta (*Trachycarpus fortunei*, *Arecaceae*) palm leaves traditionally used as roofing material among the Konyak of Mon district, and in parts of Mokokchung and other eastern Naga regions.



Plate 100: Interior of the Konyak Angh's house in Longwa village, featuring traditional symbols of power and heritage (Buffalo horns, wooden carvings, ceremonial gongs, and a central hearth represent the Angh's authority, headhunting legacy, and ancestral ties).



Plate 101: Naga architecture with gable horns and *mithun* head carvings, symbolizing the completion of two Feasts of Merit, after which the couple earns a porcupine quill-adorned shawl (*terü kedera*).



Plate 102: Chakhesang Naga architecture, linked to the Feast of Merit, features gable horns (Donors who complete rituals earn the right to wear the *lichira/thüpiikhü* shawl, erect monoliths, and build homes with elevated gable horns)



Plate 103: In traditional Naga society, a feast offering symbolizing prestige and status is followed by the erection of a monolith.



Plate 104: Two types of *Feast of Merit* shawls (the colorful hanging shawls known as *Lichira* or *Thüpihü* (*Hapidasa*), and the white worn shawl referred to as *Terükedera*), *Chakhesang Naga*.



Plate 105: A carved tiger at the top-most of the main pillar symbolizing strength and ancestral kinship with the tiger as elder brother (Sun, moon, and star motifs on the main post represent lineage and continuity).



Plate 106: Façade adorned with animal skulls—elephant, deer, monkey, stag, bat, buffalo, and *mithun*—each symbolizing cultural pride and personal achievement (elephant's skull denotes high status attained through a feast of merit).



Plate 107: Display of animal skulls and bird specimens, symbolizing cultural pride, hunting prowess, and the connection to nature and its role in ancestral traditions.



Plate 108: Wooden carvings of pig, *mithun*, and buffalo heads on the façade symbolizing communal feasts (Breast-shaped motifs represent motherhood and abundance, while a human head carving, adorned with headgear and hair, signifies a headhunting trophy or a lover's gift of hair, symbolizing a personal bond).



Plate 109: Houses adorned with animal skulls, such as pigs, horses, or *mithun*, signaling the owner's wealth and social status.



Plate 110: The miniature wooden pounding table in Naga architecture that serves as both a tool for preparing local brew and pounding millets or maize (its reverse side serves as a functional wooden seat, blending utility and tradition).



Plate 111: Traditional wooden and bamboo implements; wooden plates for serving meat during feasts and bamboo baskets for carrying arrows on hunts (Background: Large, finely woven bamboo granary baskets for storage of grains).



Plate 112: The traditional three-stone hearth with an earthen pot that is central to Naga domestic life (the fire holds profound cultural and spiritual meaning).



Plate 113: Interior of a traditional Naga kitchen showing the *methre* (overhead storage platform) used for drying and storing food, utensils, and household items.

CHAPTER- 6

Discussion and Conclusion

The traditional architecture of the Nagas can be more fully appreciated when situated within the broader context of Southeast Asian vernacular traditions, where the “house” is regarded not merely as a shelter, but as a spiritually charged and culturally expressive entity. Across various indigenous societies in the region, dwellings are often perceived as living organisms that embody ancestral presence, kinship structures, and cosmic order—an understanding closely mirrored in Naga architectural practices. Among the Nagas, the built environment carries layered meanings, with elements such as the hearth and carved wooden posts serving as tangible expressions of mythic origins, ritual roles, and memory. Archaeological findings from mainland and island Southeast Asia, including regions of Thailand, further suggest that pile-dwelling construction and stilted houses—also seen in Naga settlements—extends back to the later Neolithic period (Waterson, 1990, p. 14).

The present study aims to explore the diverse architectural forms of Naga houses, the functions they serve within the socio-cultural and ecological contexts, and the meanings embedded within their spatial arrangements, construction processes, and symbolic elements. Through historical, ethnographic, and comparative approaches, the research has documented how Naga domestic architecture functions as a multidimensional cultural artefact, simultaneously serving practical, symbolic, social, and spiritual roles.

As maintained by Trigger (1968, 1978), a variety of determinants are crucial for understanding how settlement patterns reflect a society's adaptation to its environment and the technologies it employs. These patterns also offer insights into the social, political, and religious organization of prehistoric societies. In reflecting on the concept of a “house,” Howell (2003) reminds us: “Houses are much more than physical structures. Houses are homes, places of work, rest, and worship...As such, houses express

symbolically, through architectural design, decoration, and layout, their purpose and the pertinent characteristics of their inhabitants” (Howell, 2003, p. 16).

There is very limited scholarship on traditional tribal technology in India, particularly in the Northeast. A notable contribution to this field is Amrendra Kumar Thakur’s *Technology of the Tribes of Northeast India* (2017), which, although focused on Arunachal Pradesh, is considered a pioneering work in this area.

The types of houses built by the Nagas exhibit different styles based on region and village. Notably, houses in the southern regions often share a similar style, which differs slightly from those of the eastern Nagas and communities such as the Ao, Lotha, Rengma, and Sümi. Building a Naga house is ceremonial in nature, with certain rituals performed before construction begins. The A-frame structure commonly seen in Naga houses enables them to withstand strong winds and rough weather. While most houses are constructed on flat surfaces, some are built on stilts or raised platforms, depending on the landscape or climatic conditions. A significant step in house construction is the erection of the main post. Using a large log of wood as the central post signifies that the homeowner is a wealthy individual who can command communal labor. Once the main posts are in place, the framework and structure of the house begin—bamboo is typically used for this purpose.

Traditional Naga houses usually have no windows, which may reflect the lifestyle of the people—during the day, individuals are often working in the fields or forests or gathered in the courtyard with other community members. As a result, the interior rooms of Naga houses are often quite dark. Doors are usually wooden and often feature intricate carvings. Some houses also have elevated resting platforms placed outside, where families socialize and spend time together. These platforms are known by different names in various dialects, such as *badze* in Tenyidie and *kilanmi* in Monsüng.

One of the most interesting features of a Naga house is its sloping roof, with some nearly touching the ground. Roofing materials include thatch, stone slates, and palm leaves. Stone slates are common in Meluri, Kiphire, and other eastern Naga regions, while palm leaves are used in Ao and Konyak areas. In Angami, Chakhesang, and Zeliang areas,

straw or thatch is typical. Although it may seem unlikely that palm leaves could effectively serve as roofing, they are woven so skilfully that they prevent leaks from wind or rain.

For walls and overall structure, Nagas primarily use wood and bamboo. Walls are often woven with bamboo strips in patterns that vary according to region and stylistic preference. Instead of nails, natural materials such as creepers, cane rope, bamboo rope, and vine are used to bind the structures. Wood carving is a distinctive feature of Naga houses. Decorations are mostly concentrated at the front of the house and attached to the roof. Common carvings include animal and human motifs—birds, tigers, human skulls, and celestial designs. These carvings hold deep significance for the homeowner or the community. Ornamentation is also found on gable posts, roofs, and house horns.

Naga houses that stand out for their size, decoration, and structure include the *morungs* (youth dormitories), houses of village *anghs* or chiefs and priests, and homes of wealthy individuals. These are often the largest and most elaborately decorated dwellings in the village, particularly in areas where *anghs* reside. Houses of those who have hosted the Feast of Merit are also distinguished by intricate motifs and carvings.

Most Naga houses feature a designated sitting area in the front room. The hearth, a central element in the household, is typically located in the middle of the kitchen in many villages, while in others; it is positioned in a corner. This space serves as the main gathering space for the family. Beyond the kitchen, the house generally includes bedrooms, a urinal shed or bathroom, and storage rooms.

In addition to residential buildings, Nagas also construct utility structures such as granaries and field huts. Granaries, often built on stilts, are placed outside the dwelling or village to protect against accidental fires, though in some tribes they are kept within the home. Field huts, located on farmland, provide overnight shelter and storage for harvested crops.

Traditional Naga houses require periodic maintenance, which is typically carried out with the help of the community. In earlier times, communities would assist each other in turns, reflecting a deep sense of communal responsibility. During times of calamity, the entire village would unite to rebuild a damaged home. Naga architecture thus embodies

not only their building techniques but also their enduring spirit of mutual support and interdependence.

i. Symbolic dimensions:

Drawing from Rapoport (1969), Waterson (1990), and Eliade (1959), the symbolic significance of Naga houses can be more deeply understood using architecture as cultural and symbolic themes. Rapoport (1969) views vernacular architecture as a material reflection of cultural values, belief systems, and social structures. This is evident in Naga domestic and communal buildings, such as the *morung*, which serve as more than shelter—they are active symbols of identity, prestige, and ritual authority. Elements like carved posts with human or animal figures communicate clan affiliation and social standing; while the display of *mithun* and buffalo horns on façades reflect wealth, ritual participation, and past feasts of merit. Similarly, features like Y-shaped posts and the erection of monoliths further signal prosperity and ritual achievement. Even practical elements like steeply pitched roofs, while functional in a high-rainfall environment, double as symbolic shields, reinforcing protection and status. Waterson's (1990) anthropological framework helps illuminate the house as a living, evolving structure that embodies kinship ties and life-cycle events. In Naga villages, the central hearth (*maphu-Khezha/mephu-Chokri/miphu-Angami*) is a sacred core, associated with ancestry, female space, and family unity. The pounding table (*epa-Khezha*) placed near the hearth or attached to the granary section, highlights gendered labor and domestic rhythms, symbolizing sustenance and skilled craftsmanship. Ancestral relics—such as inherited weapons or animal skulls, including human ones—symbolize warrior status, ritual history, and hunting prowess. Beds or seats carved from wood reflect not only artisanal skill but also the householder's wealth, hospitality, and social respect. The construction process itself—through ritual offerings to wood spirits and purification rites—reveals the house as a sacred domain where the spiritual and material converge.

Eliade (1959) further enriches this understanding by interpreting the house as a microcosm of the universe. Naga homes embody cosmological order, with features like

the gabled horns (*chika or kechi*) signifying masculine vitality, cosmic protection, and sacred power. Entrance carvings and guardian figures act as thresholds between the sacred and profane, protecting the house from malevolent forces. Spiked bamboo elements on roofs also serve to ward off evil or protect from harm (Apotropaic), while phallic symbols express fertility and a spiritual link to the land. Houses are often oriented toward significant natural landmarks, reinforcing metaphysical ties between land, ancestors, and cosmic order. The separate granary structure, ritually protected, reflects an agricultural cosmology rooted in sustenance, fertility, and ancestral blessing. Carved motifs of the sun, moon, and stars on the main wooden pillars of the porch further reinforce beliefs in divine order, ancestral oversight, and cosmic rhythm.

Together, these symbolic features—viewed through the lenses of Rapoport, Waterson, and Eliade—demonstrate that Naga architecture is deeply embedded in cultural meaning. It integrates cosmology, social order, gendered space, ritual practice, and ancestral memory into a built environment that is as spiritually potent as it is materially functional.

ii. Cultural significance and identity:

The Naga homeland comprises a mosaic of culturally rich communities, each with its distinct heritage expressed through oral traditions, music, ritual practices, and material culture. Central to this cultural expression is domestic architecture, which functions not merely as physical shelter but as a vessel of collective identity and historical continuity. Much like the traditional garments worn during ceremonial festivals or the culinary and musical expressions unique to each group, Naga houses embody the social values, environmental knowledge, and ancestral legacies of their inhabitants. As Waterson (1990) observes in her study of Southeast Asian vernacular traditions, houses are not merely built forms but living embodiments of culture, memory, and social meaning.

The domestic architecture of the Nagas is not merely a practical construction; it is a profound expression of their social organization, cultural values, and spiritual beliefs. The study of Naga architecture, therefore, offers a holistic analytical lens through which

their way of life can be understood—where the physical space is a manifestation of their intangible cultural heritage. This interpretive conclusion aligns with Waterson’s (1990) ethnographic framework, which emphasizes the symbolic and cosmological dimensions of architecture in Southeast Asia. As Waterson asserts, houses are not simply shelters but culturally embedded institutions that express kinship, social identity, ritual significance, and cosmological beliefs. In the case of the Nagas, the *morung*, chief’s house, carvings, and village layout similarly function as material expressions of cultural knowledge and ancestral continuity. Thus, preserving traditional Naga architecture is not only about safeguarding material forms but also about maintaining the socio-cultural fabric they embody (Waterson, 1990).

a. Clan and Tribal Identity through Cosmological Alignment:

The understanding of clan and tribal identity in Naga domestic architecture can be meaningfully deepened through Rapoport’s cultural–environmental model, which asserts that house form arises from complex cultural codes, not merely from environmental or functional needs (Rapoport, 1969, pp. 46–49). However, when applied to Naga contexts, this model gains further richness by examining how architecture mediates cosmological order. For instance, the spatial orientation of the house—such as entrances facing cardinal directions, the positioning of the hearth, and placement of totems or clan emblems—often reflects a ritual logic aligned with the community’s belief systems.

These architectural choices go beyond identity signaling; they materialize clan myths, ancestral reverence, and spiritual boundaries. The decorated front façade, frequently bearing clan-specific carvings or animal motifs, not only asserts lineage but also invokes protection, fertility, and cosmological harmony. Ritual spaces inside the home, such as the hearth (a sacred center) or the pounding table used in feasts and offerings, reinforce the cyclical connection between domestic life and the metaphysical world. Thus, architecture becomes a medium through which the clan sustains its spiritual narrative and reaffirms its cosmological position within the community and the wider universe.

b. Community Living and Spiritual Spatiality:

Rapoport's insight that vernacular architecture embodies "culturally appropriate environments" (1969, pp. 70–72) is exemplified in how Naga villages are not only spatially organized for kinship cohesion but also structured in accordance with cosmological beliefs. The *morung*, for example, often occupies a central or elevated location in the village—not just for its social significance but also for its symbolic elevation, possibly aligning with ancestral visibility or spiritual oversight. The use of axial plans, tiered rooflines, and sacred thresholds demarcates transitions between the mundane and the sacred—an idea deeply embedded in Naga cosmology.

Construction practices themselves are imbued with spiritual significance. The selection of timber, especially species associated with ancestral spirits or particular deities (such as *Toona ciliata* or *Phoebe goalparensis*), the timing of construction based on lunar calendars, and communal rituals during roof-laying or post-raising reflect how architecture mediates between the human, ancestral, and natural realms. Here, Rapoport's theory supports the observation that cultural filters not only shape spatial organization but also determine how architecture participates in ritual continuity and cosmic balance.

Even as modern influences reshape materials and techniques, many of these spiritual codes persist. For example, some households may adopt concrete but still embed carved panels or retain ritual hearth positions. These hybrid forms echo Rapoport's observation that tradition adapts without fully abandoning its symbolic foundations.

iii. Environmental adaptation:

On Trigger's critique of environmental determinism—where human communities actively negotiate, rather than passively submit to, their surroundings (Trigger, 1989, p. xvii)—we can understand Naga houses as culturally inflected climate solutions. Traditional Naga houses are built to suit the hilly terrain and often humid climate. They typically feature elevated platforms or stilts to protect against dampness, flooding, and pests. Stone slates, wooden plank, and thatched or palm-leaf roofs allow air to circulate underneath and through the indigenous technique structure, providing natural cooling and reducing humidity. Large, strategically placed windows or without and openings facilitate cross-

ventilation, ensuring a continuous flow of fresh air and maintaining good indoor air quality.

The use of bamboo and thatch provides natural insulation, helping keep interiors cooler at night. Thicker walls made from locally sourced materials with high thermal mass help moderate indoor temperatures by absorbing heat during the day and releasing it at night. The use of bamboo, wood, and thatch—renewable, biodegradable, and locally available materials—also reduces transportation energy and costs, making construction more sustainable. Traditional building methods involve minimal environmental impact, relying on techniques that harmonize with the surrounding landscape.

Naga houses are frequently oriented to take full advantage of prevailing winds for cooling and natural sunlight for illumination, reducing the need for artificial heating, cooling, and lighting. Orientation decisions also protect dwellings from heavy rains and strong winds. Interior spaces are designed to be multifunctional—accommodating cooking, sleeping, storage, and social activities—which enhances spatial efficiency and reduces the need for additional structures.

Design and construction practices are passed down through generations, incorporating accumulated local knowledge about climate and building techniques. Community involvement in construction fosters a deep understanding of cultural needs and environmental conditions. This living knowledge base makes Naga architecture highly adaptable—homes can be modified over time to remain comfortable and functional as conditions change.

Strategic site selection and elevated construction help manage water runoff during heavy rains, preventing flooding and waterlogging. Traditional water-storage systems—spring wells and rainwater harvesting—are often integrated into the architectural plan, ensuring a reliable supply. Vegetation around the house creates a cooling microclimate, provides shade, and acts as a windbreak. Techniques such as terracing and planting native species help control soil erosion and bolster the resilience of the built environment.

While traditional forms remain central, modern climate-responsive techniques—improved insulation materials, solar panels, and enhanced rainwater harvesting systems—

can be sympathetically integrated to boost sustainability. Blending traditional knowledge with appropriate technologies yields resilient, comfortable living spaces that honor cultural identity. Policies supporting community-led construction and heritage conservation, along with workshops and training programs, will help ensure these climate-responsive practices continue to thrive.

Using Rapoport's (1969) cultural–environmental model, the selection and use of sustainable materials in Naga domestic architecture can be read as both pragmatic responses to environmental constraints and expressions of cultural identity. Traditional Naga builders draw on locally available bamboo, wood, thatch and native grasses to minimize ecological impact and transportation energy. Bamboo—valued for its rapid renewability—is employed structurally in posts, flooring, walls, and roofing, while various hardwoods, harvested under sustainable forestry practices, serve for beams, furniture, and decorative elements. Dried wooden plank, thatch and palm leaves provide lightweight insulation, keeping interiors cool in summer and warm in winter, and support the continuation of age-old crafting skills.

Traditional joinery—which forgoes metal fasteners—enhances structural flexibility and durability, allowing buildings to flex under wind loads and seismic stresses. Stilted foundations elevate homes above damp ground, reduce soil disturbance, improve drainage, and offer protection against flooding and pests. Any construction waste is fully biodegradable, returning nutrients to the soil.

Through this lens, each material choice and building technique is a negotiated balance: bamboo culms reflect ecological stewardship and clan-based exchange networks; thatch roofs carry symbolic patterns of roof-thatched ornamentation; stilt heights are calibrated to local flood histories. Even modern interventions—such as improved insulation panels, solar collectors, or low-energy lighting—can be grafted onto traditional forms without severing the cultural logic of the house (Rapoport, 1969, p. 42).

iv. Social and economic factors:

a. Economic status: The size and complexity of a house often represent or indicate the owner's economic status. Wealthier families have larger homes with more elaborate

decorations and designs. The interplay of social and economic factors in the economic status of Naga domestic architecture is deeply rooted in the cultural, historical, and environmental context of the Naga tribes. Understanding how factors influence economic status in Naga domestic architecture involves an analysis of various interconnected elements: Naga society is traditionally organized around clans, with each clan having its own social standing within the community. The status of a clan or family within the social hierarchy directly impacts their economic status, which is often reflected in the size, location, and decoration of their homes. The village chieftain, or Angh, and priest often reside in the most prominent and largest house, symbolizing his authority and higher economic status. This house typically includes features that reflect the wealth and power of the chieftain or priest, such as larger storage spaces for grain and livestock, elaborate carvings, and a central location within the village (also see Rapoport, 1969).

The tradition of “Feasts of Merit” is a significant social practice among the Nagas, where individuals or families host large feasts for the community. Hosting such feasts is a way to gain social prestige and is often associated with the construction or enhancement of a house. The ability to host these feasts is directly tied to economic resources, and the architectural enhancements made to the host’s house after the feast, such as added rooms and decorative elements, serve as permanent markers of their elevated social and economic status. In Naga society, property and wealth, including houses, are often passed down through generations. The inheritance system plays a critical role in maintaining or enhancing the economic status of a family. Wealthy families can afford to build and maintain larger, more elaborate houses, which in turn reinforce their social standing.

Agriculture is the primary economic activity in Naga society, and land ownership is a key determinant of economic status. Families with larger tracts of fertile land can generate more wealth, which is reflected in the size and quality of their homes. Wealth from agriculture allows for the construction of granaries and other storage structures within or near the home, which are indicators of economic status. These structures are often built with durable materials and are sometimes decorated to signify the couple or family’s prosperity. The use of symbolic ornamentation in Naga domestic architecture,

such as totemic carvings, wooden scoop designs, or painted motifs, reflects both cultural beliefs and economic status. Wealthier families afford more elaborate decorations, which are often created by skilled artisans. These symbolic elements serve not only as aesthetic enhancements but also markers of the family's cultural capital and economic resources.

The geographical location of a village influences the economic activities available to its inhabitants. Villages situated in fertile valleys or near trade routes tend to have higher economic status, which is reflected in the quality and size of their domestic architecture. The land on which a house is built also carries economic implications. Prime locations within a village, such as elevated areas or central positions, are often reserved for wealthier families, and it is narrated that the first settlers usually selected the best suitable place, whose houses are built to reflect their privileged status. The availability of natural resources, such as timber of wooden planks, stone slates, thatch, and bamboo, directly affects the construction quality of Naga homes. Families with better access to these resources can build larger and more durable houses, which contribute to their economic status. Scarcity or abundance of resources in a particular region can lead to variations in architectural styles and materials, with wealthier families often having the means to procure and use superior resources.

The economic status reflected in Naga domestic architecture is the result of a complex interplay of social, economic, cultural, and environmental factors. Social hierarchy, wealth generation through agriculture and trade, cultural practices, and access to resources all contribute to the architectural expression of economic status in Naga society. As the Naga people continue to engage with modern economic opportunities and adapt to changing social conditions, their domestic architecture evolves, reflecting both continuity and change in their expression of economic status.

b. Craftsmanship: The construction of houses is a communal effort, showcasing the collective craftsmanship and skills passed down through generations. Craftsmanship in Naga domestic architecture is a vital element that intertwines social and economic actors, reflecting the cultural identity, economic status, and social hierarchy of the Naga tribes.

Understanding how social and economic factors influence craftsmanship in Naga domestic architecture can be examined through different dimensions.

Craftsmanship in Naga domestic architecture is not merely functional but also deeply symbolic. It reflects the cultural identity of the community, with specific motifs, carvings, and designs tied to particular tribes, clans, or families. Certain crafts, such as wood carving or weaving, are traditionally associated with specific clans or communities. The craftsmanship displayed in homes thus becomes an indicator of cultural heritage and lineage, reinforcing the social structure within the community (Rapoport, 1969).

In Naga society, the quality and complexity of craftsmanship in a house often signify the social status of the inhabitants. Wealthier or more prestigious families are able to commission skilled artisans to create intricate designs, thereby enhancing their social standing. Craftsmanship in prominent structures, such as the house of a village chief or the *morung*, is often more elaborate, showcasing the social hierarchy and the community's respect for its leaders. The availability of high-quality raw materials, such as hardwoods for carvings or specific types of bamboo for construction, is closely tied to economic status. Wealthier households can procure better materials, which are then skilfully worked into the architecture (Rapoport, 1969). The economic ability to source and transport materials, especially those that are not locally available, directly impacts the craftsmanship displayed in a home. For example, wealthier families might import special types of wood or decorative elements from distant regions, integrating them into their domestic architecture.

Craftsmanship in Naga architecture regularly carries symbolic meanings, communicating the family's status, achievements, or spiritual beliefs. These symbols, whether in the form of totems, carvings, or painted motifs, serve both social and economic functions within the community. The display of craftsmanship in public areas of the home, such as the facade, entrance, or communal spaces, acts as a social signal, showcasing the family's wealth and cultural capital. Investing in high-quality craftsmanship is also an economic strategy for a couple or families looking to enhance their home's value. A well-crafted home is not only a symbol of wealth but also can be seen as an investment, with

the quality of craftsmanship adding to the property's economic and cultural values (see Rapoport, 1969).

In many Naga communities, the construction of homes involves collective labor, where community members come together to help build a house. The craftsmanship involved in such projects is often a communal effort, with skilled artisans leading the work. The quality of craftsmanship in these cases reflects not just individual wealth but also the community's collective resources and social cohesion. Public structures such as the *morung*, the village gate, and the rich man's house showcase the highest level of craftsmanship in the community, as they are symbols of communal pride and identity.

The introduction of modern tools and techniques, often brought in through external economic influences, has impacted traditional craftsmanship in Naga domestic architecture. The integration of Naga communities into the broader Indian and global economies has introduced new materials, tools, and techniques, influencing traditional craftsmanship. While some aspects of traditional craftsmanship may decline, others adapt, integrating modern elements into Naga architecture. Wealthier families have incorporated modern designs or materials into their homes with the help of skilled labor while retaining traditional craftsmanship, creating a blend of old and new that reflects both their economic status and cultural identity.

The craftsmanship in Naga domestic architecture is deeply influenced by social and economic factors, which shape the quality, complexity, and symbolic meanings of the architectural elements. Social hierarchy, cultural identity, and economic resources all play crucial roles in determining the level of craftsmanship displayed in homes. As Naga society continues to evolve and integrate with modern economic systems, the craftsmanship in their domestic architecture reflects both the preservation of traditional values and the adaptation to new economic realities. This interplay of factors ensures that craftsmanship remains a central aspect of Naga culture, with its expressions in architecture serving as a testament to the community's social and economic fabric.

v. Structural and aesthetic elements:

a. *Framework and construction*: The structural and aesthetic elements in the framework and construction of Naga domestic architecture can be explored through various dimensions, including cultural significance, materials used, structural techniques, and aesthetic expression. The houses are primarily constructed using a post-and-beam framework, with bamboo or wooden planks forming the walls and floors. Thatching, often made from dried leaves or grass, covers the roof. Naga architecture is deeply intertwined with the cultural identity of various Naga tribes. The design and structure of homes reflect social status, lineage, and clan affiliations. Many architectural elements serve symbolic purposes, such as the use of specific motifs or designs that represent tribal heritage, beliefs, or values.

Traditional Naga houses are primarily constructed from locally sourced materials such as bamboo and thatch. The choice of materials is influenced by availability, climate, and durability. The structural framework typically employs a post-and-beam method, which allows for flexibility and strength. Elevated platforms help protect against moisture and pests. Techniques such as interlocking joints and the use of woven bamboo and other natural creeper ropes for walls and timber are notable. These methods not only ensure structural integrity but also allow for natural ventilation.

Each tribe has its distinct architectural style characterized by unique roof shapes, wall patterns, and decorative elements. This variety contributes to the region's aesthetic diversity. Carvings, paintings, and colorful textiles often adorn Naga houses. These decorative features serve both aesthetic and cultural functions, conveying stories and traditions behind them. Naga architecture often harmoniously integrates with the surrounding landscape, reflecting an understanding of and respect for nature.

Domestic architecture includes specific zones for different activities, such as cooking, sleeping, and socializing. The layout reflects practical considerations, such as climate and social interactions. Traditional designs are often adaptable to changing needs and environmental challenges, showcasing a balance between function and aesthetics.

Hybridization or fusions of architectural elements are witnessed with globalization, which too is evident in Naga architecture. Contemporary Naga architecture

increasingly incorporates modern materials and techniques while striving to retain traditional elements. In the preservation and innovation of Naga architecture, there is an on-going effort to preserve traditional architectural knowledge while innovating to meet contemporary needs and standards (also see Waterson, 2009).

b. Ornamentation: Intricate carvings and decorations adorn the facades, pillars, and interiors of Naga houses. These depict animals, human figures, and geometric patterns, carrying symbolic meanings. The ornamentation of Naga domestic architecture is a rich and complex interplay of structural and aesthetic elements, deeply embedded in the cultural identity and social practices of the Naga people of Northeast India. The ornamentation often carries deep symbolic meanings, representing lineage, social status, or tribal identity. Patterns and motifs depict animals, nature, or geometrical designs related to the Naga's cultural narratives. Aesthetics serve as an important cultural marker. The designs have reflected historical events, ancestral legacies, and the natural environment, embedding a sense of identity and continuity within the architecture. The choice of colors and textures in ornamentation influences the visual appeal of Naga architecture. Natural dyes and materials often create vibrant patterns, enhancing the overall aesthetic experience. The aesthetic approach in Naga architecture emphasizes harmony with the environment. Ornamentation is inspired by surrounding flora and fauna, creating a seamless relationship between the building and its natural context.

Phenomenological perspectives offer a valuable lens through which to understand how individuals experience and interact with the built environment, particularly within traditional Naga domestic architecture. This approach emphasizes the sensory and embodied experience of space—how people feel, move, and relate to their surroundings. In the Naga context, the house is not merely a physical structure but a lived environment deeply intertwined with memory, identity, and emotion. The warmth of a hearth, the tactile familiarity of timber grains, the scent of smoked meat hanging from rafters, or the filtered light through bamboo walls evoke layers of everyday life and cultural continuity. These elements contribute to a lived experience of home that is inseparable from the surrounding

landscape and the rhythms of agricultural, ritual, and social life. For instance, in Ao and Chakhesang houses, the layout often centers around the hearth, which acts as a physical and symbolic core, anchoring both family gatherings and ancestral connections.

In many indigenous Southeast Asian architectural traditions, houses are experienced as active participants in the life of the community—as sentient entities or mnemonic devices that encode cultural values and worldviews (Waterson, 1990). This phenomenological reading of Naga homes underscores how spatial configurations—such as raised platforms, sacred corners, or separate hearths for different family members—shape and reflect social relationships, gender roles, and ritual practices. Entering or moving through the house involves bodily rituals that mirror social etiquette and symbolic cosmology.

Complementing the phenomenological lens, a semiotic perspective allows for the decoding of meanings embedded in the signs and symbols present in Naga architectural ornamentation. Naga houses are often richly adorned with carved motifs on façade elements such as gable horns, front posts, or door frames—featuring depictions of animals, weaponry, or geometric patterns. These are not merely decorative but function as cultural signifiers, communicating information about the owner’s clan, social status, achievements (such as headhunting in historical contexts), and ritual affiliations.

For example, *mithun* (a semi-domesticated bovine) horns displayed prominently on house façades in Chakhesang or Angami homes symbolize wealth, feasting status, and communal generosity. Similarly, stylized carvings of human figures or weapons on the *morung* (bachelor’s dormitory) serve to reinforce collective memory and warrior identity. The placement and selection of these symbols are intentional, governed by cultural protocols and often requiring ritual sanction, indicating their communicative and sacred roles. Such symbolic systems are deeply integrated with local cosmologies, where architecture becomes a form of storytelling and ancestral transmission (Waterson, 1990). In the Naga context, decorative and spatial choices can reflect foundational myths, genealogical ties, or even cosmological orientations (e.g., aligning entrances in particular directions). Thus, from a semiotic standpoint, Naga houses operate as texts—visual and

spatial languages through which cultural knowledge is encoded, read, and preserved across generations.

By integrating phenomenological and semiotic perspectives, one can gain a more holistic understanding of Naga architecture—not merely as built form, but as an expressive, sensory, and symbolic cultural landscape. This dual approach illuminates how traditional houses serve both as environments of dwelling and as material expressions of cultural identity, continuity, and transformation.

vi. Functional design:

a. *Space utilization:* The interior of a Naga house is typically divided into functional areas, including a central hearth for cooking, warmth, performing rituals, sleeping areas, and storage spaces. The designs reflect and respect the rich cultural practices, beliefs, and social structures of the Naga people. This includes incorporating spaces for communal gatherings, rituals, and ceremonies, which are central to Naga culture. The architecture also embodies symbols significant to the Naga identity, utilizing motifs and materials that resonate with their heritage. The functional design involves a zoning approach, where private, semi-public, and public spaces are distinctly organized, yet interconnected. Considering the multi-functionality of spaces is crucial. For instance, areas might be designed to serve various purposes, accommodating both family activities and larger community gatherings. Space utilization ought to foster social interaction, reflecting the community-oriented nature of Naga society, potentially integrating communal spaces like porches or open areas for gatherings. Balancing private family life with the need for community engagement is essential. This has led to designs that allow for social interaction while respecting the privacy of individual family units.

An efficient layout minimizes travel distances within the home, allowing easy access to essential areas such as kitchens, bathrooms, and living spaces. Given the need for functional space management, incorporating built-in storage solutions maximizes utility without compromising spatial aesthetics. The designs are always kept in account

for the evolving nature of family structures and lifestyles, allowing for future modifications to the layout to accommodate changes in family size or function.

b. Defensive features: Historically, Naga villages were designed with defense in mind, featuring strategically placed houses and communal spaces to deter invasions. Therefore, when analyzing the functional design of defensive features in Naga domestic architecture, several key aspects emerge; the terrain and settlement patterns of the Naga villages are often located on hilltops or ridges, providing natural defense against invaders. The steep slopes and dense forests surrounding these settlements act as natural barriers. The houses are designed to withstand the heavy monsoons and high humidity of the region. Raised platforms on stilts not only protect against floods but also provide a vantage point against intruders. Collective defense mechanisms among the Naga communities are known for their strong sense of collective identity and defense. The layout of the village itself is a defensive feature, with houses arranged in a way that facilitates quick mobilization in case of an attack. Clan-based arrangements of houses within the village are often grouped according to clans, with each cluster having its own defensive features such as watchtowers or fortified gates maintained. In some villages or tribes, thick walls and roofs with dug mud and boulder stones made from sturdy materials are used as protection against the attack of the enemy. The entrances to the Naga villages are typically narrow and elevated, making it difficult for attackers to enter en masse or quickly. This design forces any potential invader to enter in a single file, making them vulnerable to counter-attacks. Some houses are designed with secret exits that allow the inhabitants to escape unnoticed in case of an invasion.

Many Naga houses feature carvings and symbols believed to ward off evil spirits or bring protection and totems. These symbolic features frequently serve dual purposes, both spiritual and psychological, by instilling fear or respect in potential invaders. Historically, head-hunting was a practice among certain Naga tribes, and houses often displayed the skulls of enemies as trophies. This served as a deterrent to would-be attackers, symbolizing the martial prowess of the inhabitants.

The use of indigenous materials such as bamboo, wood, and thatch is not only environmentally sustainable but also functionally effective in defense. The materials are chosen for their strength, availability, and ease of repair. The intricate craftsmanship in the construction of houses is not just for aesthetic purposes but also enhances their durability and defensive capabilities. For instance, tightly woven bamboo walls can absorb and deflect arrows or other projectiles. It is also noted that, in traditional Naga village planning, defense features were practically and subtly incorporated. For instance, bamboo spikes and trenches were strategically placed within village boundaries to ward off intruders. These elements not only provided protection but were also well-suited to the environment and consistent with the community's architectural practices.

While traditional defensive features are still evident in many Naga houses, modern influences have introduced new materials and construction techniques. However, the essence of defensive design persists, with contemporary adaptations reflecting changes in threats and environmental challenges. There is a conscious effort in many Naga communities to preserve traditional architectural practices, including the defensive aspects, as part of their cultural heritage.

The understanding of defensive features in Naga domestic architecture involves a holistic analysis of environmental adaptation, social structure, cultural practices, and materials used. These elements combine to create a built environment that is both functional and deeply embedded in the cultural identity of the Naga people. The defensive features of Naga houses are a testament to their resilience and ingenuity, ensuring the protection of their communities in a historically volatile region.

vii. Ritual and belief systems:

a. Ritual construction: Building a house regularly involves rituals and ceremonies to appease deities and spirits, reflecting the spiritual beliefs of the Naga people. The selection of a site for building is a ritualistic process involving divination or consultation with a shaman or elder to ensure that the location is auspicious. This often entails interpreting signs from dreams and nature, such as the flight of birds, a cock's crow, or the behaviour

of animals. Once a site is chosen, rituals are performed to cleanse and prepare the land, typically involving offerings to the earth spirits to seek their permission and blessings.

The act of laying the foundation is accompanied by rituals such as animal sacrifice, rice offerings, and the chanting of prayers. These acts serve to consecrate the space and spiritually secure the structure. Of particular importance is the erection of the central post, a ritual that resonates strongly with Eliade's concept of the *axis mundi*—a symbolic world axis connecting the heavens and the earth (see Eliade, 1957). This post is erected with great care and ceremony, and its successful placement is believed to ensure the structure's spiritual and physical stability.

The use of specific wood types and the incorporation of symbolic carvings are intended to invoke protection, fertility, and strength. Completion of the roof, especially in communal buildings like the *morung*, is marked by rituals that often include the placement of carved figures or animal horns, serving as spiritual guardians. According to Eliade (1957), such ritual acts transform the construction process into a re-enactment of cosmic creation—"founding a dwelling (which) is equivalent to founding a world" (Eliade, 1957, p. 31).

Naga architecture is constructed with a deep sense of spirituality. The building process is not merely functional but is viewed as a sacred act that involves appeasing spirits, ancestors, and deities. This spiritual foundation is crucial for ensuring the safety, prosperity, and well-being of the inhabitants. Rituals performed before, during, and after construction imbue the structure with sacred qualities and spiritual protection. The Naga worldview is reflected in the orientation and spatial organization of their buildings. Elements such as the house entrance and the central post are aligned in accordance with cosmological principles—mirroring the sacred order of the universe (Eliade, 1957).

Through ritual construction practices, the community maintains a connection to its ancestral roots and cosmological understanding. These rituals are more than traditions; they are re-enactments of mythical events, ensuring cultural continuity and spiritual harmony across generations. Communal participation in these ceremonies also reinforces social cohesion, uniting individuals through shared sacred acts.

The Naga people's emphasis on harmony with the environment is evident in their use of local materials and the reverence with which these are gathered. Ritual offerings to nature spirits reflect a belief in the land as a living entity—an idea central to Eliade's portrayal of archaic societies that, "do not live in a homogeneous and neutral space, but in a space that is sacred and significant" (Eliade, 1957, p. 20). Thus, Naga construction rituals not only build homes but affirm and renew a sacred relationship with nature.

b. Symbolic features: The symbolic features of Naga traditional architecture are deeply intertwined with the community's cultural identity, spiritual beliefs, and social values. Architectural elements function as expressions of cosmological and sacred understanding, much in the way Eliade describes religious symbols as manifestations of the sacred ('hierophanies').

The structure of a Naga house is a symbolic microcosm. The roof represents the sky, the floor represents the earth, and the central post acts as the *axis mundi*—a sacred link between the earthly and celestial realms (Eliade, 1957). The layout of the house, its divisions, and its orientation reflect an understanding of the world's sacred structure, reinforcing the cultural importance of spatial and spiritual alignment.

Elevated platforms symbolize both spiritual elevation and social status. Houses of chiefs and priests are often built higher and in central locations, underscoring their sacred authority and societal roles. Entrances are oriented toward auspicious directions, believed to allow the flow of protective spiritual forces.

Ornamental carvings found in Naga houses—depicting animals, celestial bodies, and mythological figures—are not mere decorations. These are a manifestation of the sacred ('hierophanie's) that render sacred the very materials of the house. Carved animals like the hornbill, tiger, or *mithun* embody courage, power, and wealth, invoking their traits into the household. Carvings of ancestors honor the dead and spiritually protect the living, serving as both a symbolic presence and a link between generations.

Colors used in architecture carry ritual meaning: 'red' denotes 'bravery and sacrifice', 'black' signifies the 'spiritual or unknown realm', and 'white' symbolizes

‘purity’. These combinations create complex visual narratives that encode Naga cosmology and morality.

Communal buildings like the *morung* embody the tribe’s unity and continuity. These structures are more than physical spaces—they are repositories of sacred knowledge and cultural transmission, resonating with Eliade’s idea of sacred space as a center of the world (Eliade, 1957, pp. 41–45). Totems and carvings within the *morung* retell myths, history, and values, sustaining the cultural memory of the community.

The homes of priests and chiefs stand as sacralized centers of leadership, adorned with symbols of status, protection, and spiritual power. Thresholds and entrances serve as symbolic boundaries, demarcating sacred space from the profane world. Stepping into a Naga house involves spiritual transition, often marked by rites or customary gestures of respect. The hearth, kept constantly burning, is not only a physical necessity but also a spiritual one—representing life, vitality, and continuity. Positioned centrally or near the couple’s bed, it anchors the home in warmth and protection.

In sum, the symbolic features of Naga traditional architecture mirror the spiritual, social, and cosmic structures of Naga life. As Eliade (1957) affirms, architecture in traditional societies is never merely utilitarian—it is a sacred enactment of order and meaning. Preserving these features is essential for sustaining the Naga worldview, which understands homes not just as shelters, but as sanctified centers of life and cosmology.

viii. Architectural expressions of cultural memory and resilience:

The multifaceted nature of traditional Naga architecture—as a fusion of ecological adaptation, social identity, and spiritual symbolism—finds theoretical resonance in the works of Waterson (1990), who views vernacular houses as living embodiments of cultural memory and social meaning; Rapoport (1969), who emphasizes the influence of environmental, material, and socio-cultural factors on house form; and Eliade (1959), who interprets architectural orientation and sacred space as expressions of cosmological order and spiritual belief.

Traditional Naga architecture is not merely a reflection of regional building practices but a profound articulation of indigenous knowledge systems, resilience

strategies, and cultural symbolism embedded within material forms. Among the Konyak Nagas, the architectural orientation of the house often includes a singular post pointing eastward, symbolizing life and prosperity, while also serving a vital structural role. This dual function—both symbolic and practical—is echoed across Naga communities.

The use of specific plant and timber species in construction highlights the ecological intelligence underlying vernacular architecture. For instance, *Toona ciliata* (commonly known as ‘Indian mahogany’ or *toon*, and locally as *etsetshü*) and *Chukrasia tabularis* (known as ‘Indian mahogany’ or ‘Chittagong wood’, locally referred to as *kedimene*), prized for their durability and aesthetic appeal, are traditionally reserved for crafting prominent architectural elements such as gable horns, which are both decorative and status-representative. Similarly, *Phoebe goalparensis*, commonly known as bonsum, is central to the fabrication of essential domestic objects—pounding tables, beds, seats, and carved items—earning it the epithet “the wood of life and ceremony.” Other species, such as *Choerospondias axillaris* (local name *Kulachetshu*), *Albizia procera* (Common name Koroi and locally term as *Chütsü mezü*), and *Caryota urens L* (*Sürhumdsü* or fishtail palm), further exemplify the careful selection of resources tailored to environmental conditions and cultural use. The fishtail palm, for example, is particularly favored for its fibrous strength, employed in wall-making, simple furniture, and utilitarian items like brooms, while its trunk pith is consumed as sago.

Architectural adaptations for food security are equally telling of local ingenuity. In Phelungre village of Kiphire district, Sangtam, and some eastern Nagas use stone discs—rat guards—under granaries to prevent rodents and insects from destroying grain reserves. Roofing materials such as stone slates, also sourced locally, reflect the community’s ability to sustainably utilize nearby geological resources. These stone slabs, precisely cut (2.4 cm thick and 25.4 cm long approx.), serve both protective and aesthetic functions.

Architecture, in Naga contexts, is also deeply linked to socio-cultural identity and collective memory. Villages like Mopungchuket in Mokokchung district stand as living museums of Ao culture, where traditional architecture is preserved not just for its utility,

but as an emblem of communal heritage. Structures like the priest's house in Zhavame (Chakhesang), with its distinct wooden planks used in roofing, mark sacred spaces within the village and indicate the specialized knowledge of local craftsmanship.

Communal and ceremonial functions are further embodied in features such as the *mepube* (Khezha), *mozhobu* (Poula) *sükruba* (Chokri)—stone or wooden platforms found in Chakhesang villages. These serve as social and ritual hubs, playing host to public announcements, peers gathering, and oral traditions passed from elders to youth. In a similar vein, handcrafted wooden barrels known as *etsü* and *tsherü*, prominent in Mesulumi village and in some other villages of Chakhesang areas, are integral to brewing local beverages during major communal events like the Feast of Merit. These vessels, along with traditional granary bamboo baskets and decorative animal skulls, not only hold functional value but also carry symbolic weight as markers of status, memory, and identity.

In rural agricultural settings, field huts made from bamboo and thatch offer a glimpse into the subsistence lifestyle of farmers. These structures, seamlessly integrated into terraced landscapes, double as shelters and storage units. The “Y-posts” often found in Ao, Lotha areas serve ceremonial and structural purposes, blending art with function. Meanwhile, log drums and *morungs* (youth dormitories) still found in some Ao villages and parts of eastern Nagaland represent vital cultural institutions, acting as centers of learning, communication, and communal life.

In sum, the architecture of the Nagas is a tangible manifestation of survival, spiritual belief, community values, and environmental harmony. These practices, embedded in material culture, continue to inform identity and resilience in the face of modernizing forces.

ix. Challenges in the preservation of traditional Naga architecture:

With the increasing use of modern construction materials such as concrete, bricks, and corrugated iron sheets, the availability and accessibility of traditional resources like wood, bamboo, and thatch have significantly declined. This shift poses a serious challenge to the

preservation and authenticity of traditional Naga architecture. Modernization has not only altered construction techniques but also influenced the lifestyle and preferences of the Naga people. The younger generation often lacks the same appreciation for traditional architectural forms as their ancestors, resulting in a diminished transmission of knowledge related to indigenous construction methods.

Traditionally, Naga domestic architecture relied on locally sourced and sustainable materials, which made building practices both affordable and environmentally responsive. In contrast, modern materials and techniques tend to be more expensive and less suited to the ecological and cultural context of the region. Additionally, the expansion of urban areas and development of infrastructure has frequently led to the replacement of traditional settlements with modern buildings and housing complexes. These pressures from urbanization have contributed to the gradual erosion of traditional architectural heritage.

Knowledge of traditional Naga architecture has historically been passed down orally and through hands-on experience. However, the onset of modernization, coupled with insufficient documentation and limited interest among younger generations, has led to the decline of traditional building techniques and the values embedded within them. As Oliver (1997) emphasizes, the transmission of vernacular architectural knowledge is increasingly at risk in many indigenous communities due to socio-economic transformations and cultural disengagement. In response, cultural organizations, community leaders, and architects are working to document traditional practices, raise awareness of their cultural significance, and promote the use of sustainable, locally sourced materials in contemporary construction.

Government initiatives aimed at modernizing infrastructure have also played a role in transforming Naga architecture. While these policies are often well-intentioned, they sometimes result in the erosion of traditional architectural practices. Although traditional methods and designs are still prevalent, modern influences are increasingly seen in materials, construction techniques, and layouts. With modernization, traditional Naga architecture is evolving. While some elements are retained for their cultural value, new materials and techniques are being incorporated to meet contemporary needs. This

dynamic interplay between tradition and modernity reflects broader patterns observed in vernacular architecture across regions, where external pressures and developmental policies reshape indigenous forms (Waterson, 1990; Rapoport, 1969; Oliver, 2006). These works emphasize that while adaptation can be necessary and even beneficial, it often risks marginalizing the symbolic and socio-cultural meanings embedded in traditional structures.

Traditional houses in Southeast Asia are not merely shelters but living embodiments of cosmology, memory, and identity (Waterson, 1990). The transition from traditional to modern architectural forms, thus, represents not only a physical change but also a cultural and symbolic shift. The disjunction introduced by modern materials and urban designs may disrupt the spatial symbolism and ritual functions that give traditional homes their meaning. Interactions between traditional and modern influences within Naga communities reveal a dynamic negotiation of identity. For the Nagas, traditions play a central role in defining cultural belonging. Rituals, festivals, language, and social structures are not just customs but expressions of their history and worldview. Modern influences—such as education, Christianity, and digital technologies—have introduced new ways of thinking and living, which sometimes conflict with traditional values. For instance, the widespread adoption of Christianity has significantly altered indigenous religious practices, festivals, and rituals, contributing to broader changes in social norms and cultural expressions.

Furthermore, the introduction of formal education and external knowledge systems has often come at the expense of indigenous knowledge related to construction, ecology, and ritual. Nevertheless, there is a growing movement to reintegrate traditional knowledge within formal frameworks, recognizing its value for cultural resilience and sustainable living. Such transformation of domestic architecture also reflects broader patterns of cultural adaptation (Waterson, 1990). As communities are exposed to modern influences, traditional architectural forms may be abandoned, hybridized, or reinvented to express evolving cultural identities. In urban areas, Nagas are increasingly forming

diaspora communities that seek to maintain cultural practices while adapting to the demands of city life—an act that demonstrates both loss and continuity.

In the evolving landscape of Naga communities, the traditional house remains a powerful symbol, retaining its social and spiritual significance despite contemporary changes. The interplay between enduring traditions and modern influences reveals how architectural forms continue to function as vessels of cultural memory, expressions of identity, and acts of resilience.

This study investigates the traditional domestic architecture of selected Naga communities, focusing on a range of districts—Chümoukedima, Kiphire, Mokokchung, Mon, and Phek—chosen to reflect the architectural diversity and continuity across different regions and Naga groups.

The research primarily examines the period from the early 20th century to the present day, focusing on key architectural elements such as design principles, material usage, construction techniques, and symbolic features embedded in domestic structures. Fieldwork included on-site documentation of traditional houses; particularly those used for rituals and family life, and were complemented by interviews with elderly craftsmen, local architects, and community leaders. This was further supported by historical records, archival sources, and photographs of vernacular houses.

By narrowing the geographic and cultural scope to selected regions, this study provides a focused yet representative account of traditional Naga domestic architecture and its transformation under the influences of modernization and socio-cultural change.

The study examines how traditional architectural forms reflect social identity, cultural memory, and the intersection of spiritual beliefs with environmental practices. The geographical scope is focused on the aforementioned districts, which represent a diverse but regionally specific portion of Naga architecture. By concentrating on these areas, the research captures the nuances of architectural practices that have evolved over the past century, incorporating both traditional knowledge and contemporary influences.

x. Limitations of the Study

The scope of this study is inherently limited by several factors. First, the geographical focus is on a select number of villages in Mokokchung, Kiphire, Mon, and Phek districts, and the findings do not fully encompass the wide range of architectural practices across other Naga communities or the entirety of Nagaland. As such, the study may not fully reflect the diversity of Naga architectural traditions across the entire region, particularly those in remote or lesser-known villages.

Time constraints have also posed limitations, as the research did not allow for an in-depth comparative analysis between Naga architecture and that of other indigenous communities in India or Southeast Asia. The historical context of Naga architecture is complex, and the evolving nature of architectural styles and materials in response to external influences has been challenging to track comprehensively within the timeframe of this study.

A significant limitation arises from the loss of memory regarding rituals related to feast of merit. Many older architectural practices are no longer in active use, especially after the introduction of Christianity in the region, which has altered lifestyle and cultural practices. As a result, the transmission of architectural knowledge has been interrupted, and many traditional practices are either forgotten or considered obsolete by younger generations. This has been compounded by reluctance among some community members to share specific details, particularly concerning sacred or culturally sensitive aspects of construction. The study also faces variations in oral narrations, which further complicates the ability to gather consistent data, as different elders or informants may recall divergent practices or provide differing interpretations of architectural symbols and functions.

Another limitation stems from the nature of oral tradition itself. Much of the knowledge surrounding Naga architecture has been passed down verbally rather than through written documentation, which poses challenges for historical accuracy. Oral narratives can change over time and may not always reflect past practices with precision. Additionally, many crucial elements of traditional architecture have been lost due to

modernization, and some practices are no longer practiced, making it difficult to find fully intact examples for analysis.

Finally, the modernization of the region, including the introduction of modern construction materials such as cement, steel, and bricks, has contributed to a gradual decline in the construction of traditional Naga houses. These modern materials, while durable, do not harmonize with the traditional aesthetics or environmental considerations that characterized earlier building practices. As a result, traditional architecture is increasingly rare, and many examples of indigenous building techniques are no longer readily accessible for study.

Conclusion:

The present research has examined the domestic architecture of the Nagas as a multidimensional cultural phenomenon, interweaving material, symbolic, spiritual, and ecological threads. The various types of homes, their associated functions, and their deep cultural meanings illustrate that Naga architecture is more than a structural necessity; it is an embodiment of cultural memory and environmental adaptation.

Traditional Naga houses are rich repositories of knowledge—constructed not only to shelter but to embody cosmologies, social hierarchies, gendered roles, and ecological intelligence. Each architectural feature, from the hearth and granary to carved posts and gable horns, communicates stories of ritual, kinship, identity, and collective memory. These forms, far from being static, have continually negotiated change—whether through the integration of new materials, shifts in religious practice, or broader socio-political transformations. Yet, even as they evolve, the core values embedded in traditional architecture persist.

In the face of modernization, urbanization, and the growing disconnection between younger generations and ancestral practices, traditional architecture remains a resilient vessel of cultural identity. The thesis highlights how, despite the increasing prevalence of concrete structures and global design influences, elements of vernacular architecture are still retained or consciously revived as expressions of heritage and belonging. This

persistence reflects an on-going negotiation between continuity and change, revealing how architecture serves not only as a product of its environment but also as a strategic response to it. Moreover, this study underlines the importance of recognizing and documenting indigenous architectural practices—not merely as heritage artifacts but as dynamic systems of knowledge. The integration of oral histories, material analysis, and ethnographic insights has revealed the depth of architectural understanding within Naga communities, and the urgent need for its preservation.

In sum, traditional Naga domestic architecture offers more than an architectural history; it opens a window into the lived experiences, adaptive strategies, and cultural ethos of a people who have long shaped, and been shaped by, their environments. As this study has shown, sustaining such architecture is not just about preserving buildings, but about nurturing the values, memories, and identities they encode.

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Glossary

Apu-ki (Sümi)-Boys dormitory)

Arju (Ao)-*Morung*

Badze in Tenyidie and *Kilanmi* in Monsüng (Ao)- Space for communal gathering, center for cultural exchange, and storytelling.

Bali/Kalaka-Hand span from elbow to the tip of middle finger

Bao (*Poula*), *Bu* (*Khezha*), *Khi* (*Chokri*) *Tshü* (Angami)-Granary bamboo baskets.

Bazhü- Whole palm

Bazhü/Songmesen-Whole palm measurement

Bücü-Mini grain bamboo basket.

Buphruo-Measurement from the chest to the tip of middle finger

Buwu or *Bauhinia vahlii* (Common name: Maloo creeper, Camel's foot climber).

Chika or *Kechi*-Gable horn

Chümpo (Lotha)-*Morung*

Chütsü mezü- *Albizia procera* (koroï)

Echi-*Chimonobambusa callosa*

Echo or *Lichicho*, a symbolic wooden decoration erected in front of a house

Echü Ketsü Cho-Wooden *mithun* head carvings

Ekha- Full arm span from the tip of the left middle finger to the right middle finger

Ekhrinhi- Two girls singing seasonal and love folk songs with a member of 6-8 male members

Epfu – thump to forefinger.

Erü and *Ekhre*-Cane/rattan

Etsetshü- *Toona ciliata* (commonly known as Indian mahogany or toon)

Etsü- Large wooden brew barrels

Ili-ki (Sümi)-Girls dormitory

Kahu-Interior of a house

Kathi-Pickaxe/Mattock

Kavu Lashe-Bamboo ladder

Keburi- Shoulder

Keche- Waist

Kechi Chirhü with *Echü Ketsü Cho*-Feast of Merit offers 3 (three) times performing rituals and observing *genna* for 9 days in each feast.

Kechi Poti with *Echü Ketsü Cho*- Offer feast only 2 (two) times observing *genna* for 9 days in each feast.

Kechine kakruo chü mezü masü-Prosperity (Wealth).

Kechiru-Front porch/Varandah

Kechükenyü chüre kenyüe-Good health

Kedimene- *Chukrasia tabularis* (known as Indian mahogany or Chittagong wood)

Kediza-Outside platform

Kekhro mekwe or *Kezhi mekwe*-Owner of a house host peer group, sleeps together in one house numbering to 6 – 8 members

Kekhroke (Chakhesang)-Boys' dormitory

Kekhro-zhimi-Male and female peer group

Kemhi-Simple house

Kenyi or *menatsü*- A mixed natural additives.

Kenyü-Taboo

Kepho-*Dendrocalamus giganteus*

Kerhirho ketha chükelou chüe-Long life

Kesa-Chisel axe

Kethi-A specialized digging tool, is used for creating deep or narrow post – holes that cannot be effectively reached with broader tools like spades or pickaxes.

Ketsü Tsüzhi- Head (Centre point of human's head)

Kewe ketha kede chüe-Good omen be with us

Kezhike (Chakhesang)-Girls' dormitory

Khapvo rho-A measurement twine or string used to measure and secure bundles of *Imperata cylindrica* (thatch). (Measures 6 feet 5 inches and 5 feet 2 inches).

Khapvo-Whole bundle of thatch composed of 10 to 12 smaller bundles tied together

Khuba- Bamboo or cane basket.

Khuchi-*Bambusa balcooa*

Khulache kho-Small bamboo baskets serve for organizing utensils

Kichuki (Angami)-Boys/Girls dormitory

Kulachetshu- *Choerospondias axillaris* also locally called Nepali hog plum or *Lapsi*)

Kusa- A bamboo/cane trap.

Lekhake and *Maphu* – Kitchen and Hearth.

Lichira or *Thüpi khü-Hapidasa*

Menye-Shame

Mepube/Mozhobu/Sükruba – A traditional elevated platform in Chakhesang Naga villages, serving as a war tower, communal gathering space, and center for cultural exchange, storytelling, and rituals.

Meri-Axe/Adze

Metha-Fear

Methre chire-Large trays employed above the hearth for multipurpose functions such as drying firewood and storing grains like rice, millet, and maize

Methre-A suspended bamboo rack above the hearth

Metsigyeh-Seed-sowing vegetables

Mewitshü- Phoebe goalparensis (commonly called bonsum)

Mezhi Zhide- A war shield made of bamboo.

Mezhilo-Dendrocalamus hamiltonii

Morung (Konyak)-Boys dormitory

Nohdrang (Dimasa Kacharis)-Boys and Girls dormitory

Nyopvo – Indigenous bamboo basket.

Pakhiri- Knee

Pakhiri-Knee level

Pa-Large pounding table

Phezhü Kede Keleu Porha- One and a half feet or 1.5 ft.

Phezhü Kenhi-Both feet heel to toe in succession

Puthe- Inch/Thumb

Rehangki (Zeliang)-Boys dormitory

Releiki/Releuki (Zeliang)-Girls dormitory

Rho-Measuring twine

Sekrenye- A festival where father takes his son for a bath in the early dawn.

Shüdo- Heel

Sürhumdsü-Caryota urens L. (commonly known as the fishtail palm)

Techi- Sickle

Tenhichi/Aka ka-Finger span measurement thumb to index finger
Terükeder- Pure white worn shawl
Tokupatta-Commonly known as Palm leaves [*Trachycarpus fortunei* (Arecaceae)]
Tompu sompue-May riches never run dry
Tsherü- Smaller wooden barrel
Tshü Lashe -Wooden ladder
Tshüzhie- Wooden mallet
Tsüka- Stride measurement taking the length of a natural walking step.
Vabu-Mini pounding table
Vüso-Dendrocalamus strictus
Yo (Konyak)-Girls dormitory
Zathoche- A piece of wooden carved for carrying dao at the back.
Zathoke/Khrühuke-Wealthy household/Richest house
Zhikumi-Crowbar
Zhiti-Bambusa tulda
Zutho/Zitho, and *Zide/Thutshe*-Local brew