



# Apatani- Tribal Architecture

Research and Documentation

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## ***Apatani- Tribal Architecture***

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Land of the Rising Sun<sup>(1)</sup>



## **INTRODUCTION**

# Introduction

Arunachal Pradesh *“The Unexplored Paradise”*.

Located in northeast India, it holds the most north-eastern position among the other states in the north-east region of India. Arunachal Pradesh borders the states of Assam and Nagaland to the south, and shares international borders with Bhutan in the west, Myanmar in the east and China in the north. Itanagar is the capital of the state. It represents only 358 percent of the total area of India.

Arunachal Pradesh is known as *“Land of the Rising Sun,”*. It is also known as the *“Orchid State of India”* or *“The Paradise of the Botanists”*.

As in other parts of Northeast India, the people native to the state trace their origins from the Tibeto-Burman people. Arunachal is the largest state area-wise in the north-east region. It is one of the richest and most diverse regions in all of Asia. With 50 distinct languages. There are about 20 Major tribes with a number of Sub-Tribes in Arunachal Pradesh having diverse culture and traditions.

Arunachal with its rich tradition, culture, and flora fauna is pride for the inhabitants. It has its own vernacular/tribal architecture which has developed throughout the time. Built by the locals themselves with locally available materials. They are sensitive to the micro climatic condition and natural calamities.



Arunachal Pradesh and its vicinity<sup>(2)</sup>

## History

There are practically no records relating to the earlier history of this area except some oral literature and the number of historical ruins found its existence since the pre-historic days of Ramayana, Mahabharata and different other sacred legends.

Initially whole of present Arunachal was not a part of India. In 1912-13, the British Raj made agreements with tribal leaders that defined the area that was known as **NEFA (Northeast Frontier Agency)**. During british rule Sir Henry McMahon, drew up the 890km McMahon Line as the border between India and China in Shimla, during a conference which also discussed the Tibetan and Chinese borders ("McMahon Line.") This conference is called Shimla Conference.

British policy for this area was isolation and limited interaction with forces of civilization. This is the reason why inner line permit is required when we have to visit Arunachal.

**NEFA** is a special category under the Indian constitution where the land and forest rights of the tribal people are fully protected by laws. The official focus here was on encouraging the tribal people to limit the introduction of too many outsiders.

**NEFA** was renamed as Arunachal Pradesh by Late Sri Bibhabasu Das Shastri, the then Director of Research, on 20 January 1972 and it became a Union Territory. Arunachal Pradesh became a state on 20 February 1987.



Part of British map published in 1909 showing the Indo-Tibetan traditional border<sup>(3)</sup>.



Map Showing McMohan line



Map showing present position and location of Arunachal Pradesh in India (Opposite page) <sup>(4)</sup>

## Climate and Geography

Arunachal Pradesh is located between 26.28° N and 29.30° N latitude and 91.20° E and 97.30° E longitude and has 83,743 square km area. Most of Arunachal Pradesh is covered by the Himalayas. The land is mostly mountainous with the Himalayan ranges running north south. These divide the state into five river valleys: the Kameng, the Subansiri, the Siang, the Lohit and the Tirap. The Himalayan ranges that extend up to the eastern Arunachal separate it from Tibet. The climate of Arunachal Pradesh varies with elevation. Areas that are at a very high elevation in the Upper Himalaya close to the Tibetan border have an alpine or tundra climate. Middle Himalayas, experience a temperate climate. Areas at the sub-Himalayan and sea-level elevation generally experience humid, sub-tropical climate with hot summers and mild winters.

Arunachal Pradesh receives heavy rainfall of 2,000 to 4,100 mm annually, most of it between May and September. The mountain slopes and hills are covered with alpine, temperate and subtropical forests of dwarf rhododendron, oak, pine, maple, fir, juniper and teak .

The topography in Arunachal Pradesh is characterized by an undulating hilly terrain.



The Himalayas bordering Arunachal Pradesh (Image from Bomdila) <sup>(5)</sup>

Location: 27.06°N 93.37°E

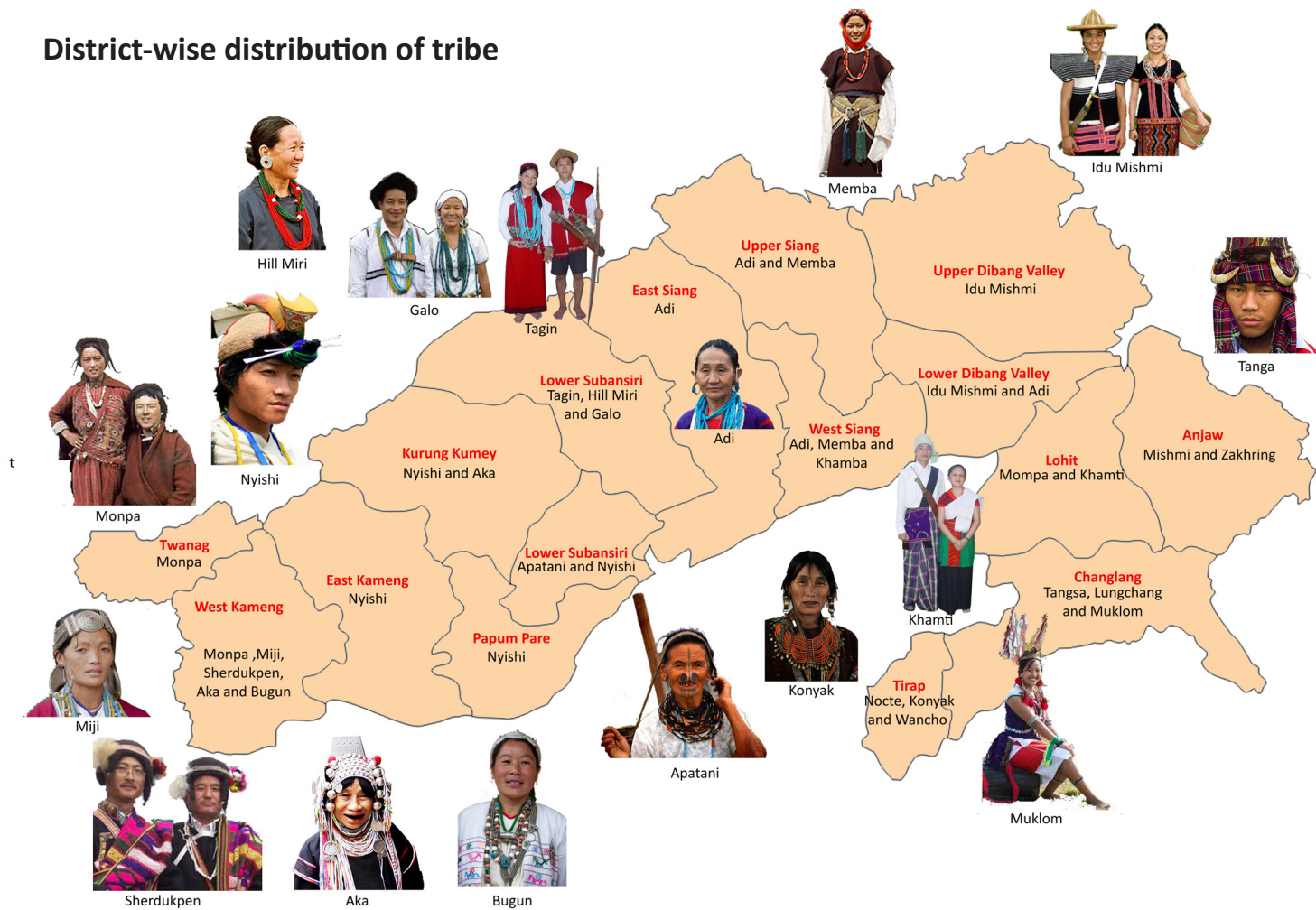
Area: 83,743 km<sup>2</sup>

Founded: February 20, 1987

Population: 1.255 million (2012)

Capital: Itanagar

## District-wise distribution of tribe







View of Tawang monastery<sup>(11)</sup>

## Building Practice

There are three broad building zones in Arunachal:

1. High -Altitude Buildings
- Medium Altitude Buildings.
3. Low-Altitude Buildings.

### High Altitude Buildings

- **Districts**

West Kameng, Tawang.

- **Planning**

Due to the uneven topography and hilly terrain, people there do scattered planning.



Ridge

The ridge sees a scatter type of planning due to the uneven ground. As they move towards the valley, the houses are built closer to each other due to availability of flatter land.

- **Material used**

Stone and Timber.

The basement is made of stone masonry and for the main structure stone and wood are used.



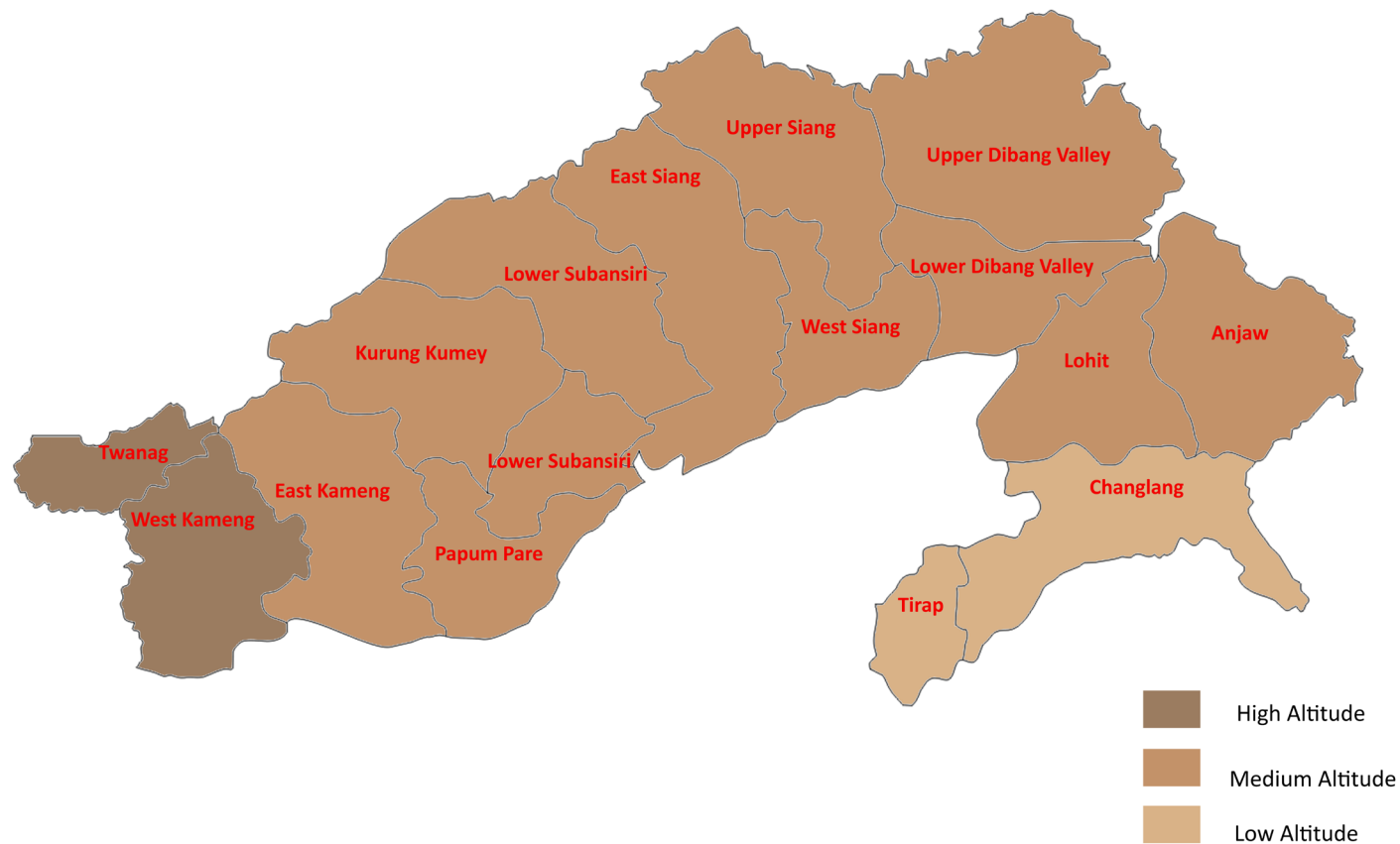
Sherdukpen house<sup>(6)</sup>



Monpa house<sup>(6)</sup>



## Altitude wise distribution of area



- **Evolution of Architecture**

These days R.C.C. plaster and paint are used for the main structure. The doors and windows are made of painted timber. Glass is also used for the windows. The railings are made of steel. It is also used wherever necessary. Corrugated tin sheet is used for the roof with a space for the chimney. Space for toilet is also provided.

Commercial shops have been opened in residential areas. Many mixed used buildings have come into existence. (Mixed used buildings are buildings which have commercial n residential space in them).



Modern colony in Tawang<sup>(7)</sup>

## Middle Altitude Buildings

- **District**

East Kameng, Papum Pare, Kurung Kumei, Lower Subansiri, Upper Subansiri, East Siang, West Siang, Upper Siang, Upper Dibang Valley, Lower Dibang Valley, Lohit, Anjaw.

- **Material used**

Bamboo.

- **Planning**

Due to the availability of flat terrain people in this region practice row planning.



Row housing



Adi House <sup>(8)</sup>

- **Evolution of Architecture**

Initially only bamboo or timber was used but with time people started using cement plaster on bamboo to make it stronger. These days people use R.C.C, cement mortar, glass and steel for their construction. People have started to use paint also. Corrugated tin sheet is used in the roof. Space for chimney is provided and separate space for toilet is also given.

Commercial shops have been opened in the residential areas. Many houses have shops in the front part.

*I have chosen the Architecture practices of Apatani Tribe for a detailed study which has been described in detail in further chapters.*



Tagin House <sup>(8)</sup>



Modern Apatani House <sup>(35)</sup>





Village of Changlang (Opposite page) <sup>(1)</sup>

## Low Altitude Buildings

- **Districts**

Changlang, Tirap

- **Material used**

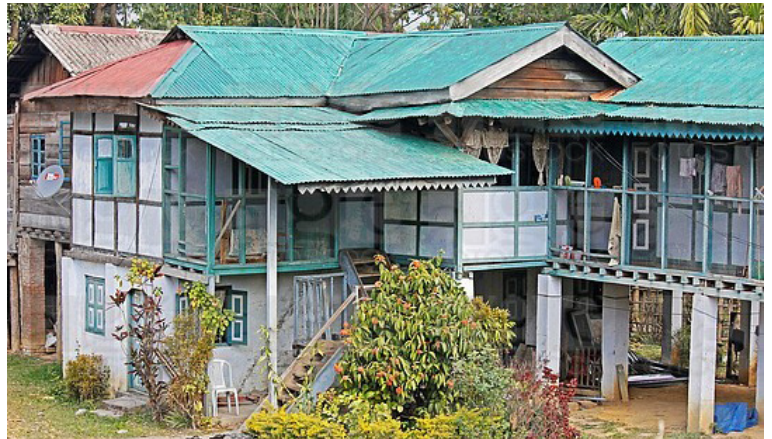
Bamboo, Timber, dry paddy straws and thatch grass is used for the roof.

- **Evolution of Architecture**

Evolution of Architecture is same as for Middle Altitude region.



Changlang house <sup>(9)</sup>



Miao house <sup>(10)</sup>





Apatani ritual procession<sup>[12]</sup>

## **INTRODUCTION TO APATANI TRIBE**

# Apatani Tribe

## Why Apatani?

I have grown up watching the tribals of Arunachal. This motivated me to take up Tribe Architecture of Arunachal Pradesh as my research topic as there is no proper documentation and information about their architectural practices.

I stay in a Naharlagun where there is a traditional Apatani village nearby. This built up an interest to know more about their culture, traditional and architectural practices. Staying in the middle altitude region of the state, I have few Apatani friends who could help me gather information from the locals.

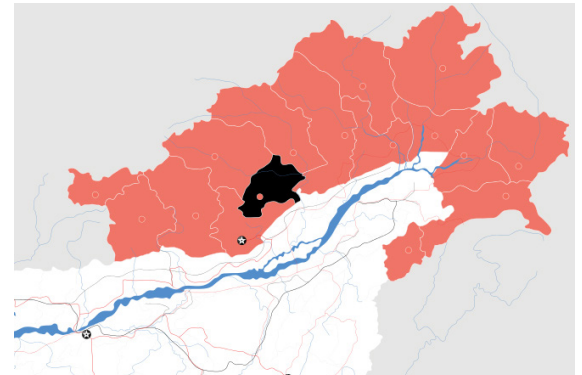
The Apatani, or Tanii, are a tribal group of people living mainly in Ziro valley in the Lower Subansiri district of Arunachal Pradesh.

## History:

There are no written records of the history of the Apatani tribes, but throughout their existence the Apatani have had a democratic system of running the society. One of their oral accounts speaks of their migration from the extreme north of Subansiri and Siang areas following the rivers of Kurung and Kumey. These oral accounts are usually presented in the form of folk tales such as the miji and migung. The first contact with the Europeans occurred in 1897, when British officials came to stay in the valley.

## Origin:

In folk tales, both the ritual chants and the prose narrations speak of Abotani, reputedly the original ancestor of the Apatani and the other tribes in central Arunachal Pradesh.



The above map shows the position of Lower Subansiri





## Occupation

The Apatanis are mainly agriculturists. Tribe practices wet rice cultivation, choosing to permanently settle rather than live a nomadic lifestyle that comes with slash-and-burn type cultivation. This type of cultivation is unique to the Apatanis. Taking the sustainability of their fields a step further, the tribe also harvests fish in the wet fields alongside rice. This instantly doubles the food production of their fields. Increasing their food production even further, the Apatanis also cultivate within their fields a unique type of salt called **tapyo**, Prepared from the ashes of certain plants. Which not only is an alternate to sodium chloride, it also helps in goiter prevention. The Apatanis have had an intricate irrigation system of canals and channels from the time they started wet rice cultivation. It is impressive to note that the only (small) river in Ziro valley irrigates the whole wet rice fields of Ziro.

While the majority of the tribe practices agriculture, the others are engaged in poultry, hunting, they rear Mithuns(*Bos frontalis*) cattle, pig, goats and fishing. And maintaining a balance with the changing world, some have also chosen to become government leaders, employees, doctors, engineers and other modern professionals.

The Apatani women are skillful weavers. The women collect the firewood for the household from the woods. They also go to the nearby food market to sell their agricultural products. Basketry is the popular handicraft amongst the men folk.



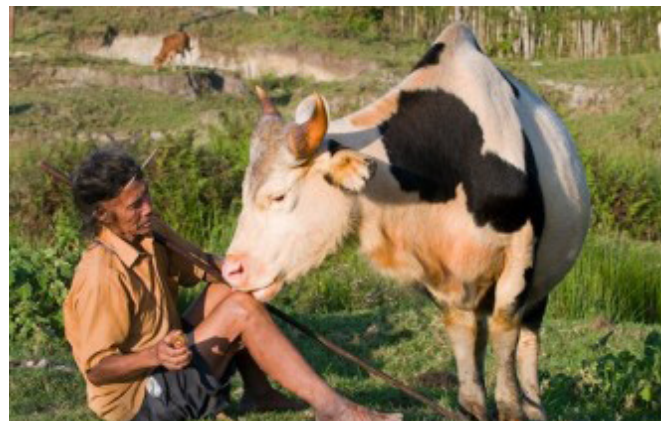
Rice Cultivation <sup>(13)</sup>



Apatani Woman weaving <sup>(14)</sup>



Apatni women fetching firewood from the forest<sup>(15)</sup>



Apatni man raising mithuns<sup>(14)</sup>



Rice cum fish culture<sup>(16)</sup>



Apatani woman shelling in the market<sup>(17)</sup>

## Religion

Most Apatanis are nature worshiper. They believe every object in universe possess divine power and represent gods or deity. Among all Sun and Moon is consider supreme almighty. Initially all the Apatani's, worshiped **Donyi-Polo** (Donyi- Sun God and Polo –Moon Goddess). Worship of Donyi-Polo was started by Abotani the sole ancestor of all Apatani.

With time due to the influence from other tribes many of the Apatani families are converting into christian.

When a misfortune occurs, they believe that it is caused by certain evil spirits, and thus they make appeasement by sacrificing chickens, cows and other domestic animals.



Apatani Women praying to their god Donyi-Polo<sup>(18)</sup>



Sacrificed animal skulls on Apatani grave<sup>(21,9)</sup>



Sacrificing a chicken <sup>(20)</sup>



## Totem:

There are two types of totem in Apatni tribe. It is made of bamboo and is erected outside their house during the festival of *Myoko*. Apatani's believe that totem is a sacred for them. That is why they install it outside their houses. The smaller one is called '**Aanggya**', it is decorated with egg shells and hen feathers.

The long totem is called '**Babo**' .



**Aanggya** outside Apatani house <sup>(21)</sup>



**Babo** outside Apatani house<sup>(22)</sup>

## Family size

Earlier Apatani's used to live in a joint family, with all the family members living together under one roof. But due to modernization the system of living together has changed.

## Customs and Lifestyle

An Apatani family is patriarchal. The status of men is considered higher than that of women, the sexes share responsibilities in the house and the family.

Apatani women carry out the household activities of gathering both wild and kitchen garden vegetables, cooking, fetching water, pounding rice, cleaning houses, washing clothes and utensils, nursing, looking after infants and children, ginning (clothes) and spinning of cotton, and other jobs associated with the household. In the field, the Apatani woman carries out the tasks that include gardening, seeding, and other activities. At home, the internal family income is controlled by a woman. But the man also has his part of duty in looking after cultivation activities, and acts as the head of family in society.

The most interesting members are the older women of the tribe, who wear facial tattoos (**Tiipe**) and massive nose rings (**Yaping hullo**), the tradition, though non-existent now. During pre-modern times, when the Apatani women were considered to be the most beautiful in all of Arunachal Pradesh. Men of other tribes would often steal the Apatani women, which led the Apatani men to tattoo the faces of their women and make them wear massive nose plugs, in order to make them less appealing.



Apatani Family in Ziro <sup>(12)</sup>



Apatani Family (Opposite page) <sup>(12)</sup>

## Apatani Women

Apatani female tattooed themselves from their forehead to tip of the nose. They also tattoo their chin with five vertical lines and at the top near lower lip a horizontal bar joins all the five lines of vertical tattoo of the chin. The facial decoration of the woman would not be complete without two big nose plug on either side of the nose. These **Yaping Hullo** are made of pieces of whole Cane.

Dry Cane is cut. Both the ends of the Cane are smoothened by burning the ends and rubbing it against hard and smooth surface so that they are smooth and even. These processes also ensure the sterility of the material so that it does not cause any injury to the nose.

Facial decorations of Apatani females is complete with perforation of her ears and later on putting hollow bamboo pieces called **Yaru Hukho**, which is used for putting on ear rings.

## Apatani Men

Apatani male decorate their face with a tattoo on the middle of their chin in the shape of an English Alphabet **"T"**. Also they perforate their ear lobes and big pieces of hollowed bamboo called **Yaru Hukho** (Ear Plug).

They have a good **Piiding** (knot of hair on forehead) meant to enhance the handsomeness of an Apatani men.



Facial decorations of Apatani females <sup>(23)</sup>



Facial decorations of Apatani females <sup>(19)</sup>





Apatani Colony in ziro <sup>(24)</sup>



## **ARCHITECTURE OF APATANI TRIBE**

## Layout and Planning

Apatani's believed in living together. Oral history says that they always lived in a colony together as a family. Apatani's live in middle altitude region.

They follow Row housing system. Walls of all the adjacent house are attached. The planning of house is done in continuous pattern in a row until or unless there is a breakage like a road or any other obstacle in between. Initially the colony was separated by the cowpaths. Even today the Apatani colony is separated by the roads which are made the government.

There is a disadvantage of having these houses in a row because in case fire catches in one of the house, there are chances of fire in all the other house.



The image shows how the roads and natural landscape of the Apatani region divides the area into different colonies.

Colony divided Internal Road Main road



Old Apatani colony in Ziro<sup>(35)</sup>

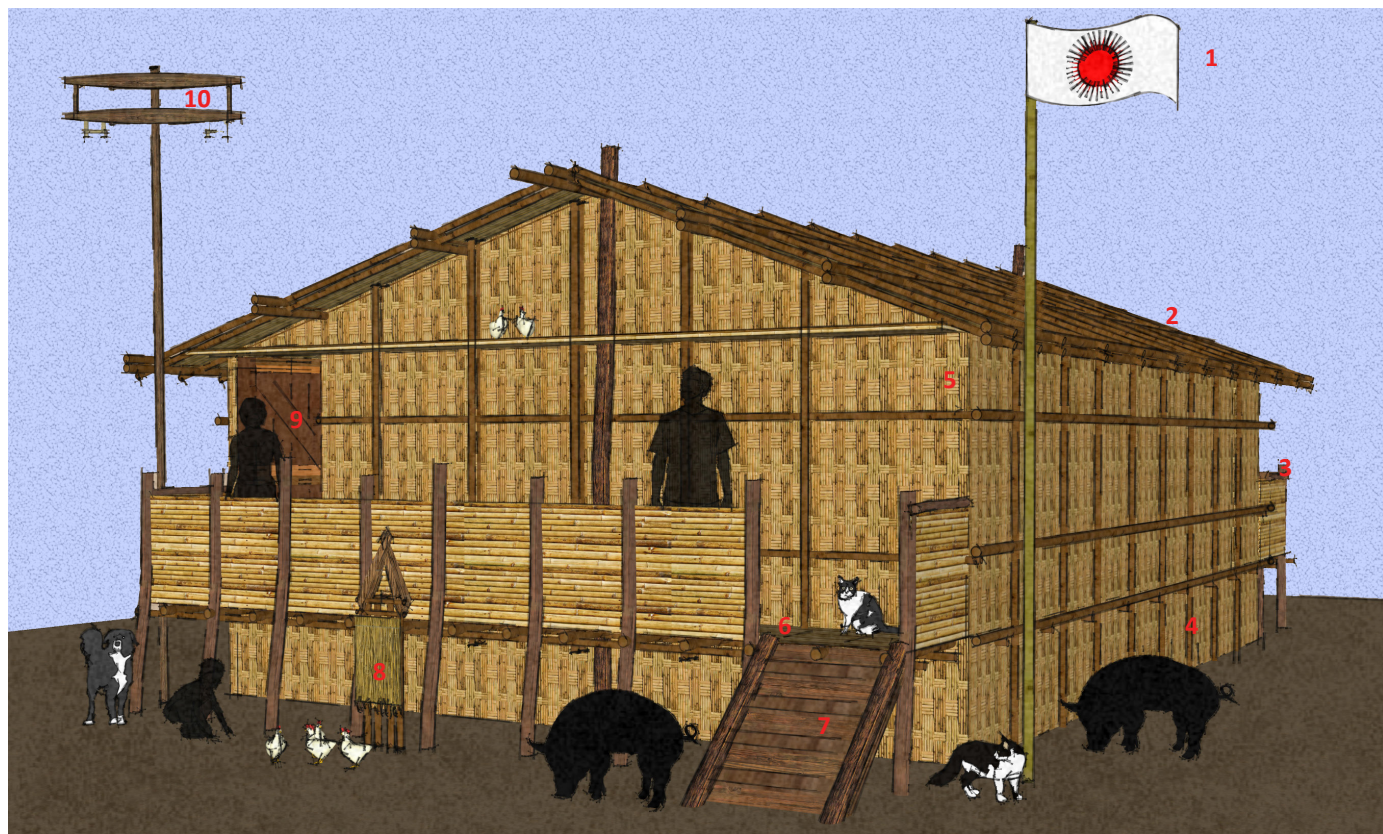


**Typical Plan of Apatani house**

- |                     |                      |
|---------------------|----------------------|
| 1. Dony-Polo Flag   | 5. Storage Space     |
| Abya (Stairs)       | 6. Oogu (Fire Place) |
| 3. Simbya (Veranda) | 7. Living Area       |
| 4. Ahgya (Entrance) | 8. Simbya (Veranda)  |







**Typical Elevation of Apatani house**

- |                       |                     |                     |
|-----------------------|---------------------|---------------------|
| 1. Dony-Polo Flag     | 5. Tarsi (Wall)     | 9. Ahgya (Entrance) |
| Maalo (Roof)          | 6. Simbya (Veranda) | 10. Babo (Totem)    |
| 3. Simbya (Veranda)   | 7. Abya (Stairs)    |                     |
| 4. Aai Jiri (Pig pit) | 8. Aanggya (Totem)  |                     |

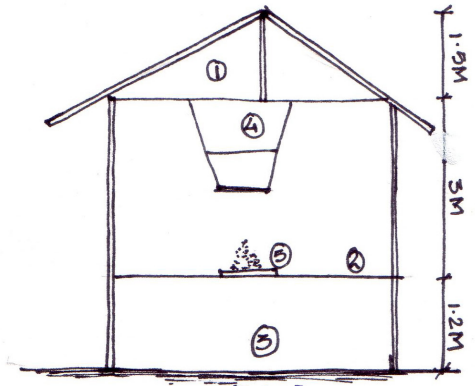


Exterior of Apatani house <sup>(35)</sup>

The houses are on Silts and are called '**Chang Ghar**'. The height of the slit varies from 1.5-2m. The reason for using Slits:

- Protection against disaster (Arunachal is landslide prone area).
- Space of the stilts are used as pig pit.

The main stairs '**Abya**', leads to the veranda called '**Simbya**' leading to the entrance to the house.



1. STORAGE SPACE
2. LIVING AREA / FAMILY SPACE
3. ANIMAL PIT
4. DARAKE
5. FIRE PLACE (COOGU)

Typical Section of Apatani house



## Elements of Apatani House

### Abya (Staircase):

Abya is the Staircase leading to the veranda of the house. It varies in size and shape. Materials from which it is made may also vary from house to house.



Abya made of R.C.C<sup>(35)</sup>



Abya made of Bamboo and Wood<sup>(23)</sup>



Abya made of wood.<sup>(35)</sup>

## ***Simbya* (Veranda)**

***Simbya*** is a veranda leading to the entrance of the house. In most of the houses there are two *Simbya* one in the front and other at the back of the house. The size of the *Simbya* may vary from house to house.

A parapet is made covering the *Simbya*. The design, height and the material used to make the parapet may vary from house to house.

### **Different design and type of parapet**



Timber parapet <sup>(9)</sup>



Bamboo parapet with wooden support <sup>(35)</sup>



Bamboo parapet with wooden support <sup>(35)</sup>



## ***Aangya,Babo*** (Totem)

It is a post made of bamboo, which can be seen outside every house. It is believed to be sacred for the Apatani's. These are of two types '***Aangya***' and '***Babo***'.

*Aangya* is the shorter post which is decorated with cane, egg shells and bird feather.

*Babo* is more like a pole that is decorated using thin strips of cane and bamboo.

It is placed outside their house throughout the year. These are changed during the festival of *Myoko*. Their design may vary from house to house.



*Babo*<sup>(25)</sup>

*Aangya*<sup>(21)</sup>

## ***Aai jiri*** (Pig pit)

The houses being built on the stilts have space below them. This space is used for the pigs and is called '***Aai jiri***'.

The *Aai jiri* serves as a space for the pigs to eat and stay. All the waste from the house, the vegetable waste, meat waste and human excreta are discarded into the *Aai jiri*. There are openings given in the *Aai jiri* for proper air circulation for the pigs staying there.

The main material used to make the *Aai jiri* is bamboo or timber. The design and size may vary from house to house according to their requirements and needs.



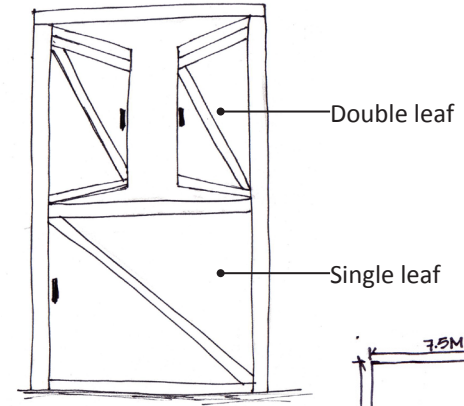
Sharing *Aai jiri* for two family<sup>(35)</sup>

## Aaiye (Door)

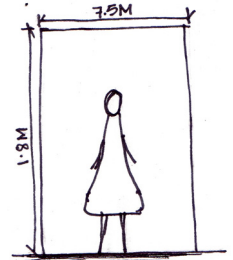
**Aaiye** is made of bamboo or timber. The standard door size for an Apatani house is  $750 \times 1800$  mm. Since, the Apatani people are short so the standard size is different in their style of Architecture. The design of the door may vary from house to house.



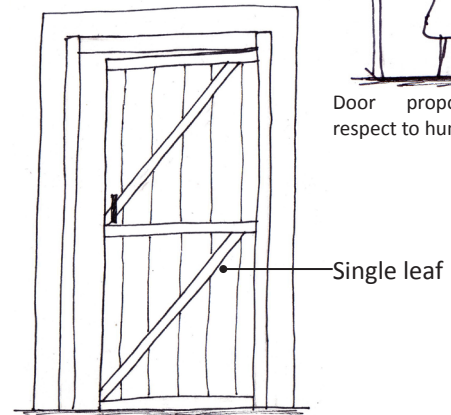
Image shows door in Apatani house<sup>(25)</sup>



Ledged door in Apatani house<sup>(10)</sup>



Door proportion with respect to human<sup>(10)</sup>



Ledged door in Apatani house<sup>(10)</sup>

## Window

There are no windows in a typical Apatani house. The only source of light and ventilation were the doors.

## Tarsi (Walls)

The **Tarsi** are made of bamboo or timber. The main supporting columns for the walls are long bamboo or wooden logs. And the walls are mainly made of bamboo weaved together in different patterns or wooden planks. (Different weaving pattern is described in further topics).



Wooden planks are used for the walls <sup>(35)</sup>



Bamboo weaved in certain pattern is used for walls and it is supported by long bamboo members <sup>(35)</sup>

## Myopii (Floor) and Reke (Ceiling)

**Myopii** and **Reke** are made of bamboo or timber placed in different pattern and style accordingly. For supporting the **Myopii** and **Reke** bamboo or timber joists are used.

In the below image we can see that bamboo is used in the ceiling which is supported by another bamboo member, wooden planks are used for the wall which is also supported by bamboo, and bamboo weaved is used for flooring which is supported by floor joists.



Interior of Apatani house showing different materials used <sup>(26)</sup>



## ***Nengka*** (Toilet)

In the old Apatani house no proper space for ***Nengka*** was defined. In some of the houses there was just a partition in one corner of the house and a hole was there in that space. The waste from that hole was discarded into the *Aai jiri* (pig pit).

In the below image the bamboo platform we see is used to sit facing towards the wall and the waste is disposed into the pig pit.



Door for *Nengka*<sup>(10)</sup>



Interior of *Nengka*<sup>(10)</sup>

## ***Malo*** (Roof)

***Malo*** is made of bamboo supported by bamboo or timber purlins and rafter.

Image shows the use of bamboo in the roof which is supported by long bamboos.



This is an image of new Apatani house that is why we can also see the use of tin corrugated sheet in the roof<sup>(12)</sup>





**Typical Section of Apatani house**

- |                                      |                        |                               |
|--------------------------------------|------------------------|-------------------------------|
| 1. Dony-Polo Flag                    | 5. <i>Maalo</i> (Roof) | 8. <i>Oogu</i> (Fire place)   |
| Abya (Stairs)                        | 6. Space between roof  | 9. Living Area                |
| 3. <i>Simbya</i> (Veranda)           | and ceiling used for   | 10. <i>Aai jiri</i> (Pig pit) |
| 4. 1 <sup>st</sup> part of the house | storage                | 11. <i>Simbya</i> (Veranda)   |
| used for storage.                    | 7. <i>Darake</i>       |                               |

## Storage space

According to the images and the information I received it looks like there are two storage space. First one is the space is between the ceiling and the roof of the living area of the house and the other one is the first part of the house

All the regularly needed things are used in the first part of the house, it is also as hen coop.

All their extra things like utensils, wood, food, their local drink (*Apong*) is also left for fermentation there.



Space between roof and ceiling used for storage <sup>(35)</sup>



First part of the house is used for storage <sup>(35)</sup>

## Chimney

In traditional Apatani house there were no chimneys provided. This was the reason why the ambience inside the house was always dark and smoky. Since there were no windows, so the only way for the outlet of the smoke was the door and the gap which was left between the wall and the roof in the first part of the house.



In the image we can see that the smoke from the house comes out from the gap in between the wall and the roof <sup>(35)</sup>



In the image we can see that due to the absence of chimney in the house the ceiling is all black and greasy <sup>(16)</sup>



# Materials

## Materials used are:

- Bamboo
- Wood
- Stone
- Dry paddy straws, thatch grass, cane leaves, banana leaves.

## Bamboo:

Bamboo, known as 'Green Gold' of Arunachal Pradesh'. Bamboo used for construction are ***Bambusa tulda*, *Dendrocalamus hamiltonii*, *Dendrocalamus hamiltonii*, *Bambusa tulda***. Bamboo is the most commonly used in every elements of architecture like roof, floor, ceiling, wall, and stairs.



Bamboo is used in walls <sup>(35)</sup>



Bamboo is used to make roof and ceiling <sup>(35)</sup>



Bamboo is used to make the frame structure of the house <sup>(10)</sup>



Bamboo used for roof ,fencing <sup>(35)</sup>



Bamboo used for flooring <sup>(35)</sup>



## Bamboo is weaved in different patterns



**Pattern name:**

Criss cross Pattern

This kind of pattern is used for the walls, mats<sup>(28)</sup>



**Pattern name:**

Mat Pattern

This kind of pattern is used for the walls. <sup>(29)</sup>



**Pattern name:**

Hexagonal Pattern

This kind of pattern is used for the walls, mats<sup>(29)</sup>



This kind of pattern is used for the walls. <sup>(28)</sup>



**Pattern name:**

Netting Pattern

This kind of pattern is used for the walls, mats<sup>(29)</sup>

## Wood

Woods used are Pine and Teak wood. As these are very easily available in the jungle. It is used for wall, flooring, stairs, door, as supporting members.



Wood is used for walls and flooring <sup>(35)</sup>

## Stone

Stone is used for steps.



Stone steps are used <sup>(30)</sup>

**Dry paddy straws, thatch grass, cane leaves, banana leaves, chinese palm**

They are used for rope for tying the joints in constructions. It is also used for decorating, basketing.

## Different species of plants used for construction



Teak tree



Pine tree



*Dendrocalamus hamiltonii*



Cane



*Bambusa tulda*

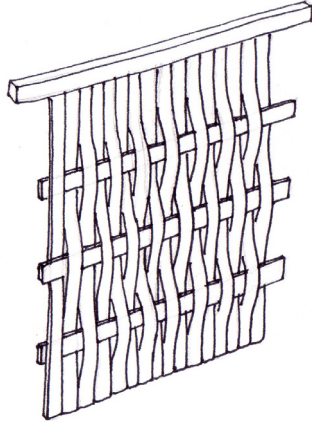


Chinese palm

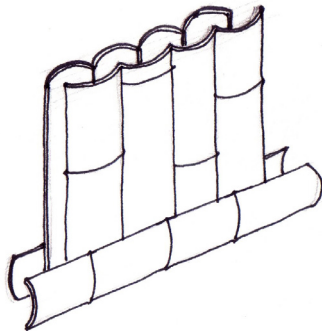


## Basic joints and members details

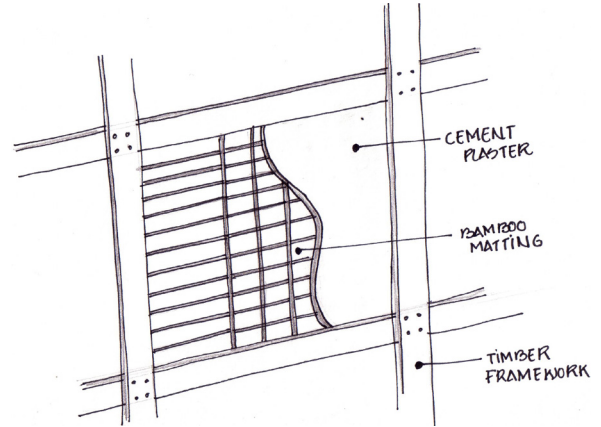
Different techniques in which walls is made.



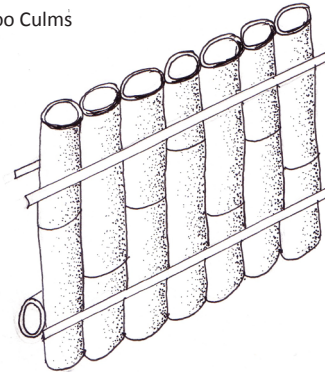
Woven Bamboo wall



Vertical Haved Culms



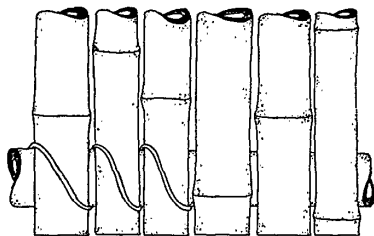
Whole Bamboo Culms



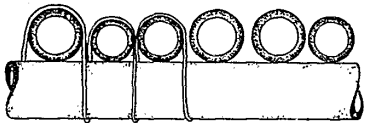
Wattle and Daub



Different techniques in which Floor is made <sup>(31)</sup>

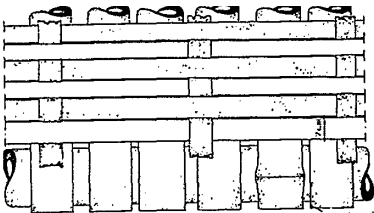


Plan

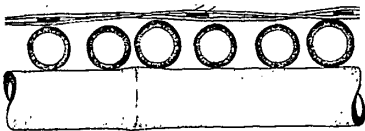


Section

Whole clums

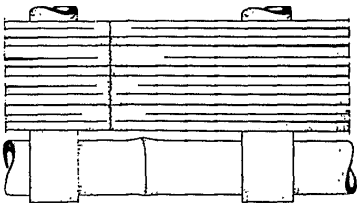


Plan

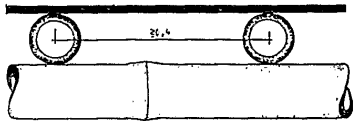


Section

Woven Bamboo strips

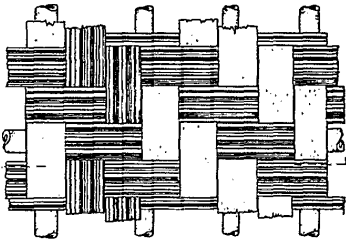


Plan



Section

Flattened clums



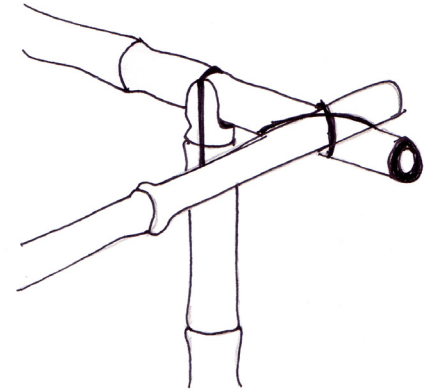
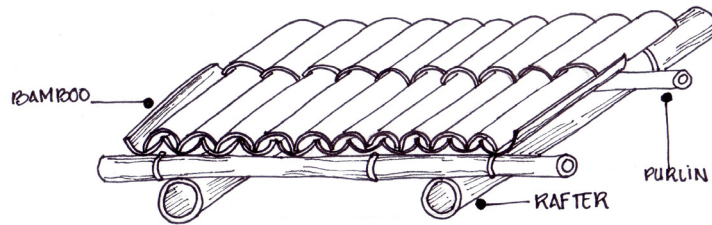
Plan



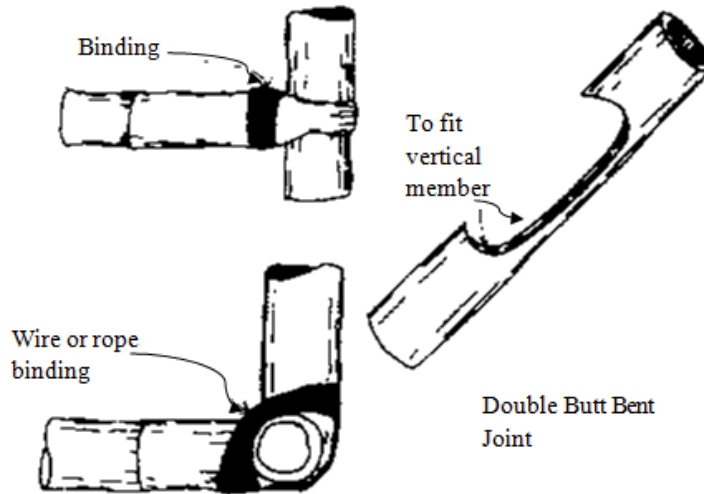
Section

Woven Bamboo strips

## Roof joinery

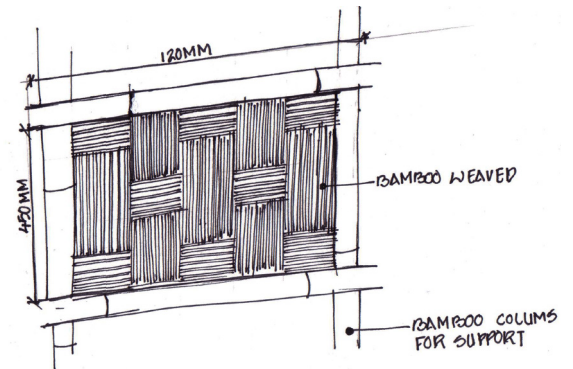


## Joinery detail



Detail 1 <sup>(32)</sup>

Detail 2



Detail 3

## Evolution of Architecture

There is a lot of difference in Apatani architecture these days. The changes are due to modernization, influence from neighboring states, tourists, easy accessibility of different materials.

In some of the town the traditional way of living together in a colony no more exists. But in small towns and villages this tradition still continues.

Many construction material has been added to their list of construction material like R.C.C, glass, steel, cement, paint.

Traditional houses had no chimney. Presently we can see chimney in almost all the houses

Slits in the house no more exists in most of the houses. Whereas some of houses still have the slits but they don't keep animals there. Some of the houses have a separate space for animals.

Commercial shops have been opened in the residential area. Many houses have shops in the front part of their house. Basic household items are sold in these shops.

Corrugated Tin roof has replaced the bamboo roof. Some of the houses have bamboo roof above the tin roof to maintain its traditional look.



Chimney, windows have been made, removal of stilts and use of modern materials and techniques <sup>(10)</sup>



Use of bamboo and tin together, commercial shops has been developed in the front part of the house <sup>(10)</sup>

In the traditional houses there were no segregation of rooms, there was only one living area where all the activities of the house took place. Whereas in the present Apatani house there is proper segregation of rooms as required.

Windows were not seen in the traditional houses. Presently we see windows in all the house.

Traditionally only single storey house were built. These days people have started making multi stored houses.

In the Traditional house there were no separate space for toilets inside the house. Presently there is a separate space for toilet inside the house. The space for toilet is generally a little excluded from the house. It is placed in the corner of balcony or veranda.

Traditionally for land demarcation they used fencing of bamboo or timber. But presently most of the houses have proper compound wall with a gate.

Presently the space of fireplace has shifted from center to corner of the room (if required).



Fireplace has been shifted from centre to corner of the room <sup>(33)</sup>



House with proper compound wall and gate<sup>(35)</sup>



Double stored houses has been made <sup>(10)</sup>





## Conclusion

Arunachal Pradesh had not seen development as early as the other states of north-east. Even the influence of the British Empire came very late. The people used the natural materials easily available around them to make themselves a home.

The people of Arunachal have their traditions and culture very close to their heart. Even after being introduced to the new materials and these materials being easily available, the tribal still prefer that their houses look the same and have the same characteristics.

India is developing in terms of infrastructure and technology due to urbanization and globalization. The need for today is to combine the knowledge of the vernacular architecture to the latest technology. We as the future architects need to realize the value of the vernacular architecture and work towards preserving it.

Initially the materials used were the locally available materials but due to easy availability of alternative materials people have stopped using the locally available materials. People today are trying to maintain the identity of the Apatani house only in terms of facade treatment. The traditional techniques and methods of architecture is vanishing with time. As future architects we also need to keep in mind the techniques and methods of the architecture while we work towards preserving it, and not only looking at the aesthetic part of it.

The purpose of having the central living space has been lost due to urbanization. People now want privacy so the tradition of staying together in single lost has been lost. The high stilts have been replaced by the low plinths.

I conclude by learning and appreciating the principles of the vernacular architecture and integrating them with the modern knowledge and techniques.

## CONCLUSION

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