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Traditional Vernacular Architecture of Kumaon: The Case of the Hill Towns of Munsiyari, Uttarakhand

La arquitectura vernácula tradicional de Kumaon: El caso de los pueblos de montaña de Munsiyari, en Uttarakhand

A arquitetura vernacular tradicional de Kumaon: O caso das povoações da montanha de Munsiyari, em Uttarakhand

Keywords | Palabras clave | Palavras chave

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Património Cultural, Arquitectura Kumaoni, Sistemas de Conhecimento Tradicionais, Tribos Barpatiya, Padrões Urbanos

Abstract | Resumen | Resumo

Munsiyari is a region located at an altitude of 2,200 meters in the hilly state of Uttarakhand, India. The eponymous town is surrounded by twenty-two villages mostly inhabited by Bhotiya tribes, who once formed a community that traded with those crossing from India to Tibet, though this trade came to an abrupt end with the 1962 Sino-Indian war. Owing to the region's prosperity, the villages exhibit a very interesting typology of hill architecture. This architectural identity is also a manifestation of a geographical and cultural response to a difficult terrain. Our study was carried out as part of the preparation of a dossier for inventorying the Kailash sacred landscape with the aim of documenting the present state of the traditional vernacular heritage of the selected indigenous community for the UNESCO nomination of the wider region. That thorough documentation process was used as a means of analyzing local vernacular heritage and its current situation, and with a view to offsetting the rapid transformation of the past two decades.

Munsiyari es una región situada a una altitud de 2200 metros en el montañoso estado de Uttarakhand, en la India. La pequeña ciudad del mismo nombre está rodeada de 22 aldeas habitadas en su mayoría por las tribus bhotiya de la región, que en otros tiempos eran comunidades de comerciantes para aquellos que atravesaban India en dirección al Tíbet. Las actividades comerciales cesaron repentinamente en 1962, tras la guerra sino-india. Debido a la prosperidad de la zona, los pueblos presentan una tipología muy interesante de arquitectura de montaña. Esta identidad arquitectónica es además una manifestación de la respuesta geográfica y cultural de los habitantes de este difícil terreno. El estudio se realizó como parte de la preparación de un dossier sobre el paisaje sagrado de Kailash, a fin de documentar el estado actual del patrimonio vernáculo tradicional de la comunidad autóctona y presentarlo para la candidatura a la UNESCO de una región más amplia. El exhaustivo proceso de documentación ha servido como herramienta para

analizar las tradiciones locales y su situación actual y para ayudar a equilibrar la rápida transformación de las dos últimas décadas.

Munsiyari é uma região situada a uma altitude de 2200 metros, no estado montanhoso de Uttarakhand, Índia. Esta pequena cidade epônima está rodeada por vinte e duas aldeias que são maioritariamente habitadas pelas tribos Bhotiya da região, que foram outrora a comunidade mercantil para as pessoas que faziam a travessia da Índia para o Tibete. As actividades comerciais chegaram a um fim abrupto após a guerra sino-indiana de 1962. Devido à prosperidade nesta região, as aldeias apresentam uma tipologia muito interessante de arquitectura de montanha. Esta identidade arquitectónica é também uma manifestação da resposta geográfica e cultural dos habitantes neste terreno difícil. O estudo foi realizado como parte da preparação de um dossier para registar a paisagem sagrada de Kailash, com o objectivo de documentar o estado actual do património vernacular tradicional da comunidade indígena que foi seleccionada para uma nomeação pela UNESCO de uma região mais ampla. O processo exaustivo de documentação tem sido utilizado como ferramenta de análise das tradições locais e da sua situação actual, e para ajudar a equilibrar a rápida transformação das duas últimas décadas.

Introduction

Kumaon is one of the two regions and administrative divisions of the Indian state of Uttarakhand, the other being Garhwal. The region includes the districts of Almora, Bageshwar, Champawat, Nainital, Pithoragarh, and Udham Singh Nagar. It is bounded to the north by Tibet, to the east by Nepal, to the west by Garhwal, and to the south by the Tarai.

As part of the Himalayan range, the region has a predominantly hilly landscape and undergoes harsh weather especially in winter, when the temperature can drop below zero. Some of the mountain peaks within

Kumaon are among the loftiest of the mighty Himalayas. These peaks are also considered sacred by Hindus and are visited on religious pilgrimage: Nanda Devi at 7,817 meters, Badrinath at 3,300 meters, Kedarnath at 3,553 meters, Trisul Parvat, etc.

The people of Kumaon are broadly known as Kumaonis and most of them speak the Kumaoni language. There are various local dialects of Kumaoni across the various districts. Owing to its history and to the migrations over the years, the local population includes migrants from the plains of other Indian states and people of Tibetan origin who settled here in search of trade or as an escape from the wars of the plains.



Figure 1. Map showing the state of Uttarakhand and its regions of Kumaon and Garhwal (Uttarakhand Solidarity Network)

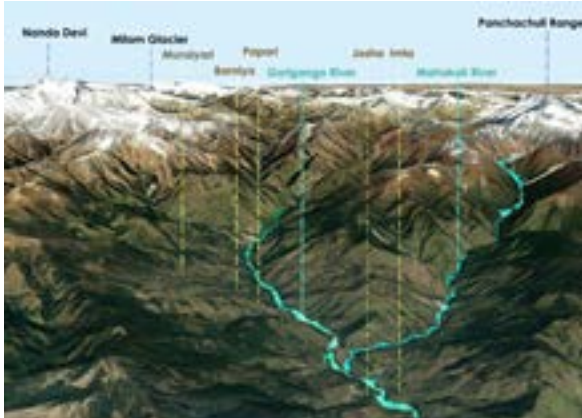


Figure 2. Three dimensional topographical diagram showing the major geographical features and villages documented

Munsiyari, as the collection of villages on the right bank of the Gori river are called, is in Kumaon district, inhabited by the local Bhotiya people as their winter retreat and storage site for trade with the lower sub-division of Kumaon. It is twelve miles from Girgaon, eighty-one miles from Almora, and eight miles from Lilam.

Munsiyari is strategically situated in the foothills of the Himalayas and was the winter home of traders with China traveling via Milam Glacier. The traders' caravans would cross from India into Tibet by the high passes of Utna Dhura and Kungribhingri La.

Methodology

As theoretical background, our research takes key points from various international cultural heritage documents that highlight the values of traditional vernacular architecture and heritage, among which we may cite: *Recommendation on the Safeguarding of Traditional Culture and Folklore* (Mexico, 1989), *Nara Document on Authenticity* (Nara, Japan, 1994),

and *Charter on the Built Vernacular Heritage* (Mexico, 1999). All of the above include vernacular architecture as a significant form of expression of traditional culture. These documents highlight the importance of such settlements as living cultural landscapes and this aspect must be taken into consideration in the development of conservation approaches. They also define built vernacular heritage as a direct response to the functional, social and environmental conditioning factors of a community and as the product of traditional building systems, crafts and techniques.

Our research project essentially created a database on the present state of the traditional vernacular heritage of the selected indigenous community. The study involved comprehensive documentation of architectural heritage along with a detailed account of the region's history, geography, culture, and people, and their current status as a community. The various forms of information collected were: oral surveys carried out in the field with people about their knowledge of building; a descriptive record based on inventories filled in on site with various details of buildings, their construction, usage and present condition, along with socio-cultural data collected so as to understand the region as a sacred landscape; a record of basic architectural sketches of floor plans, sections, and elevations of the buildings studied along with detailed documentation and drawings of representative examples of the types identified; a photographic record based on a sequential approach to buildings and consisting of images taken from views of them in their context and landscape, with their scale, interior and exterior elevations, and detailed images of the various construction details; and also the traditional construction system and present construction trends in the region.

To better understand the traditional vernacular architecture, buildings were studied in their geographical setting with their anthropological context, available resources and construction techniques. Our study also assesses the present state of buildings, the threats this architecture faces and its possible way forward.



Figure 3. Team doing documentation in the villages of Munsiyari

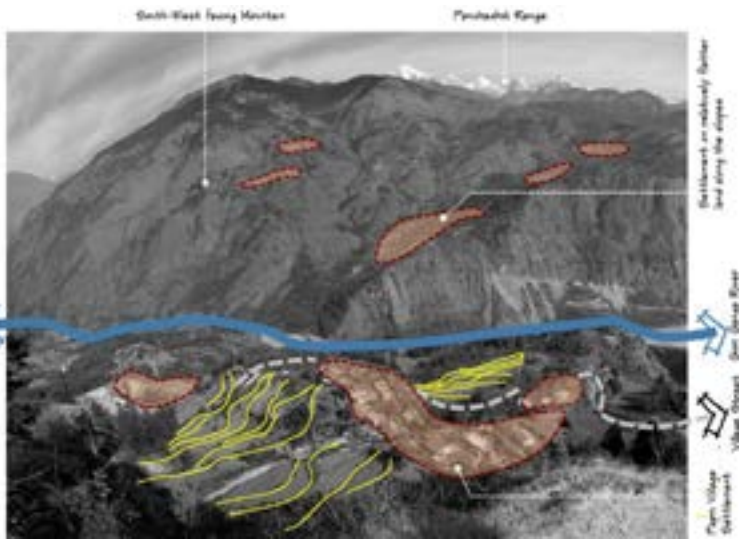


Figure 4. Analytical sketch showing the major geographical features and settlement, near Papri village

Cultural landscape of Munsiyari

The region of Munsiyari is in the upper Himalayan belt, with a temperate climate and high rainfall. It is covered with dense forest and scenic parcels of irrigated terraces. The outstanding features of the landscape are its numerous mountain ridges and the great valley of the Gori Ganga river.

The villages are located at the base of the mountains on comparatively flat land. The area around them has been converted into stepped terraces for growing rice, maize, vegetables, fruits, and other local cereal crops in the summer season, i.e. April to September. These villages also exhibit exemplary architecture corresponding to their culture and livelihood and which has helped them endure the adverse weather in these hills.

The region can be seen as a “continuing cultural landscape”, as it is still closely associated with the traditional way of life, and some of its natural elements retain powerful religious associations. It also exhibits significant material evidence in the form of residential architecture representative of its evolution over time.

The larger region covered by the study is an associative cultural landscape, i.e. the landscape is associated with Mount Kailash by virtue of a strong religious link, being a pilgrimage circuit connecting India, Nepal, and China. The Samuchi Kund near Milam, a pool in the Gori river upstream of the village, is another major sacred site. The whole region is dotted with religious sites with both natural and cultural properties. The natural element comprises various sacred peaks with distinct mythological associations, named after deities or religious tales, e.g. Adi Kailash, Nanda Devi, Trisul Parvat, etc. The cultural properties include the numerous Hindu temples, also significantly located below the various peaks mentioned above.



Figure 5. Conceptual diagram showing the historical route to Mount Kailash, the major geographical features and the international boundary of the tri-nation region

The Barpatiyas

The people of this region are locally known as the Barpatiyas, part of the wider trading community of the Bhotiyas. The Bhotiyas are also known as “Tibetan immigrants” in written records from the British period (pre-1947). They would have crossed the border centuries ago in search of good pasture for their cattle and their origins would have helped them to later become key figures in the cross-border trade between India and Tibet.

Bhotiyas can easily be distinguished from those inhabiting the region prior to their arrival in Kumaon by their physical features. As Edwin Felix Thomas Atkinson said, in the northern *parganas* (districts), the frame is shorter and stouter and the complexion comparatively fair; while in the south, the stature is taller, the figure sparer and the complexion sallow (Atkinson 1881: 122).

The Barpatiyas around Munsiyari practice Hinduism and their customs and rituals are informed by those of the indigenous population. They are basically worshippers of *Devi* (a female Hindu goddess), though they also worship other Hindu gods and celebrate all the major Hindu festivals other than *Holi*. In the *Devi* worship ritual, animal sacrifices are offered even today, and the animal is later consumed by the locals as *prasad* (offering).

A major ritual for the Barpatiyas is the *Khoda Pooja* (praying rite), in which a number of Barpatiya villages participate together. The *Devi* is carried on a *palaki* (palanquin) borne on participants’ shoulders from one village to another, including all the surrounding Barpatiya villages. Once the ritual is over, the *Devi* is instated in a new village where she will remain for a year until the next ceremony. Each village gets to keep the *Devi* every eight years. The deity is welcomed with great celebration, with a goat usually being

sacrificed. The ritual has also played a role in the layout of Barpatiya settlements, as there is always an unobstructed pathway laid out up to the house of the village head, where the deity will be instated for the year. This central house has a medium-size open courtyard which is the site of various religious rituals.

The Bhotiya tribe traded mainly carpets, blankets and woolen clothes woven by women, as well as items such as tobacco, tea, coffee, barley, and rice. There is also historical evidence of trade in agricultural equipment, copper products, and medicines. A key trading point was the Bada Haat, a big market in the present-day town of Uttarkashi working on the barter system, the mainstay of the local economy. When trading was at its height, from May to October traders would go to the high mountain villages of Milam, also known as their summer abode. They would move back to the lower, southern part of Kumaon for the rest of the year to avoid the deep snows and avalanches which often roll down from one or the other of the mountains in the vicinity.

Hence trade flourished until the Sino-Indian war of 1962, when it abruptly ended with drastic changes in the whole region leading to mass unemployment in many trading tribes. Today the menfolk have taken up other jobs in the nearby cities and the women look after their houses and farms.

Traditional vernacular architecture in Munsiyari is greatly influenced by socio-cultural practices, religion, climate and availability of raw materials. Culture and social practices have affected the patterns both of settlements and of individual dwellings. The villages are hamlets of ten to fifteen houses strategically spread along small portions of flat land in the mountainous terrain. To fully apprehend their architecture, it is important to understand the villages in their setting and how natural resources have shaped the vernacular style.

Figure 6. A Barpatiya woman in her thirties

Figure 7. A sketch showing the relation between the Temple and, in the background, the Nanda Devi peak

Figure 8. Traditional woollen thread making



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Setting of villages and settlement patterns

The Barpatiya villages in Munsiyari are sited in the landscape so as to make optimal use of the available flat land and direct sunlight and to avoid direct wind, while keeping in view the ownership of a source of fresh water. So the siting of these villages may be understood by taking a look at some physical aspects.

Given the harsh winters, sunlight is crucial, so villages are always sited on the sunniest slopes. Next comes the availability of a source of fresh water (*dhara*), i.e. glacier water from higher slopes. These water sources are

also related to religious activities in the villages and are considered sacred.

Due to the steep terrain and rocky character of the newer Himalayas, there is a scarcity of comparatively flat land for habitation. Stepped terraces are usually cut into the mountain slopes and then carefully dammed with stone walls and vegetation as reinforcement to prevent erosion. Such terraces require a less rocky hillside with soil for cultivation. As the Bapatiyas are highly dependent on their own produce for their subsistence, alluvial soil is particularly appreciated.

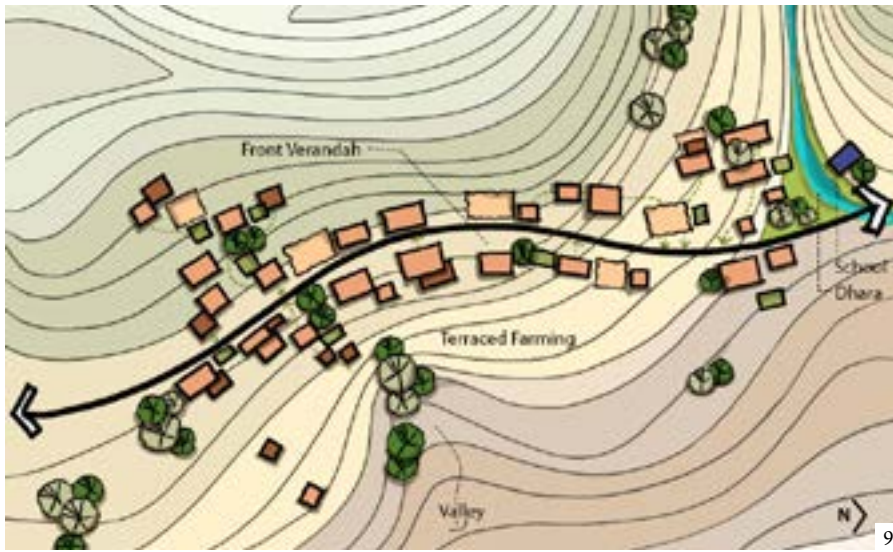


Figure 9. Conceptual sketch showing a Barpatiya village in its setting

Figure 10. View from the village entrance

Figure 11. Picture showing the vicinity of farm lands from dwellings

Figure 12. A view of Harkot, a Barpatiya village

Figure 13. Barpatiya residence in its setting



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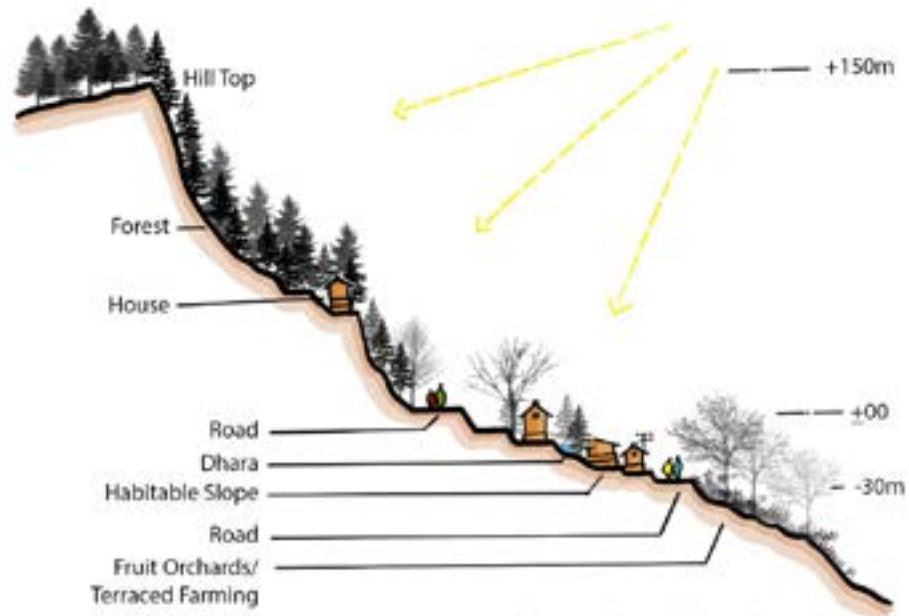


Figure 14. Basic section showing various key elements of a village in Harkot village, Munsiyari

As for the villages themselves, there are two main types of settlement identified in this region:

The linear pattern of settlement is common in the lower Himalayas. This involves some fifteen to thirty houses along the contours of the hillside. Since there is very little flat land, lateral growth along one contour line is favored. The villages of Harkot, Barniya, and Papari are examples of this category.

The nucleated settlement pattern is seen mostly in the upper Himalayas. These settlements are mainly determined by water sources, around which a cluster is formed. These clusters are also segregated according to the caste system, leading to sub-clusters of different castes at short distances from each other. Each cluster comprises no more than four

to six households. Examples of villages in this category are Imla and Josha, at an altitude of 2,500 meters.

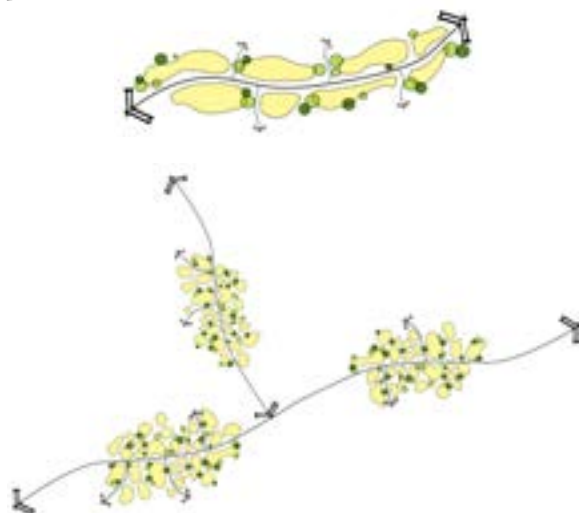
Many settlements are planned around a central axis, normally a ridge. The houses are dotted along the ridge linearly, connected with the central pathway running through the village. This axis is commonly a stone causeway about two feet wide from which small raised paths lead to the houses. The causeway has a path for cattle (called *guna*) at a lower level than the human walkway (known as *bat*). This level difference also facilitates rainwater runoff. Another common feature of these settlements is the *gadhera*, or wastewater channel.

Architecture

The architectural typology in these villages is limited to residential units. The shrine is located in the house of the village head, usually also the oldest house. This is commonly the central node of the settlement and exhibits detailed wooden carvings and rich ornamentation. There is also a shrine located at the entrance to the village to guard the villagers from harm.

Given the cold and dry climate and the extreme winters, openings are small and few in number so as to reduce the flow of cold wind, and the open spaces such as the verandah and *patagan* (front court) are designed to capture the sun's warmth. The presence of livestock on the lower floor also helps maintain warmth in the house. The sloping roofs help shed snow in the winter and prevent water accumulating during the monsoon. The locals also use a native grass called *selum* to cover the sloping roof. This helps regulate the warmth inside the house and also facilitates the melting of snow in winter.

Figure 15. Sketch plans showing a linear and a nucleated settlement patterns



Each Barpatiya house (*ghar* or *kur*) is entered from an open verandah (*majhyal*), which if open is called *chajj* and if closed is known as *chak*. It is located on the first floor and runs along the front of the house, serving as a multipurpose space for drying seeds, keeping cattle, washing, etc., enclosed with a low front wall.

The rear of the house, not facing the sun, is usually sealed, with no windows or other openings.

There is usually a lower terrace in front of the verandah where vegetables and fruit trees are planted.

The lower story (*goth*) is used for keeping cattle. In houses with more cattle the *goth* may be a separate one-story house or annex connected with the front open area and also having a slender verandah (*gothmal*).

The first-floor verandah has windows overlooking the courtyard. The number of windows shows the scale of the house and the window ornamentation – usually delicate latticework creating a screen-like effect – is linked to the dwellers' prosperity. There are three types: *ekdari*, with a single opening, or single-shutter window; *dodari*, or double-shutter window; and *tibari*, with three shutters. Dwellings with a *tibari* usually house the headman or some other personage.

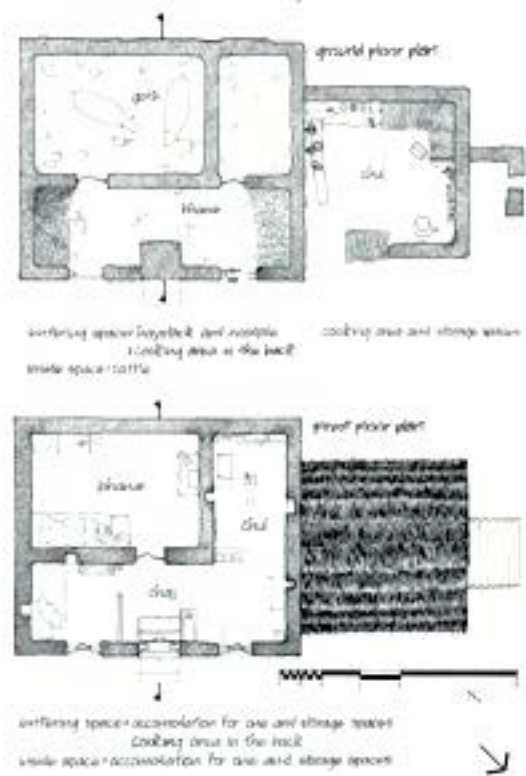
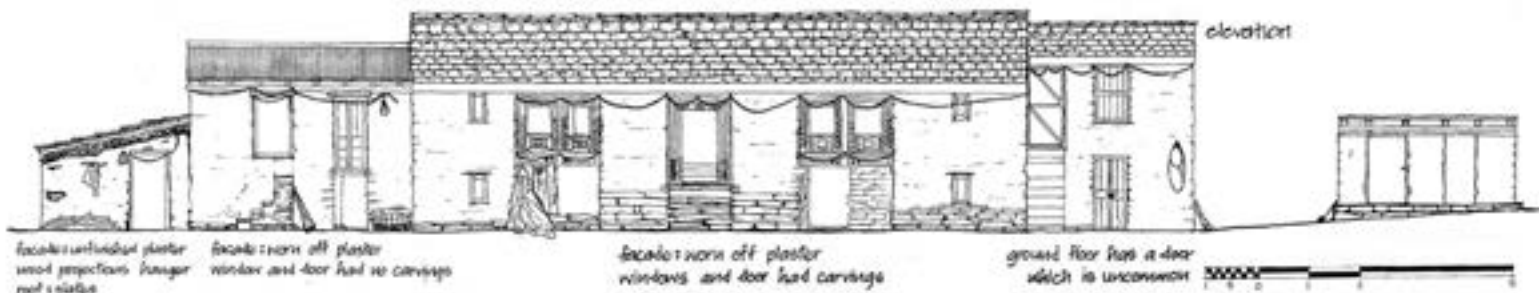


Figure 16. Ground and first floor plans of a Barpatiya dwelling showing living spaces

Figure 17. Photographs showing the facade and window details



Figure 18. Measure elevation drawing of a Barpatiya house

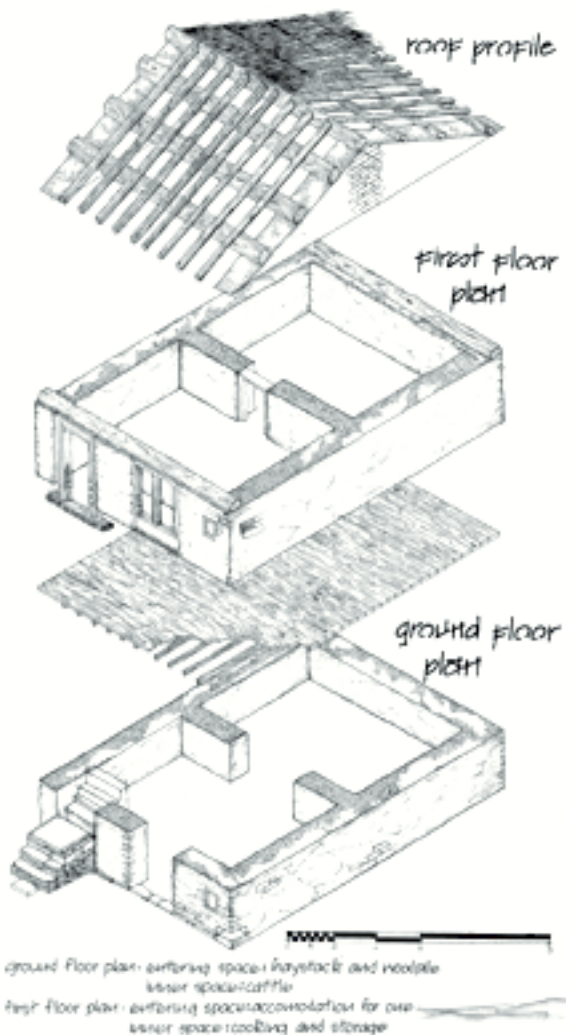


A door is called *kholi*; a room, *khand*; the front reception room, *tiwari*; the raised wooden place for sitting in the evening, *chaunro*; the space behind the house, *kuriya*; a row of houses together, *bakhal* or *kholo*; and a group of houses in a separate cluster, *tand* (Atkinson 1881).

Individual dwellings have a shallow stone foundation, one to three feet deep, commonly of large stones extracted locally; a rubble-masonry wall made of slate (*pattar*) and coated with mud plaster (made with red soil); and the roof (*pakh*) is a timber truss finished with local slate. Mud is mixed with cow dung and other organic additives for thermal insulation. The flooring is made of wooden planks supported with wooden trunks as beams and then smeared with a paste of cow dung and clay mixed on every second or third day. The floors of rooms are covered with a rug of stitched jute bags and a bamboo mat. Doors and windows are commonly made of *loheta* and *surai*, and in some cases of *kedar* (deodar cedar), sal tree, tun wood, or rosewood.

Figure 19. Drawing showing a blow up view of typical house of the region

Figure 20. A Barpatiya house in its setting showing the *chauk* (courtyard) in front and the *kuriya* (space behind the house)



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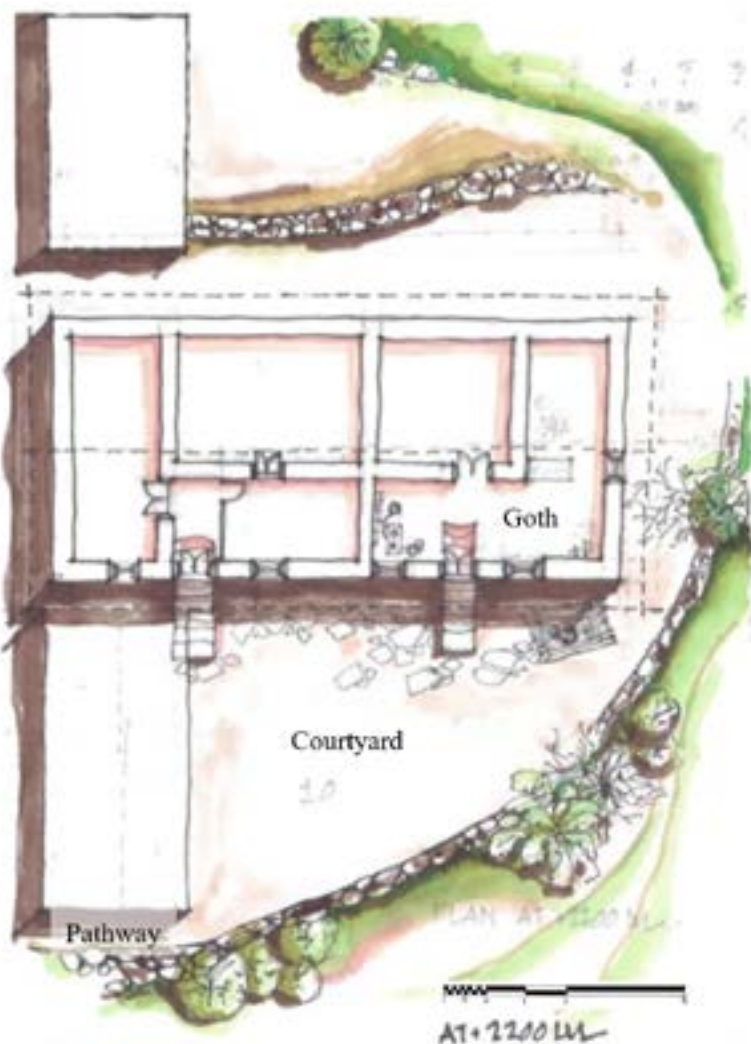
The construction of these dwellings was traditionally a family and communal affair. Members of the extended family and community members usually lent a hand with the building.

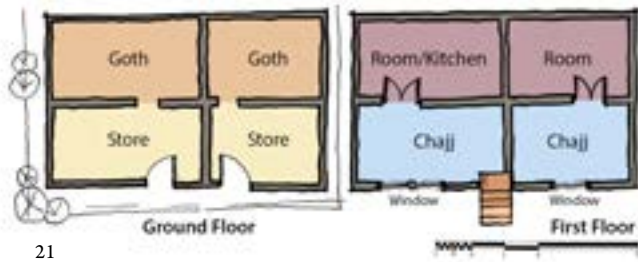
Traditional vernacular dwelling typology

We may categorize the traditional dwellings in four major types according to their scale and spatial division. These types are based on the house plan and only the fourth type, belonging to the village head, may be linked to a particular economic status.

The first type is the most common form found in our study. Its width is about 1.2 times its depth. The house is divided on both floors into four equal parts. In this plan, all of the ground floor is used for keeping cattle, whereas the first floor has three multipurpose rooms and a kitchen-cum-granary.

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Figure 21. Single line sketch plan of first typology of Barpatiya dwelling

Figure 22. Single line sketch plan of second typology of Barpatiya dwelling

Figure 23. Single line sketch plan of third typology of Barpatiya dwelling

Figure 24. Single line sketch plan of fourth typology of Barpatiya dwelling

In the second type, the width of the house is again about 1.2 times its depth. But the plan is divided into two unequal portions. The front portion occupies a quarter of the depth of the house and the rear portion the other three quarters. The ground floor has a *goth*, divided for cows (wide *goth*) and goats (narrow *goth*). The first floor has a large room along with a front sitting area for entertaining guests (the *chajj*), and a kitchen space to the right.

In the third type, the width of the house is about 1.5 times its depth. Its plan is also divided into two unequal portions. The front portion occupies roughly a quarter of the house's depth and the rear the other three quarters. The ground floor consists of three *goths* of equal width. The first floor has a long *chajj* and a grain store in the front and two rooms in the rear. To the right of the house is an annex housing the kitchen on the ground floor and with space for an additional room on the first floor.

The fourth dwelling type is that of the most prosperous families. The house is about twice as wide as deep and is often richly decorated with wood carvings on its façade. The ground floor is divided into three equal *goths* and the last one on the right is used as storage space. On the top floor, which follows the same layout, there are three rooms with a space to the right for a kitchen. The front portion in this house is also the *chajj* (the guest parlor) and there is a storage space in the right-hand corner. In most such houses there is another room where the village deity is kept.

Wooden carvings

Oral history has it that woodcraft was brought to the Kumaon hills by migrants from Gujarat and Saurashtra fleeing the wars of 1778-1818, who then settled in these parts with their knowledge of woodcarving (Walton 1990: 79).

The woodwork and masonry employed are richly and skillfully carved in the principal houses. In olden times, wood carvings on the façade were seen as symbols of the dweller's prosperity.

The documented villages show a rich variety of woodcraft in their built forms. These rich wood-carving details vary but contain similar motifs, such as plant designs and also at times a depiction of a Hindu deity in the upper middle part of a door. Some decorative motifs are also seen on fascia boards and even on roof eaves.

Examples of carefully detailed traditional woodwork can still be found in Bhotia villages in the Johar, Vyas, and Chaudas valleys, and in villages such as Milam, Pongu, Garbyang, Gungi, Sosa, Sidang, Nabhi, and King, with a different character from that of lower regions. The woodwork in these villages has more motifs with Tibetan, Nepalese and even



Figure 25. Carved wooden window from a house in Harkot village, Munsiyari

British influence, largely as a result of exposure to cross-border trade and exchanges of goods up to the 1960s.

Carvings were traditionally executed by the *shilpkar*, who in most cases formed a community within the village. Sadly, not one person with this skillset was encountered during our study in the villages around Munsiyari. These traditional skills are now looked down upon, since there are not many employment opportunities for them in cities and towns, and little by little they are disappearing.

Current situation

The vernacular architecture of this region has been undergoing rapid transformation, especially in the past decade. The advent of roads and piped water supply, changes in construction materials, extensive migration to cities, etc. are a few of the many factors leading to an almost irreversible change in these villages and their settings. As the vernacular style is not just the built form but also its geographical setting and anthropological context, depending on the available local resources and construction techniques, a loss in any of these aspects is equally critical.

There is not much dialogue happening about balancing the old and the new. Currently in India there is no legal body

or guiding document to support the necessary conservation of the unique architectural expressions of each region in its distinctive setting. Instead, the main trend is one of vernacular “museumization”, basically turning these living cultures into relics.

Conclusion

Our study shows that there needs to be a strategy to monitor transformation in such a way that future development activities benefit from the traditional knowledge system built up in this region.

In particular, at least the following research areas should be explored in depth in order to take advantage of that knowledge: These traditional dwellings have withstood many earthquakes without substantial damage, and so the construction system’s seismic performance should be studied. The thermal insulation properties of the traditional dwellings is also exceptional, so an in-depth study of building materials available today and liable to achieve similar properties should be conducted.

Moreover, retrofitting rather than demolition and reconstruction should be promoted. As the original materials that these houses are made of are becoming scarce, it is important to develop models for integrating modern-day amenities into the traditional structures while preserving their character.

But the model for transformation must emphasize the empowerment of locals, especially women (as the sole breadwinners in most of these communities). New solutions would draw on materials that could be sourced locally so that these activities could become a means of skill development and revenue generation for the locals.

Acknowledgements

This text summarizes extensive research undertaken as part of preliminary data compilation for mapping of parts of the Indian side of the Kailash Sacred Landscape undertaken by Wildlife Institute India, Dehradun, in 2015-2017, and Dehradun Institute of Technology (DIT University). The Dehradun Institute designated a team of faculty members and students and visited Munsiyari and some neighboring villages in the Pithoragarh district in December 2016.

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He has been involved in designing plans for various areas in the Ha Long Bay UNESCO Heritage region and in developing urban design strategies and regulations for many other master-planning projects in numerous natural and social contexts. Navanil has been part of the core research and design team for developing Child Friendly Neighbourhood Guidelines along with BVLf for the Government of India.

Biographies | Biografías | Biografias

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Navanil Chattopadhyay

Navanil is specialized in the field of Urban Design and Architecture. As an urban designer with the global practice BDP he has been part of many national and international urbanism and research projects.