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# Ivatan Heritage Architecture: A Survey of Different House Types and Their Evolution

Jose F. Ignacio  
Roland Miguel Alejandrino



Figure 1 - Photo from the "Thurlow Collection" used with permission courtesy of Mr. Jonathan Best

## Abstract

*The typical representation of an Ivatan house (heritage house of Batanes) is a house made of stone, lime, wood and thatch roof made of cogon, a structure resembling houses found in European hinterlands. It clearly depicts the effects of harsh climatic conditions on the islands and the efforts of the Ivatans to adapt to a rigorous tropical environment. It tells a story of how the indigenous communities built compact and sturdy houses for protection against ravaging typhoons and the cold Siberian winds.*

*Unknown to most, however, is that this stone house is a product of an evolutionary process dating back to pre-Hispanic times. It is not an accurate assumption to say that the lime-stone-wood-and-thatch house is the sole representation of an Ivatan dwelling. Although the lime-stone-wood-and-thatch house has withstood the test of time, the fact remains that there are several other house types that have endured to this day most of which are made of wood-and-thatch.*

*This paper presents a survey of the "extant" Ivatan house types and morphologies that have evolved over a long period of time. An architectural timeline is presented as an attachment to this paper to establish the evolutionary process of the Ivatan heritage house (see Table 1). This paper does not include a description of non-existent pre-colonial heritage architecture in Batanes.*

## The Traditional Ivatan House

Before the house morphologies are discussed, it is important to note that traditional Ivatan houses fall under two classifications: Ethnic Architecture (EA)

and Folk Architecture (FA). Ethnic architecture may be defined as structures indigenous people have created for themselves. They are architecture formed in the process of anonymous design that later becomes traditional under the influence of various factors. Hence, Ivatan houses classified under ethnic architecture must be studied in relation to the natural and social environment of indigenous communities, their construction materials and techniques that formed a distinct architectural form in a specific region. They are made of natural materials such as wood, vegetation, and sometimes mud. Ethnic houses are of modest proportions and used primarily as a shelter from the elements and as a place to sleep, cook, and eat. Inhabitants normally stay outdoors working under shelters or lean-to roofs and are usually working in the fields.

Folk architecture on the other hand, shows the effects of time and foreign influences and how the communities adjusted to these elements. Folk architecture is an outcome of history. When ethnic architecture changes in response to time, foreign influences and history, innovations become inevitable and new types of structures emerge.

## Ivatan House Morphology

The Ivatan heritage house is not just a single structure. It is comprised of at least two separate buildings: the main house and the kitchen. In other cases, a third structure serving as storage or shed may also exist.

There are several variations of the Ivatan heritage houses. However, two major patterns can be easily identified and referred to in this paper as the *wood-and-thatch* (WT) and the *lime-stone-wood-and-thatch* (LSWT) structures. This grouping refers to the predominant materials used for the walls. Both groups though, use cogon, wood and reeds as roofing materials.

- WT (*wood-and-thatch*) - These structures use cogon, wood planks, wood studs, reeds, or a combination of these. They are usually smaller and built with less height compared to those made of stones. These are limited to single story structures. Most WT structures are used as storage or kitchen areas. In addition, along coastline villages, the WT structures may serve as

temporary dwellings during harvest season for fishing and other agricultural activities.

- LSWT (*lime-stone-wood-and-thatch*) - These structures use stones of varying sizes from gravel to boulders. Different stones are used including volcanic, basalt, metamorphic, and the like. Coral stones are also commonly used in areas close to the sea. Stones are piled and bound together by applying lime mortar, forming a strong, interlocking edifice. The building system allows for a larger floor area and a two-storey frame. During the rainy season, the lower level is usually used as storage for food and as shelter for animals. During summer, it is used for storage of agricultural products such as yam, sweet potato, wood and charcoal while the upper level is used as the main living quarters. A wood floor separates the two levels.

The LSWT structures are commonly used as the main house and the WT types as the kitchen or the storage and on certain occasions as temporary dwelling during harvest season.

The development of the traditional Ivatan house is also related to these two predominant patterns. A systematic examination of each type, especially if it is broken down into its individual components, will show a clear progressive outline. A pattern of evolution shows progression of the WT house types leading to modifications that eventually produced the LSWT classification.

This evolutionary tract is best discussed by undertaking a detailed description of each house type in their order of advancement.

## Wood-and-Thatch Structures

### Lagatiti

This is a makeshift type of shelter resembling an ethnic lean-to. It is commonly used as a temporary shed in farmlands. It is a small structure just over 4 square meters in floor area. It has a two-slope roof with one slope long enough to touch the ground and the other being a lot shorter almost resembling a roof eave.

The roof is made of cogon or any type of broad leaves. Reeds or long branches placed above and below keep the cogon in place.

Tree trunks are driven into the ground to serve as posts to support the roof assembly. The perimeter posts are just about one and a half meters high. This creates a very low ceiling that forces a person to be constantly seated or squatted while inside.

It has cogon walls on three sides with the sloping roof functioning as the wall for the remaining side. This reduces the space even further because of the tapering height of the roof-wall.

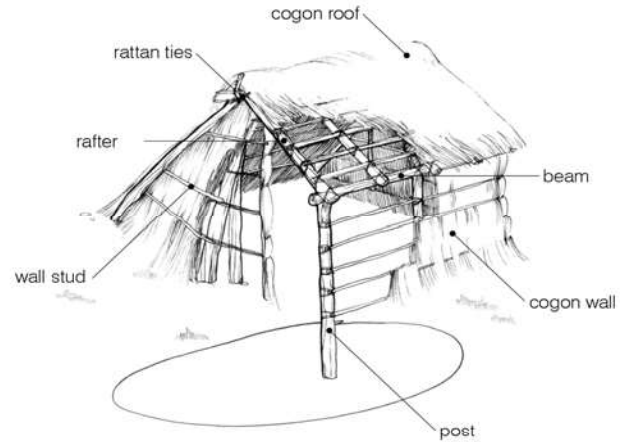


Figure 2 - Anatomy of the *Lagatiti*

### Rahaung

This developed from the primitive *kamadid* or *camarin*, a basic two-slope, A-frame roof resting on the ground. Timber logs were used as posts to elevate the A-frame and thus emerged the *Rahaung*. The roof construction is similar to the *Lagatiti*. Reeds are used to clamp the cogon. This time, however, more layers of alternating cogon and reeds are used forming a thicker roof.

It is devoid of walls, although in a variation of this house type, the front and rear areas of the A-frame have wall-like barriers made of cogon. These barriers cover only the area from the level of the eaves to the top of the triangular frame, sort of elevated walls. These provide added shields from rain and sun, which would otherwise penetrate if these areas were left bare.

Low, narrow wooden platforms are built alongside the posts to serve as worktops, storage, or benches. This house type is used as a multi-purpose shelter to house boats or as a shed for various work activities.

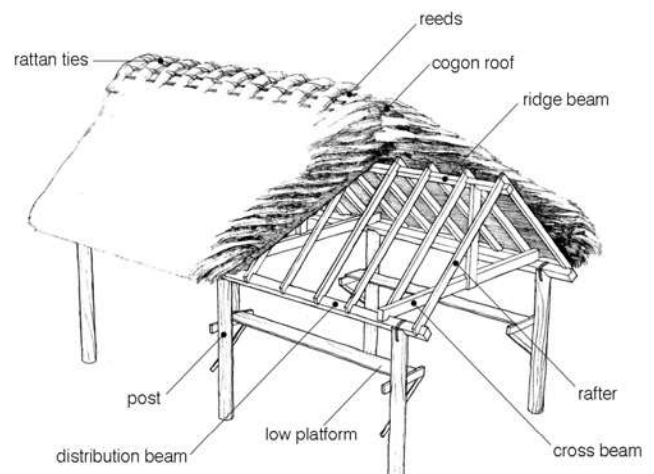


Figure 3 - Anatomy of the *Rahaung*

**Jinjin/Gingin/Chivuvuhung**

The *Jinjin* is an improvement of the *Rahaung*. It follows the same framework minus the low platforms.

Walls are now incorporated to create an interior space. Its name is derived from the Ivatan term for the cogon wall. As such, its walls are made mainly out of wood, cogon, and reeds similar to the roof but with only two layers of cogon. Like the *kamadid*, the walls rest on wooden posts that serve as columns.

Door and window openings are made by simply leaving rectangular spaces in between posts. Pieces of wood planks are used to serve as window frames and doorjamb. One or two pieces of wood may be used as door or window panels for each opening. These panels are affixed to the jambs using improvised metal hinges.

It may or may not have a wood floor depending on its use and the availability of wood planks. Though it is commonly used as a temporary shelter, there are those who maintain this type of house as a permanent dwelling. As such, a wood floor is a necessity.

*Jinjin*'s are primarily used as a seasonal shelter in fishing villages such as Barangay Diura in Batan Island. These houses provide refuge and sometimes serve as storage where smoked fish are cured during fishing season. They are left unoccupied when the tenants return to the mainland until the next fishing season starts.

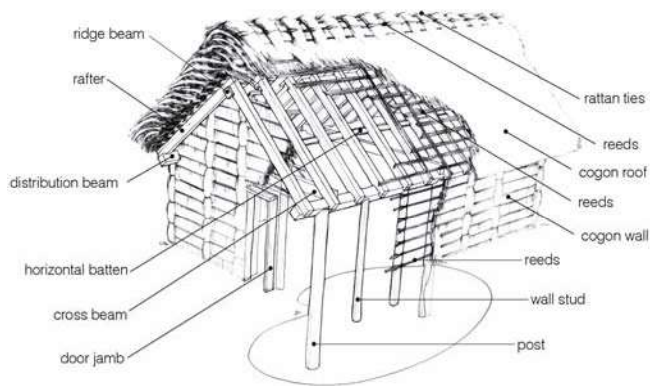


Figure 4 - Anatomy of the *Jinjin*

**Niriñdiñ**

As mentioned earlier, this house type is found only in the Island of Itbayat. It is a slightly varied version of the *Jinjin*.

It primarily functions as a house rather than a temporary shelter. As such, it is built using more durable materials. The walls are made of wood planks and clad with cogon at the exterior. This provides added protection from weathering for the exterior wood partition.

Since the cold months are far more severe in this island, the use of wood planks for the wall is a necessary protective measure against the wind. The same may be said for the floor.

The door and window panels are different, as well. In contrast with the swing-out type panels used in the *Jinjin* (or all the other house types), the *Niriñdiñ* is the only one that uses sliding panels.

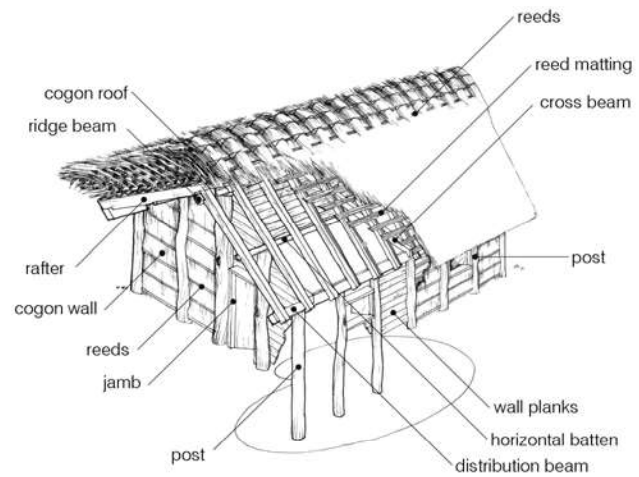


Figure 5 - Anatomy of the *Niriñdiñ*

**Mayhurahead**

This house type is the next step in the improvement of the *Jinjin* and the *Niriñdiñ*. Since both house types are built at ground level, the damp earth causes problems at the portions close to the ground. The cogon and wood rot faster when in contact with the damp soil. Therefore, a low base consisting of mud and stone is integrated at the lower section of the wall. This base is called *hurrahed*. Thus the name *Mayhurahead* or *may hurahed*, meaning "with stone base."

The stone base serves a more important function during rains. For houses that are built on terrains with uneven slope, the water flowing from the higher areas tend to seep into the floor especially during heavy downpours. The stone base helps divert the water around the house.

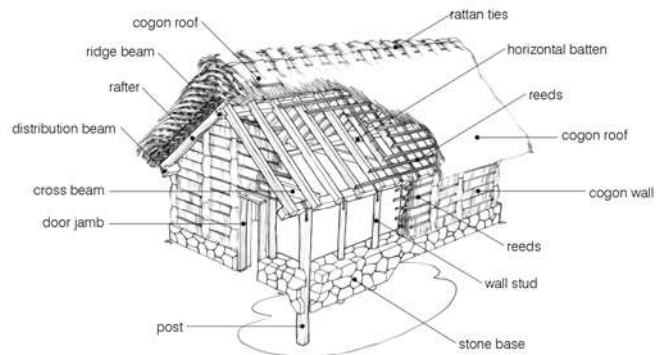


Figure 6 - Anatomy of the *Mayhurahead*

## Lime-Stone-Wood-and-Thatch Structures

The arrival of the Spanish colonizers brought in new construction technologies in the islands. Most influential of these is the use of masonry. The use of lime as mortar was introduced and with this emerged a new system of construction. European community planning was enforced using religion as means to convince the indigenous people of its practicality. In line with this, adaptation to European construction techniques developed a new set of house archetypes while merging with old traditions.

### Sinadumparan

This type of Ivatan house has walls made of stones and lime mortar. It still followed the basic form and roof construction of the WT houses but the use of masonry allowed it to go wider and higher. This new technology allowed for a lower level, which is used as a storage area or as shelter for domesticated animals during typhoons. A *Sinadumparan* house may vary in size and height depending on its use.

#### Main House or Rakuh

If it is used as the main house, meaning the living quarters, it is usually larger and taller. The lower level may have a higher ceiling to accommodate jars, boats, and other household belongings. Though it is referred to as a lower level, it is not located below ground. It is actually at ground floor height and is only treated as such because the upper level is where the main habitable area is.

These two levels are divided by a wooden floor anchored to the wall by a system of girders and joists resting on several pieces of corbel stones protruding from the walls. The floor is made of wood planks joined together by wooden dowels.

The door and window openings are identical in width and height. Both have two swing-in panels and the only visible difference between the two is a hip-high *verandilla* (wood balusters) added to the windows.

#### Kitchen or Kusina

A *Sinadumparan* used as a kitchen is a smaller version of the main house with a few noticeable alterations. Its lower level (basement) is only about a meter high and sometimes, the lower level may be omitted. It is intended mainly as a shelter for small animals such as dogs and fowls. Consequently, the openings in this level are devoid of any door panels. The kitchen has the same door assembly as the main house but has smaller windows, measuring only about half the height of the door.

The most distinguishing feature of the kitchen is a very low wall platform serving as a built-in stove called *rapuyan*. This is also made of stone and mortar. It is also equipped with wooden partitions located above the stove called *paya*, which are used as storage for dried fish, vegetables, condiments, and the like. Wood branches shaped as hangers are hung from the roof truss and above the kitchen's cooking area. Meat and dried fish are hung on these food hangers so that the rations are naturally smoked while cooking. Recessing

part of the wall about half a meter deep makes a built-in storage area. This area is just about half a meter wide and a meter tall.

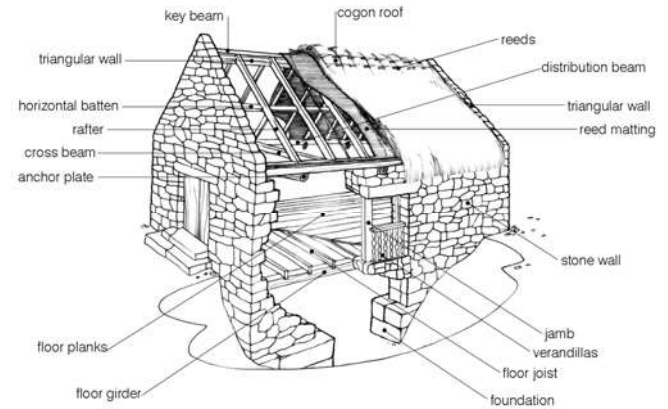


Figure 7 - Anatomy of the *Sinadumparan* Sinadumparan with Crown

### Sinadumparan with Crown

This variation has modifications to the triangular wall. The three corners of the triangle are extended to create wall protrusions with the one at the apex being rectangular in shape resembling a crown. These serve as flashings meant to protect the cogon roof ridge and the eaves, which are prone to shredding caused by strong winds and rain.

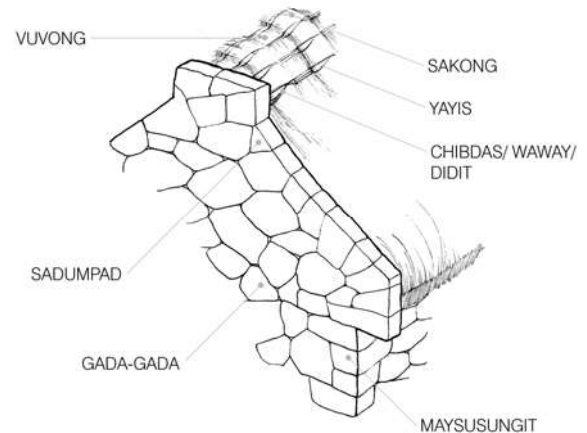
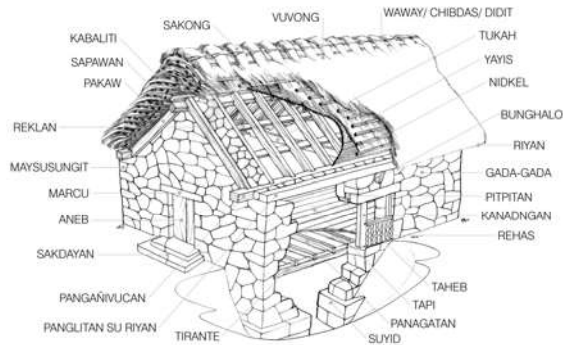


Figure 8 - Variation of the *Sinadumparan's* Triangular Wall, referred to as *Sinadumparan with Crown*

### Sinadumparan a Binedberan

This is a variation of the *Sinadumparan* commonly found in Itbayat. The cogon roof and some of the horizontal members of the truss extend beyond the triangular wall. The purpose behind it is to secure the triangular wall in between two rafters. This provides more protection from rainwater entering the walls and to reinforce the triangular portion, which is otherwise susceptible to breaking off from the main wall during earthquakes. The common cause of damage is

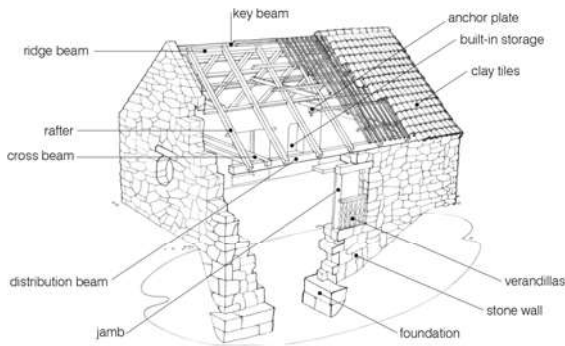
seepage of water inside the walls thus eroding the lime mortar, which in turn weakens the structure.



**Figure 9 - Anatomy of the Sinadumparan-a-Binedberan with Vernacular Terms**

**Beaterio**

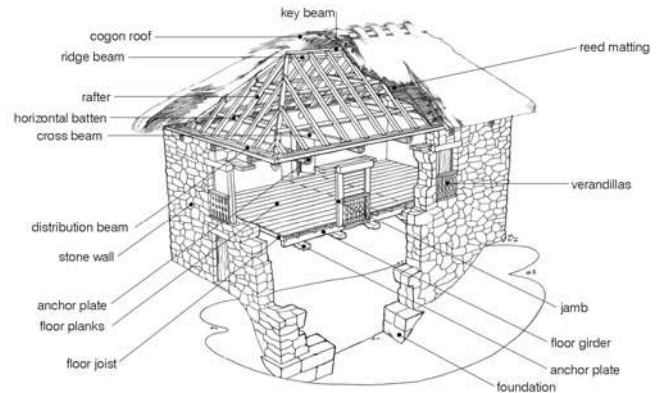
This house type is comparable in form with the *Sinadumparan Kusina* minus the lower level and the wooden floor. The most obvious change is the use of clay tile roofing in place of cogon. It was a product of the Spanish regime to introduce clay tiles as a substitute for cogon. Only one of these structures was ever built. It is located in the Island of Batan and was originally used as a Nun’s Convent.



**Figure 10 - Anatomy of the Beaterio**

**Maytuab/Nituavan**

This house type evolved from the *Sinadumparan* (2-slope roof structure) as a result of the disastrous earthquake of 1918 wherein the weak triangular portion of the walls collapsed for some houses. Instead of rebuilding the damaged walls, the 4-slope roof was introduced. The elimination of the triangular wall resulted in a more structurally sound shell, which eventually led to the construction of taller houses. Most of the relatively younger generation houses in Batanes are of this type; a testament to the argument that it is one of the more recent morphologies in the evolutionary chain of traditional heritage houses.



**Figure 11 - Anatomy of the Maytuab**

**Conclusion**

In summary, the traditional Ivatan heritage house as it is perceived today is a product of a long and slow metamorphosis from the wood and thatch archetype into the more popular lime-stone-wood-and-thatch archetype.

This transformation is a product of different factors including adaptation to the environment such as topography, typhoons and earthquakes; availability of materials; inherent technology of the indigenous people and influences brought in by various colonizers that asserted their presence in the province.

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Illustrations by Bjorn Hardy Lloyd Edding

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Jose F. Ignacio and Roland Miguel Alejandrino

300-500A.D.	CIRCA 1600-1700	CIRCA 1700-1800	CIRCA 1800-1900	CIRCA 1900-2000
<ul style="list-style-type: none"> <li>Chinese merchants started trade from Mainland China to the Philippines</li> </ul>   <ul style="list-style-type: none"> <li>Pre-historic Ivatans built their shelters by digging out pits with low roofs over them. Shelters were located along mountain ridges as protection against hostile neighbors. <i>(Sairahi Kara Study from Kumamoto University)</i></li> </ul>  <ul style="list-style-type: none"> <li>Traces of early forms of architecture can be observed from extant shelters still visible today and through house settlements of neighboring Orchid Island</li> </ul>  <ul style="list-style-type: none"> <li>Stone walls were built in pre-colonial Batanes. Sources taken from oral tradition of Ivatans as observed in actual structures existing today. <i>(Hornedo ethnographic essays: Taming of the Wind)</i></li> </ul>	 <ul style="list-style-type: none"> <li>Current archeological data at the Racuaydi, Nakavajayan settlement dwellings were built with large vertical lime stones used as columns for the corners of the house. <i>(Dado Study from archeological studies program, University of the Philippines)</i></li> </ul>  <ul style="list-style-type: none"> <li>"Wood, grass, and reed construction"                     <ul style="list-style-type: none"> <li>Small houses made of wooden posts, wattled with boughs</li> <li>Posts are not more than 4.5 ft high</li> <li>Height of ridgepole is approximately 7-8 ft high</li> <li>Dwellings have a cooking area at one end of the house</li> <li>Dwellings were built on the sides and top of rocky hills/mountains</li> <li>3 or 4 rows of houses were arranged one above another along steep precipices</li> <li>A wooden ladder is used to go navigate from one row of houses to another <i>(Blair and Robertson, 1906)</i></li> </ul> </li> </ul> 	<ul style="list-style-type: none"> <li>1686-1719 Spanish colonizers arrived in Batanes</li> <li>1773 - Local natives consented to become subjects of the King of Spain</li> <li>1785 - Prior to the arrival of Spanish colonizers, animals were kept near dwellings. Dominican friars eventually introduced slightly larger house designs with gardens to promote a healthier environment</li> </ul>  <ul style="list-style-type: none"> <li>1789 - Spanish provincial governor Joaquin Del Castillo ordered mountain dwellings to be abandoned and mandated Ivatans to live in lowland settlements around churches and municipalities. The task was executed with the force of a gun</li> </ul>  <ul style="list-style-type: none"> <li>1791 - Protests against Spanish impositions resulted in casualties. Resistance and revolt led to the execution of the local chieftain called Mangpus of Malakdang, Amang Dagat</li> </ul>  <ul style="list-style-type: none"> <li>1789-1799 - Gov. Juan Casamara introduced large-scale lime mortar production</li> <li>1799 - Beginning of lime-and-stone construction. New architectural technology resulted in massive stone walls and thick cogon thatch roofs. These houses are extant and referred to as traditional Ivatan Houses. <i>(Hornedo ethnographic essays: 1962-1994)</i></li> </ul>	<ul style="list-style-type: none"> <li>1819-1820/21 - New Spanish settlements proved to be health hazards caused by the outbreak of cholera aggravated by the close proximity of houses. Population decreased considerably</li> <li>1831-1844 - Previous migrants from 1790's resistance movements who settled in Ivana returned to their ancestral houses. 1831 was also the advent of the construction of lime-and-stone public buildings</li> <li>1876 - Shows a rapid decrease in population. Possible reasons are outward migration and plagues</li> </ul>  <ul style="list-style-type: none"> <li>1890 - First attempt to introduce clay tiles for roofing. Extant house is the Beaterio. Zinc or G.I. roofing was also introduced.</li> </ul>  <ul style="list-style-type: none"> <li>1895 - Sto. Domingo Church, the first church with G.I. roof, was built in Basco</li> <li>1899 - The Philippines was sold to the United States by Spain.</li> </ul>  <ul style="list-style-type: none"> <li>1900 - Americans arrived in Batanes. Reinforced concrete construction technology was introduced. Concrete slabs replaced thatch roofs. Demand for large stones for houses diminished.</li> </ul>	<ul style="list-style-type: none"> <li>1900-1946 - American colonization brought about the school system resulting in a very high literacy rate enjoyed until today</li> <li>1941 - First landing of Japanese forces in Batan Island</li> <li>1945 - Ivatans reestablished the Commonwealth of Sabtang signaling the end of Japanese occupation and the American regime</li> <li>Demand for crushed gravel started for road and house construction</li> <li>G.I. roof proved to be less durable. Corrosion after 5 years was observed and resistance to typhoons was not as strong</li> <li>1918 - Earthquake of considerable magnitude leveled several southern towns in Sabtang and Batan islands</li> </ul>  <ul style="list-style-type: none"> <li>Maytub Houses (4-Sloped Roof Structures) developed from the Sinadumpan Houses (2-Sloped Roof Structures) to resist strong typhoons and earthquakes</li> <li>Heartwood was used as additional reinforcement for lime-and-stone walls. These were integrated as posts running from the basement all the way to the beams holding the truss system. The heartwood acts as wooden posts that keep the roof intact during earthquakes even if the walls collapse.</li> <li>2000 - Magnitude 7.1 earthquake destroyed several Ivatan houses. Tsunami tidal waves destroyed Chahahavayan Municipality located along coastal area. Massive campaigns to preserve Ivatan heritage houses started. UNESCO listing sought by provincial government.</li> </ul>

**Table 1 - Architectural Timeline of Ivatan Heritage Houses**

A r c h e t y p e	C l a s s i f i c a t i o n	D e s c r i p t i o n	U s e
L a g a t i t i	E A , W T	T y p e o f S h e l t e r O n l y F o u n d i n I t b a y a t I s l a n d	F o r T a k i n g R e f u g e f r o m H e a t a n d R a i n
R a h a u n g	E A , W T	C o m m o n S h e l t e r f o u n d a l l O v e r B a t a n e s	F o r T a k i n g R e f u g e f r o m H e a t a n d R a i n
J i n j i n / G i n g i n / C h i v u v u h u n g	E A , W T	I m p r o v e m e n t o f t h e R a h a u n g	U s e d a s K i t c h e n o r D w e l l i n g U n i t s
N i r i n d i a	E A , W T	V a r i a t i o n o f t h e J i n j i n w i t h W a l l P l a n k s	U s e d a s K i t c h e n o r D w e l l i n g U n i t s
M a y h u r a h e d	E A , W T	J i n j i n w i t h S t o n e B a s e	U s e d a s K i t c h e n o r D w e l l i n g U n i t s
S i n a d u m p a n	F A , L S W T	I m p r o v e m e n t o f W T S t r u c t u r e s / W a l l s a r e m a d e o f S t o n e a n d L i m e	U s e d a s K i t c h e n o r D w e l l i n g U n i t s
S i n a d u m p a n w i t h C r o w n	F A , L S W T	I m p r o v e m e n t o f S i n a d u m p a n / T r i a n g u l a r W a l l s h a v e F l a s h i n g	U s e d a s K i t c h e n o r D w e l l i n g U n i t s
S i n a d u m p a n - a - B i n e d b e r a n	F A , L S W T	I m p r o v e m e n t o f t h e S i n a d u m p a n / T h a t c h R o o f E x t e n d s O v e r T r i a n g u l a r W a l l s	U s e d a s D w e l l i n g U n i t s
B e a t e r i o	F A , L S W T	I m p r o v e m e n t o f t h e S i n a d u m p a n / R o o f M a t e r i a l M a d e o f C l a y T i l e s	O r i g i n a l l y U s e d a s N u n ' s C o n v e n t
M a y t u a b / N i t u a v a n	F A , L S W T	I m p r o v e m e n t o f t h e S i n a d u m p a n / R o o f h a s F o u r S l o p e s I n s t e a d o f T w o	U s e d a s D w e l l i n g U n i t s

**Table 2 - Classification of Extant Ivatan Heritage Houses**