

# Changing Pattern in Santhal Architecture: Case of Satar Village Morang

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## Abstract

Nepal is poor and developing country but rich in cultural context. The Santhal is one of indigenous community with rich in cultural practices. Due to result of modernization Santhal identity are diminishing so study on this vernacular architecture is essential. Thus, detail study of architecture of Santhal architecture is needed in order find out the different attributes like social, cultural that shapes their architecture and changing pattern of architecture. As it can be seen that the houses in this locality are changing from green to grey it not only diminishes architecture but also kills the social cultural practices which ultimately result to diminishes of their identity. It shows the necessity of study in this topic as study of vernacular architecture focus on use of local materials and resources, which are relatively energy efficient and sustainable so study of this architecture is very essential, as exploration on this architecture is very limited in Nepal. This study sought to examine the changing pattern of Santhal architecture of satar village of Morang district both from primary as well as secondary source. The results of this study show that the traditional Santhal houses are changing from temporary structure with single room dwelling to today's modern RCC structure. The most of Santhal traditional house is based on courtyard planning the courtyard is used for several socio- cultural and religious purpose. Similarly, verandah spaces are present in every house for multi-functional use. The change from public space to private space also stems from the culture and customs of these regions. Thus, it can be concluded that Santhal architecture has been changing from cave dwelling to today's modern RCC structure. Thus, integrate study of such vernacular architecture is very essentials.

## Keywords

Modernization, Santhal architecture, Courtyard planning, Transformations, Vernacular architecture

## 1. Introduction

Nepal has various buildings practices across its vast and diverse geographical area. They are rapidly changing in relation to the built environment due to globalization and urbanization and the tremendous growth of modern building techniques and systems [1]. Considering these changes caused by economic conditions and social obligations, we need to understand the concept of indigenous architecture and its transformation. The most important factors driving transformation are changes and advancements in technology, telecommunications, industry, and political scenarios. All these aspects influence the economic and social development of individuals and lead to changes in the built environment.

In colloquial discourse, the terms change and continuation are constantly being considered and

questioned. More recently, it has been observed that transformations have occurred that have led to the inappropriate use of locally available materials, sometimes leading to the global building materials and construction techniques. It is also important to note that indigenous settlements are also changing as they witness socially, culturally, economically, and the political context [2]. However, the current need for understanding and native observation means adjusting for changes to ensure continuity. Processes and factors leading to these changes are of primary interest and a good indicator for studies on change. Needless to say, there have been obvious changes in the physical properties of spaces built in indigenous regions of Nepal. They are influenced by society, culture, economy, and political changes [3]. Nepal is made up of diverse identities based on religion and caste system. Different groups consist of their own

native architecture, which also reflects their identity. Among them, the Santal or Satar community is a unique ethnic group in eastern Nepal. Despite having a small population of just 0.19 % of the country's total population, they have a rich culture and hunting habits. Thus the study focus on changing pattern of Santal architecture and social, cultural and environment role behind its changes.

## 2. Methodology

The research was carried out using case study methodology. Paradigm used post positivist paradigm to examine the changing pattern of Santal architecture which consist of both qualitative and quantitative analysis. Observation was carried out at site for quantitative method while for the qualitative method, photographs and maps were studied.

The research use to measure the people's opinion, and the direct observation method for interpretation of their transformation. The primary data is collected through direct observation, questionnaire and interviews. The secondary data through report, article, book, magazine etc.

## 3. Study area: Satar village Morang

Morang district is located in the province No.1 in the east of Nepal. This is a district of Outer Terai. It is bordered by Bihar, India to the south, Jhapa to the east, Dhankuta and Panchthar to the north, and Sunsari to the west. Morang has one metropolitan city (Biratnagar), eight municipalities and eight rural municipalities. Morang is the central industrial area of the eastern region of Nepal. The primary survey was conducted in Santar Village, Ratwamai-6, Morang, Nepal. It is located 23 km south of Urlabari Morang and 1km from Sauntha Chowk. It is just 100m inside from main highway. For the study 7 different house of Satar Gaun is chosen based on materials and social status.

### 3.1 History

The history of permanent settlement is related to the myth of Santal's origin. According to the records of mythology of the tribe by colonial anthropologists, the tradition of Santals is traced back to their origin from a wild goose created by God which laid two eggs. From those eggs sprang Pilchu Haram (male) and PilchuBurhi (female) born and lived in jungle cave.

They gave birth to seven boys and eight girls. As they grew old, boys approached girls they got married as their parents also thinking of increasing population. But today's Santal community don't accept marriage between same clan. The Population of Santal raised so they had to build a house as it is very difficult to adjust in cave [4]. Then primitive house Jhenti Orak and Kumbha Orak were prepared clearing the jungle (tandi) for temporary residence made of a wooden stick and the leaves of either palmilla or date palm leaves. Later started to built, mud huts for permanent settlement. The first record of Santal settlements was found in the Chotanagpur plateau from where they migrated to different countries [5].

### 3.2 House and Settlement

Santal people usually live in separate villages arranged in a street pattern, each with 50 to 100 inhabitants. Separate villages are preferred, but different groups may live more or less separately in the vicinity of mixed village or town tribes or sub-castes. Most of the settlements are located near to water resources where they perform different rituals. The settlements near the main streets are organized in linear patterns. Therefore, their houses are built on both sides of the street. Santal's house are never isolated because they intend to live in groups [6].

### 3.3 Varieties of Santal dwelling studied from past to present context

#### 3.3.1 Cave dwelling:

When the number of Santals is less, they lived in caves (Dandhor) or on tree trunks and hunt and collect their food from forest. As the population began to grow, the caves became insufficient for habitation, so the Santals began to build shelters from trees.

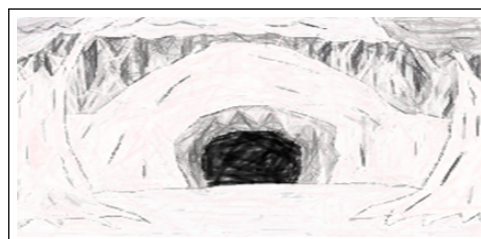


Figure 1: Cave dwelling of Santal

#### 3.3.2 Cottage

Cottage is primitive building form, which erected across agricultural grounds to keep grains. Cottage is

built for a temporary settlement purpose which is most primitive form of settlement structure. It is now built beside agricultural land for crop protection, as well as temporary dwelling before the construction of permanent hut. It is built in a very straightforward manner. Two bamboo poles are buried on two sides at first which is known as as Khunti. The entrance to the hut are called flutter. All of these poles are tied tightly with rope. Then, on both sides of this structure, use palm leaves or rice straw [7].

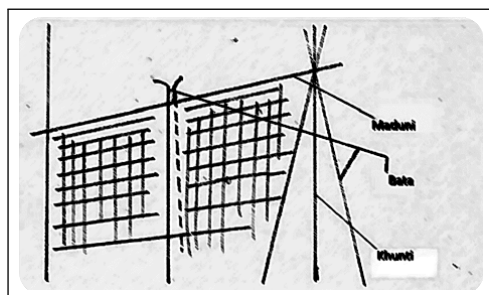


Figure 2: Santal Cottage dwelling

### 3.3.3 Jhanti Orak

Jhanti orak is the primitive Santal house which is rarely found in present scenario. But still in certain area it is used as grains store or animal sheds. Jhanti orak is entirely made of bamboo stalks with narrow entrance and no openings, as it consists of ventilation through the walls. It has the shape of a cube. Generally, four trunks of Matcom (Mahua) or bamboo are buried in the four corners. These trunks are then connected by bamboo stalks at the top and tied together with ropes or fibers made from tree stalks or verbena leaves. Another bamboo trunk is tied to the central part. Jhanti orak was built for temporary purpose. It is also called Sakam Orak (hut from leaf). The width of Jhanti orak is 13 feet and the length of 6 feet.



Figure 3: Santal Jhanti Orak

The interior of the house is used for sleeping and

storage purpose. Cooking is done outward in open space. There is no sanitation and drainage systems in huts. The space is so small that families can hardly afford to stay in a hut. In general, male members sleep outside the hut and female members sleep inside the hut [8]. As the Santal people worship natural resources rather than the idol of god small area in interior is separated for worshipping.

### 3.3.4 Kumba Orak

Kumba turned out to be the next type of structure developed by the Santals. It was built with better and sturdier building materials such as mud, grass mixed with murom (gravel) and sal logs or bamboo poles used for columns and beams. One side of the structure is held higher to form a simple pitched roof. Kumba has the best force to dry up the wrath of nature. This change coincides with community towards a less nomadic and strated to maintain community village life. Today it is still prevailing as temporary house to stay before making permanent structure [9].



Figure 4: Santal Kumba Orak

### 3.3.5 Mud House with Thatch Roof

The most of mud house is of member of village council. The walls are made of mud plaster with cow dung, mud and husk. The roof consists of thatch roof of straw. Separate structure for animal shed, kitchen and sleeping. The interior of house consists of two room one -storage and bedroom next room with worshipping, storage and sleeping. Other separate structure is also built for the other animal like Dangra or Gei Gora for cowshed, Sukri Banda for pig etc. It lacks proper ventilation and lighting and found less in number. The small portion is separated in bedroom in order to create small worshipping area. Front verandah space is created as resting as well as socialization space in the community. The courtyard space to carry ritual and for gathering.





Figure 5: Plan of Mud house with Thatch roof

### 3.3.6 Mud House with C.G.I Sheet

The most house of Santal settlement in core village is made up of mud with C.G.I sheet. The walls consists of mud plaster with cow dung, mud and husk. The roof consists of CGI sheet in main house and thatch roof of straw in kitchen and animal shed. The small ventilation is created on verandah space which is use to view various ritual celebrated in village.



Figure 6: Santal mud house with CGI Sheet

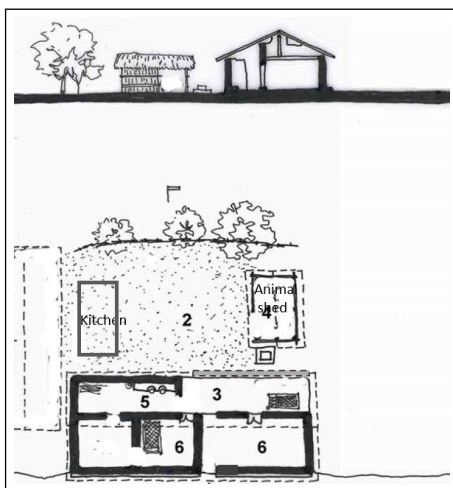


Figure 7: Plan of mud with CGI Sheet

Comparatively larger wooden window is used for lighting and ventilation purposes. The guest room is designed in outer verandah part. The Courtyard is used as place for performing various ritual and also socialization space. The small portion is separated in bedroom in order to create small worshipping area. The frontal verandah space is created as resting as well as socialization space in the community. The courtyard space to carry ritual and gathering.

### 3.3.7 RCC House with C.G.I Sheet Roof

The RCC house With C.G.I sheet roof consists larger rooms. The material use for construction of house is cement, brick. It consists of courtyard planning, small mandap is presence in courtyard to perform various rituals such as birth ceremony, marriage ceremony etc. RCC structures consists of comparatively large window and ventilation. The frontal Verandah is used to view different rituals and also used as resting space.



Figure 8: Santal RCC house with CGI sheet

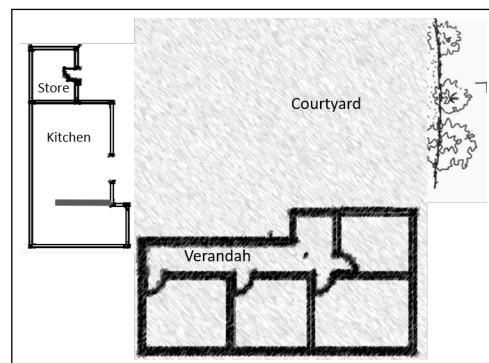


Figure 9: Plan of RCC house with CGI sheet

The interior of RCC structures consists of modern decoration. The small portion is separated in bedroom in order to create small worshipping area. Front verandah space is created as resting as well as socialization space in the community. The courtyard space to carry ritual and gathering. The head of village (majhi) house is also made of RCC structures his house also represents his status as his house is

comparatively larger than other in Santal core settlement.

### 3.3.8 RCC Structure: Modern Houses

The modern house are basically made at outer core area. The house is made up of RCC frame structure. The house basically consist of one to two floors. The courtyard planning is absent in the modern house instead found passage system house. The house consist of more number of larger room with larger window for sufficient lighting and ventilation. There is no separate structure for the kitchen but consist of separate structure for the animal shelter. The small space in sleeping room is provided for worshipping god.



Figure 10: RCC: Modern Structures

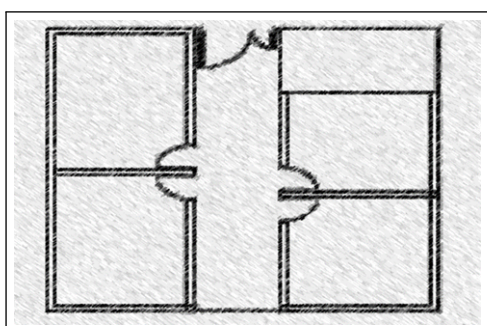


Figure 11: Plan of modern RCC Structures

## 4. Finding and Discussion

### 4.1 Reason for changing pattern architecture

#### 4.1.1 Ecology

Ecology plays a major role in the design of settlements. The construction of Santal's house depends on the availability of natural ingredients. Santal usually builds settlements where proper soil is easily available and where dyes and materials for flattening walls and floors are readily available. Santal uses natural white and black tonal gradients cow dung,

shells, clay and bamboo as a building materials. But in present context the easy availability of such types of material is less which also the reason of change in material culture of Santal architecture.

#### 4.1.2 Social aspects of Santal architecture

The formation of the classic Santal settlement does not follow the mainstream courtyard type house pattern. It consists of individual courtyards and forms a linear pattern of shared outdoor spaces. This common space conveys a sense of territorial and clan identity. Santals society are a good example of how social structure and values can influence architecture as they give more prioritize to social life than individual life. The shape plan of the family is inspired by the general concept of a community. However, in present scenario people started to focus on individualistic life than that of social life so they started to build bigger RCC modern house due to various reasons like increase in economic and educational status. Similarly, the change in religion is also the reason towards change in architecture.

#### 4.1.3 Cultural aspects of Santal architecture

The traditional knowledge system of indigenous peoples is an important cultural aspect of all ethnic groups. Over the years, the ethnic community has maintained their understanding. They rooted their cultural customs through cultural expression. It is preserved in its folk techniques, material culture and aesthetic expression. Courtyard is very important in Santal architecture as it gives a unique cultural identity in community. Throughout the year, courtyard is a place of learning and practice for different people, performing arts such as dance, singing, and community theater. This is, Community-based for religious and craft training. Santal house consider as a excellent source of both tangible and intangible cultural value. But due to youth of Santal decrease in interest towards own culture and costumes they start to build house without following the protocol of Santal architecture.

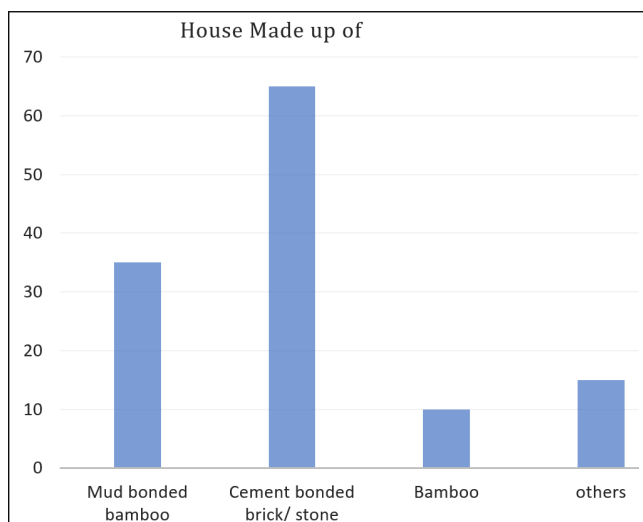


Figure 12: Building materials of Santal dwelling

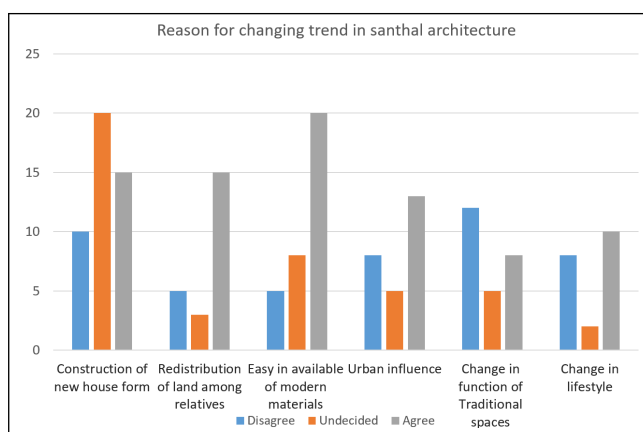


Figure 13: Changing trends in Santal architecture

As graph shows most of the house in Santal architecture in present context is made up of RCC structures. The main reasons for the changing trends of vernacular Santal architecture is easy availability of modern material.

### 5. Conclusion

Santal is indigenous community which have own vernacular architecture. Santal consist of own unique culture that shapes their architecture consists of own culture, customs, traditions, and way of living. Among many other things uniqueness is demonstrated in the manner they construct and embellish their homes, which collectively showcase their expert workmanship. Their architecture engages with the social, environmental, religious, cosmological, and feeling of community while also displaying an appreciation for their traditions’ aesthetics and

practicality. But due to modernization and urbanization the pattern of Santal architecture has been changing. The traditional mud house is changing to modern RCC structures. It shows that it not only diminishes form of architecture but also diminishes identity. Modernization led to build the house of concrete and also change settlement pattern from colonial to individualistic society. Understanding of different attributes like social cultural attributes in order to understanding their identity is very essential.

Due to the loss of traditional knowledge brought on by machinery, modern materials, and construction technology, local craftsmen are in high demand, and young people are not inheriting ancestor knowledge, which result in the complete eradication of some techniques and rituals related to the built environment. People’s social and cultural values are directly impacted by changes in the built environment. In certain ethnic groups, a person’s home symbolizes their social standing: the village chief’s home is identified by more details and a bigger floor plan description. These qualities have been destroyed through modifications to traditional and indigenous elements. The perspectives, lifestyles, and native shapes and designs of people are represented in houses. Thus, proper rules and regulation have to be developed to preserve vernacular architecture of Santal people. The rules and regulation have to be made in such way that enhance the livability of community and preserve their form of architecture. The material uses in modern house most resembles traditional form and architecture. Such as use of tiles in roof, abode wall, stabilized mud bricks etc. Such a model would be extremely helpful in finding a lasting solution, as the culture and worldview of the community would be a primary concern in developing such an alternative. Furthermore, as the ”indigenous” and traditional wisdom of the Nepali communities will be used to obtain an architectural solution, it will contribute to the sustainable development of the people and the creating such a facility will also be profitable and ecological. Furthermore, current research has shown that with a minimum resource base of, the people of Santal can gain maximum profit building their homes and settlements by conserving the ecosystem and it describes the traditional wisdom involved, which will also be useful in planning alternative development in which the community is a part of that development.

**Table 1:** Social aspects of santhal dwelling

Aspects	Values/ Custom/ Belief	Spatial pattern	Changing pattern and reason
Social aspects	Community identity Age	A compact village is formed near the water resources. • Different painting in santal architecture • Courtyard planning	Decreasing the size of courtyard, absence of painting in RCC structures due to youth having less knowledge of their culture and tradition
	Family values	Sense of territory defined by community spaces bounded number of trees	Lack of trees due to deforestation
	Age and Gender	Compact planning	Scattered planning as people moving towards individualistic society
	Social Identity	Dedicated sitting position for elderly people on the verandah	Absence of verandah in modern structure
	Order and discipline	Outdoor, semi-outdoor, and inside space hierarchy • Linear and central spaces	Started to build individual boundary spaces
Environment aspects	Land utilization	Compact Settlement plan • Mud floor, enough outdoor space	Scattered settlement pattern with lesser outdoor space Due to increase in value of land
	Passive Thermal solution	Walls made of mud plaster	Concrete structure due to decrease in availability of local material
	Ventilation and wind flow	Small windows on the gable side for ventilation	Larger window for cross ventilation and lighting
	Earthquake resilience	Lightweight walls • Single-storey structure • Thick mud wall to support lateral loads	RCC structures with multiple storied construction to follow present protocols Due to heavy weight less earthquake resilience structures
	Natural lighting	Smaller window for natural light	Larger window for lighting and ventilation
	Water and green	Large and extensive sloped roof for preventing precipitation • Large semi-outdoor area for managing driving rain. • Green plants on the outskirts to stop erosion	Flat roof in modern RCC structure
	Consumption of resources	Multi functionalism of space • Use of regionally relevant materials	Less share space as people prefer more individualistic life individualistic life
Cultural aspects	Traditional knowledge system	Traditional Santhal house shape as a symbol • Focus on performance space. • Space for handicrafts, painting • Agricultural elements such as cow sheds, Granary	Due to less traditional knowledge system house lack performance space, space for handicrafts and no painting is seen in house.
	Cultural Practices	Open courtyard spaces function for dance, handicrafts.	People started to focus in individualistic life which diminishes faith to culture and religion so small or no courtyard space
	Cultural education	Construction techniques goes from generation to generation	Lack of knowledge of traditional construction, pattern of santhal Architecture is changing
	Crafts making	Vernacular construction technique emphasizes the richness of the language culture	Lack of such knowledge change the pattern of Architecture

**Table 2:** Changing trends in santhal dwelling

S.N	Component	Cause	Effect
1	Construction Technique	Difference in material structure	<ul style="list-style-type: none"> <li>• Shortage of timber</li> <li>• Changing market with availability of new types of building material</li> </ul>
2	Spatial Organization	Increase in number of rooms Semi- closed house	Require more privacy
3	Material	Wall: Use of concrete blocks and brick	<ul style="list-style-type: none"> <li>• Modernization</li> <li>• Shortage of Timber and Bamboo</li> <li>• Changing market with availability of new types of building material</li> </ul>
		Window Glazing	<ul style="list-style-type: none"> <li>• Preference for bright interiors and proper ventilation</li> </ul>
		Roof: Use of corrugated CGI sheets	<ul style="list-style-type: none"> <li>• Economical and free of maintenance</li> <li>• Changing market with availability of new types of building materials</li> <li>• Light weight material leading to reduction of the dead load of the building</li> </ul>
		Wall Decoration	<ul style="list-style-type: none"> <li>• Due to youth not showing interest in this work busy on own schedules</li> <li>• Less knowledge</li> <li>• Shortage of skill Labor</li> <li>• Less availability of material use for decorating houses</li> </ul>



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