

# Study on Architectural Aspect of Traditional Bamar (Myanmar) Timber Houses

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**Abstract:** *This paper present the study of common Bamar houses in Myanmar from the architecture point of view. The Bamar houses range from the very simple bamboo houses of poor people to the wooden, brick noggin buildings of average and rich people. But here in this paper, only the most common and simple type of dwellings used by the majority of the Bamar people which are constructed by wood or timber are considered. They are generally simple, one and two storied wooden houses.*

*In this world, the traditional timbered houses exist as identities of region. House is the main essential shelter to provide people's desire and activities. It is an available and functional space to protect from extreme weather and wild animals, to do daily agricultural routine, to relax and enjoy their times, to live in and for extended family and etc.... It is a place for resting, eating, sleeping, storing, surviving with their economy, celebrating cultural belief, activities and ceremony and giving privacy. Today, as mostly changing technologies and materials, their functional allocating, shaping form and identities, construction techniques relating use of local materials are changing and lost. The research objectives are to control, maintain and to be documented.*

**Key Words:** *Architectural Aspect, Traditional Timbered House, Traditional Identity, Vernacular Architecture, Vernacular House.*

## 1. INTRODUCTION:

This paper investigates the importance attached to issue of house typologies in the drive to improve timber housing in the 3 villages of Mandalay and Sagaing regions. It is a vernacular architecture and study of housing types in these three areas during the period of late 19<sup>th</sup> century and at present. These three areas are notable for the extensive survival of physical ruins of houses dating back to at least the late nineteenth century. When combined with substantial contemporary documentary evidence relating to the local physical condition, this constitutes a significant resource with which to examine the issue of rural housing reform. As a result, it becomes possible to consider questions in Bamar House that we cannot necessarily ask of other regions of the country, where there is less surviving physical and documentary evidence.

In this world, house is the main essential shelter to provide people's desire and activities. It is a basic need for human being. House existed as a functional space and shelter to protect from extreme weather and wild animals rather than to do daily agricultural routine, to relax and enjoy their leisure times, to live in together with extended family and etc.... It is a place for resting, eating, sleeping, storing, surviving with their economy, celebrating cultural functions, activities and belief. Then, it is providing privacy. Today, as mostly changing technologies and materials, their functional allocating, shaping form and identities, construction techniques relating use of local materials are changing and lost.

## 2. AIM:

The aim and objectives of this research are

- To conserve of Bamar traditional house.
- To know the living style of Bamar national.
- To study and record of Bamar traditional houses in vernacular architectural aspect of rural area.

## 3. METHODOLOGY:

In this paper, the following methodologies are done on three case-study areas in central dry zone of Myanmar. The methodologies of research are done by measuring on the timber framed houses which are existed in 3-villages and these are nearly 40 years old houses. And make questionnaires for their sociological issue related with houses. Some statistical data are collected and to make a good record to issue Bamar character influenced on their house. It uses the quantitative method for data collection and analysis. Primary data were collected by field survey and by measuring and taking photos the houses. The secondary data were collected by related literatures. It is divided into 3 parts, first one is data collected by field survey and second is producing some selected house drawings and the third is analysing

the functional usage area and site allocation, reflected with their daily routing This research will study comparative analysis of the traditional houses in some kind of architectural aspects, architectural features such as spatial requirements, functional allocation. Finally, the author will also give some suggestion and alternative idea for future developments.

#### 4. INDIGENOUS RACES:

Myanmar is a large country and belong 7 states and 7 divisions. There are about 135 national races here in the country: only about 8 are principle race including the Bamar people. And of course there are variation in culture, traditional belief and custom among them. Some have own dialect, through majority speaks Bamar as a common language.

*The **Bamar** (Burmese: မြန်မာလူမျိုး; MLCTS: ba. ma lu myui.; IPA: [bəmà lùmjó]) are the dominant ethnic group in Myanmar. Bamar people live primarily in the Irrawaddy River basin and speak the Burmese language, which is the official language of Myanmar. Bamar customs and identity are closely intertwined with the broader Burmese culture. The Bamar people are often imprecisely called "Burmese", though this term in contemporary usage can refer to any citizen of Myanmar, regardless of ethnicity.[4]*

The people of Bamar could be divided basically into three ethnic groups. Tibeto-Burman, Mon-Khmers, and Thai-Chinese. The Tibeto-Burman includes the Bamar, The Rakhine, the Chin and the Kachin. The Bamar forming the majority of the union populations are established mainly in the Central Belt of Myanmar, especially in Mandalay and Sagaing Region including the Rakhine State and Taninthayi Division. The Mon-Khmer races came from the east down the Mekong Valley to settle in the lower valley of the Thanlwin and the delta of the Ayeyawaddy that become their homeland. Thahtone, Bago, Mot tama become at various times the capital of the Mon Kingdom. The third ethnic group, the Tai-Chinese, came from the north-east of Myanmar, and includes the Shan people closely related to the Thais, the Kayin and various small tribes, mostly concentrated in the east and the Shan Plateau. These hill tribe people, remaining their mountainous strongholds, have retained their ethnic and cultural identity. (Fig.1. Map-1)



Fig (1) Myanmar Map

#### 5. PHYSICAL FEATURE AND CLIMATE:

Geophysical features of the country also vary from high hills, mountainous regions, the plains, the coastal regions and deltas. Influences of traditional Belief and customs when building a house, Bamar people have their own traditional beliefs and customs, and they influences from the time of the site selection till the time the house is completed and occupied. Some operations are even carried out in ceremony, especially for setting out the peg of the house, creation of the posts, fitting of the stair and the occupation of the house. In traditional beliefs of Myanmar, choosing the common cement date for setting out pages pegs to build a house is very important. It is believed that the ground is governed by different types of guardians (known as “MYE KAN “in Myanmar).

In each day of the month, and the guardians influence very much on the good and bad of the owner to be. The guardians for each of the waxing day and wanting day of the month and the result of the influences are charted in the following tables:

#### 6. STUDY AREA:

In this paper , three villages are selected as a sample namely, Kyunkalay village, Amarapura Township, Shwe Yin Mar village, Myin Mu Township, Min Nan Thu Village, Bagan Nyaung Oo Township. Because of its existence and 2014 census report 92% of the Buddhism live there. Mandalay and Sagaing region are the origin of Bamar people’ settlement and timber is abandoning for using building materials in rural area.

## 7. SELECTED TIMBER HOUSES:

In this paper selected timber houses are categorized as follows:

Group (A) – Houses from Kyunkalay Village, Amarapura Township, Mandalay Division

Group (B) – Houses from Shwe Yin Mar Village, Myin Mu Township, Sagaing Division

Group (C) – Houses from Min Nan Thu Village, Nyaung Oo Township, Mandalay Division

### 7.1 HOUSE GROUP TYPE-I, KYUNKALAY VILLAGE, AMARAPURA TOWNSHIP, MANDALAY DIVISION

The house group type (I) is studied in Kyunkalay Village, Amarapura Township, Mandalay Region. It has 260 housing and there are 1300 people. Mostly are Bamar people. Two types of houses are selected and considered. Most of them are stilt houses because of flooding when Ayyarwaddy River is flooded in raining season.

#### 7.1.1 U HLA AUNG'S HOUSE – 780 SQ-FT



Fig (2) Photos of under storey –House Type (I)

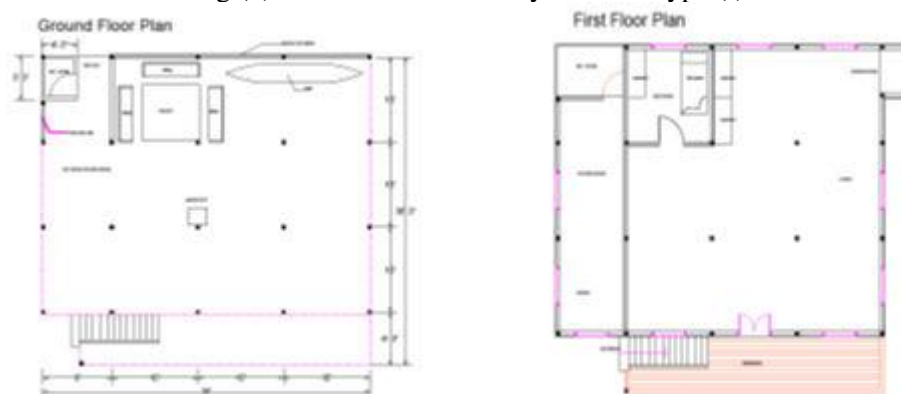


Fig (3) House Type (I) Plan



Fig (4) House Type (I) front & back elevations



Fig (5) House Type (I) left and right side elevations



Fig (6) House Type (I) side elevation photo

7.1.2 Daw Win May's House- 768 SQ-FT

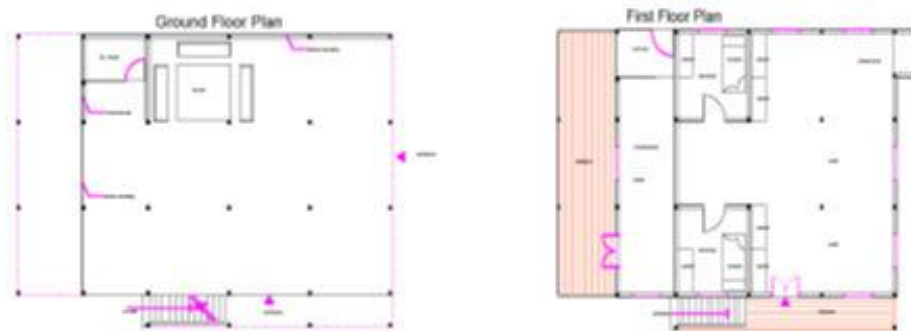


Fig (7) House Type (II) Plan

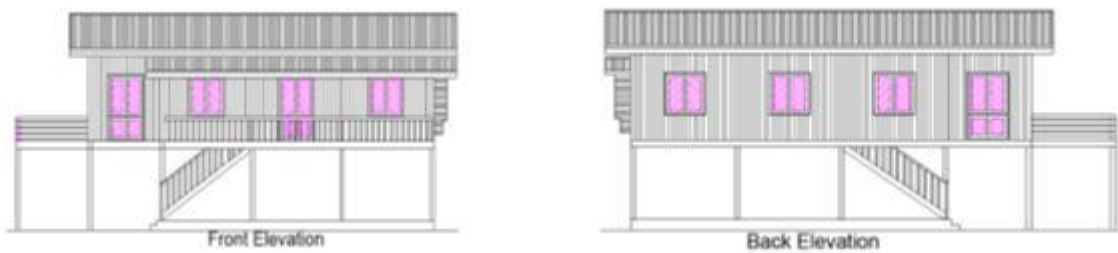


Fig (8) House Type (II) front & back elevations

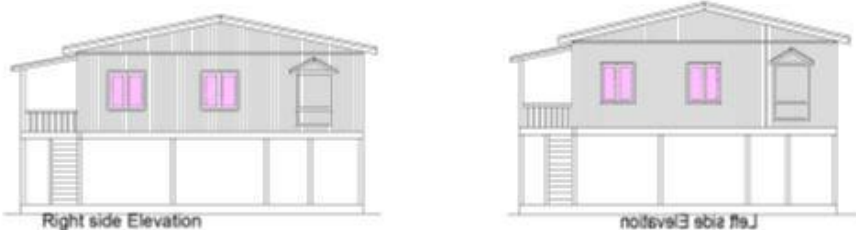


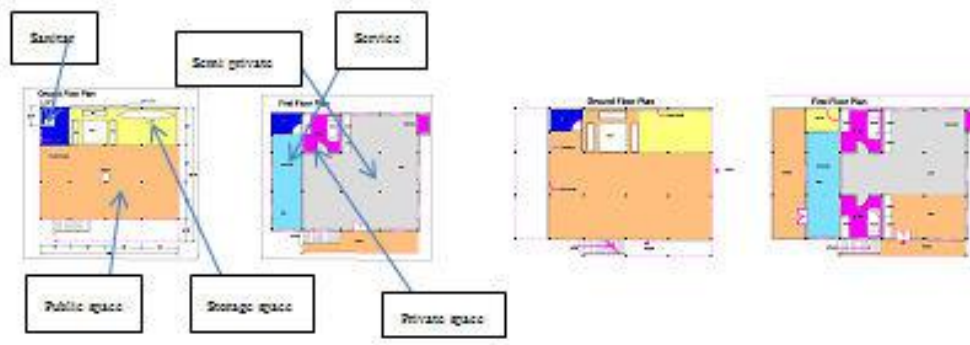
Fig (9) House Type (II) left and right side elevations



Fig (10) Side elevation photo

7.1.3 Area Utilization in Houses

In House Group Type (I), the public space are more square feet than other spaces. As it can be seen in following plan providing the private space is not sufficient for all house hold member.



7.2 HOUSE GROUP TYPE-II, SHWE YIN MAR VILLAGE, MYIN MU TOWNSHIP, SAGAING DIVISION

The house group type (II) is studied in Shwe Yin Mar Village, Myinmu Township, and Sagaing Region. It has 200 housing and there are 1000 people. Mostly are Bamar people. Two types of houses are selected and considered. One storey and two storeyed housed are as follow:

7.2.1 Daw Myint Myint- 900 SQ-FT, (5- members / household)

This house is area of 900 square feet and belong 5 members of house hold



Fig (11) House Type (I) Site Plan

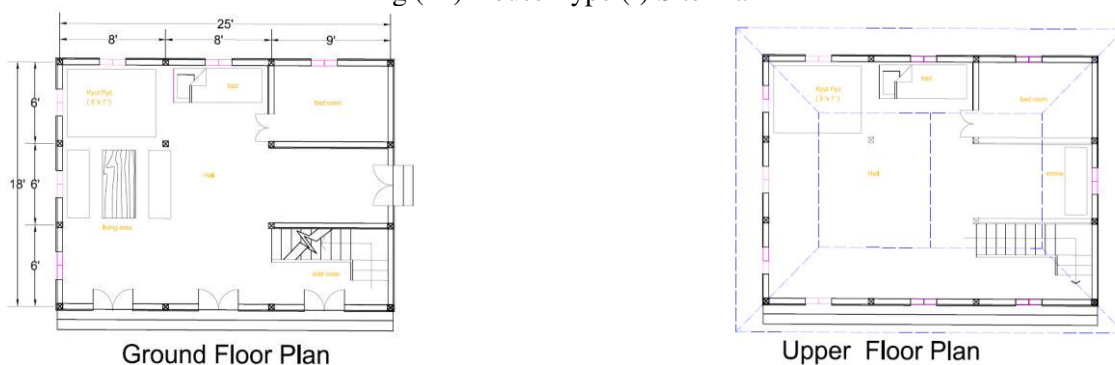


Fig (12) House Type (I) Plans

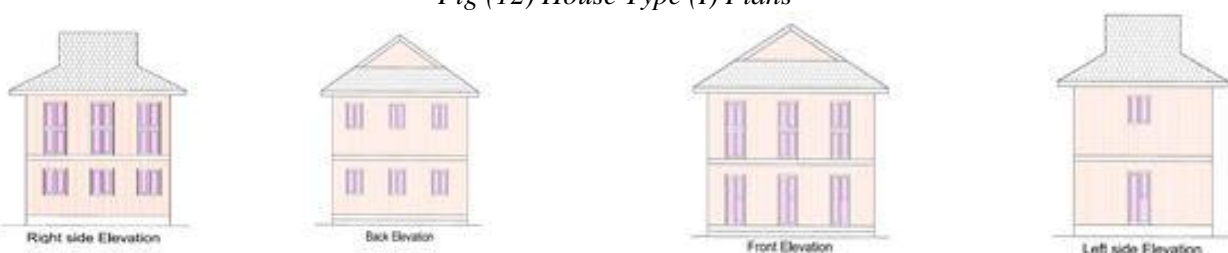


Fig (13) House Type (I) left and right side elevations

Fig (14) House Type (I) front elevations

7.2.2 U Hla Aung- 1368 SQ-FT, (4- members/household)



Fig (15) House Type (II) Site Plan



Fig (16) House Type (II) Plans

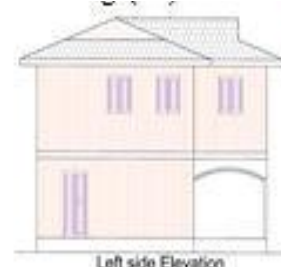
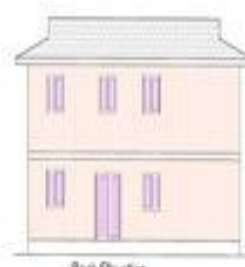
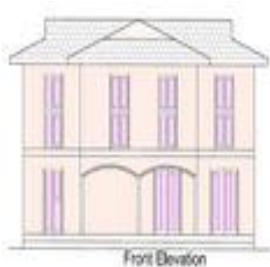


Fig (17) House Type (II) front & back elevations

Fig (18) House Type (II) left and right side elevations

7.2.3 Daw Htay Sein-840 SQ-FT, (6 - members /household)

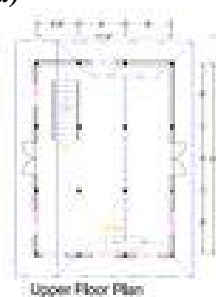


Fig (19) House Type (III) Site Plan



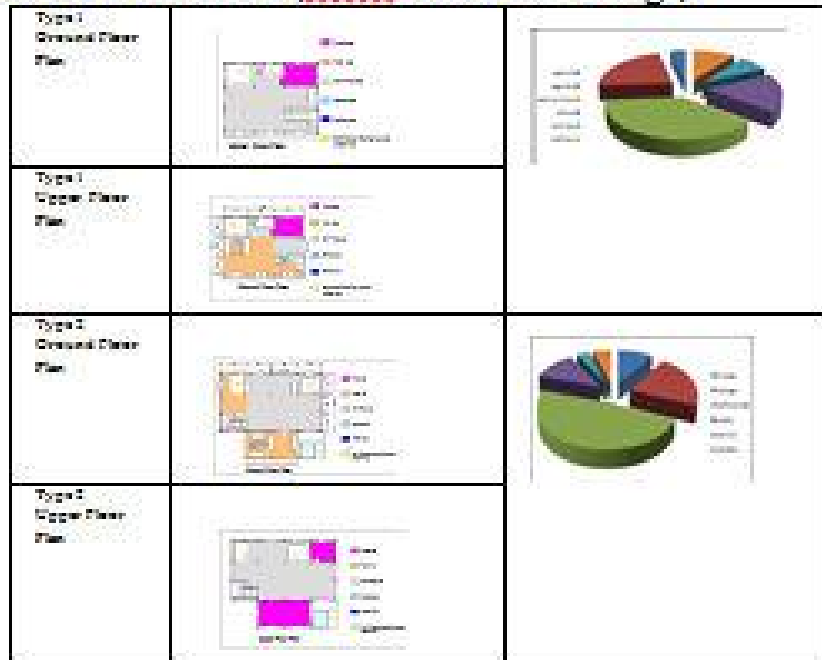
Fig (20) House Type (III) left and right side elevations

Fig (21) House Type (III) front & back elevations

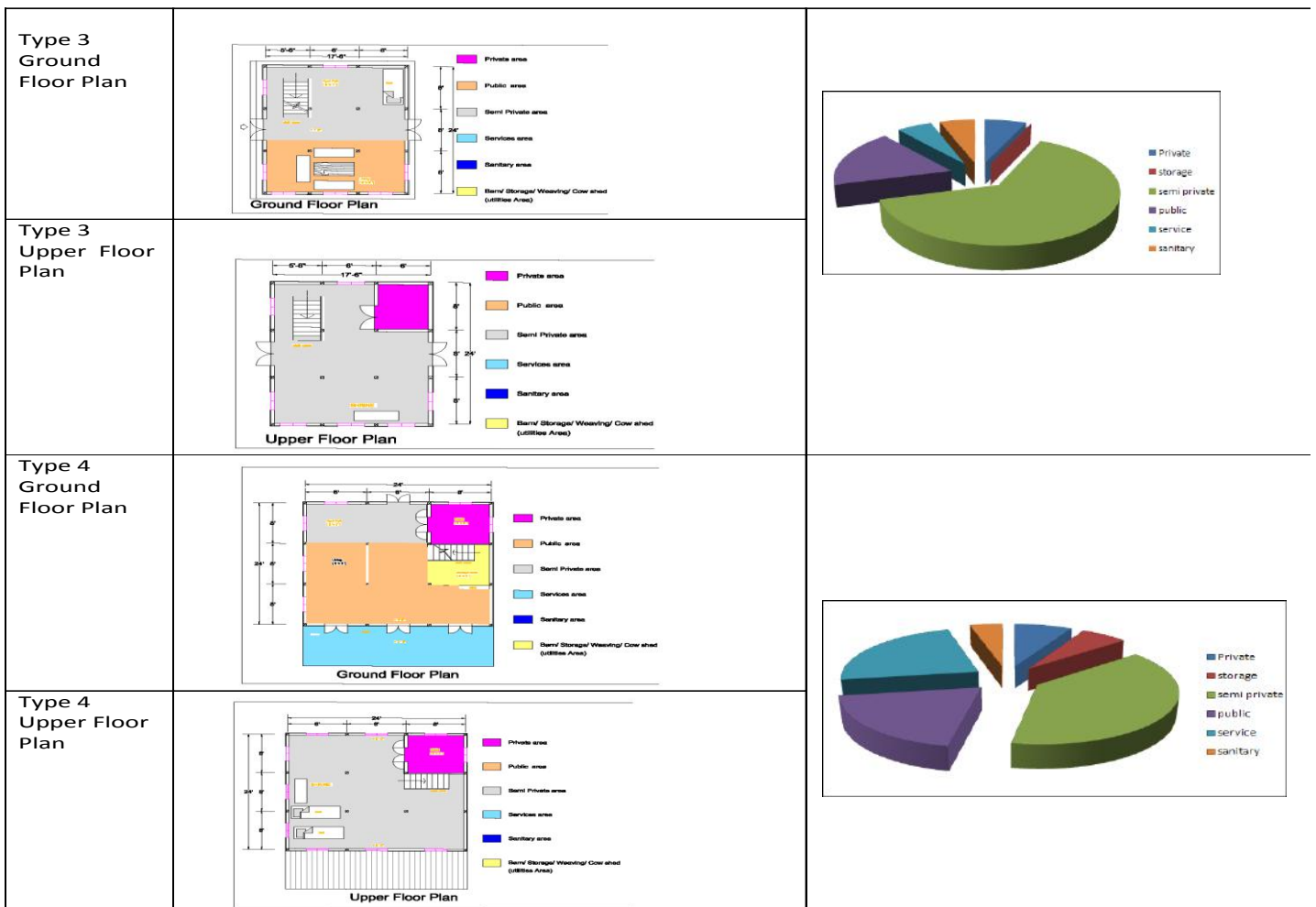
7.2.4 Area Utilization in Houses

In House Group Type (II), the public space are more square feet than other spaces. As it can be seen in following plan providing the private space is not sufficient for all house hold member.

Area Utilization (Shwe Yin Mar Village)  
Area Utilization (Shwe Yin Mar Village)



Area Utilization (Shwe Yin Mar Village)



**7.3 HOUSE GROUP TYPE-III, MIN NAN THU VILLAGE, BAGAN NYAUNG OO TOWNSHIP, MANDALAY DIVISION**

The house group type (III) is studied in Min Nan Thu Village, Nyaung Oo Township, and Mandalay Region. It has 186 housing and 930 populations. Mostly are Bamar people.

**7.3.1 Daw Mya Khin-1596 SQ-FT, (6 - members /household)**

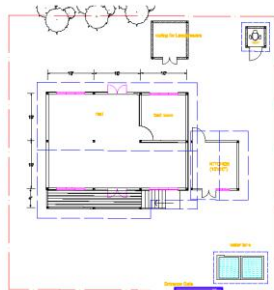


Fig (22) House Type (III) Site Plan



Fig (23) House Type (II) Plans



Fig (24) House Type (II) front & back elevations



Fig (25) House Type (III) left and right side elevations

**7.3.2 Daw Aye Nyein-3232 SQ-FT, 6 - members /household)**

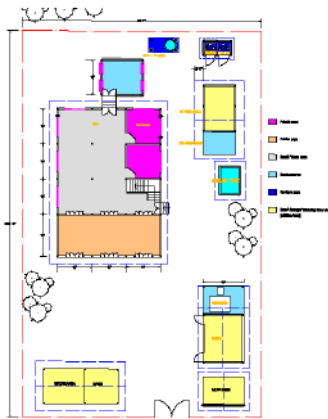


Fig (26) House Type (II) Plans



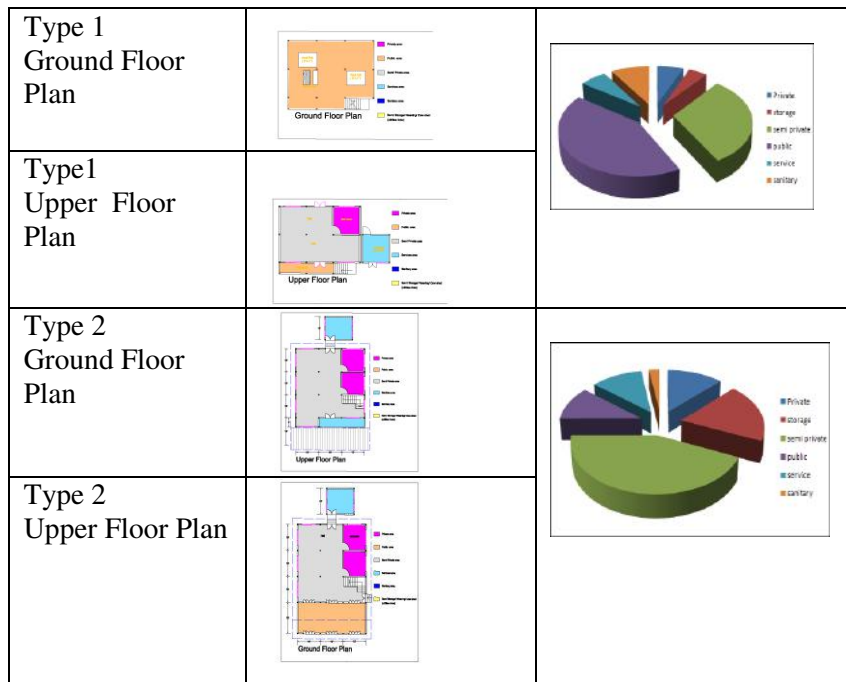
Fig (27) House Type (II) front & back elevations



Fig (28) House Type (II) front & back elevations

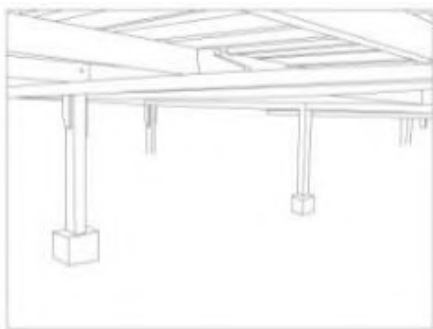


7.3.3 Area Utilization



8. CONSTRUCTION TECHNIQUES:

8.1 CONSTRUCTION OF POST AND GIRDER:



Most of the houses are raised from the ground level. Timber posts are fixed on 18” height concrete footing to protect flood in low lying area and decaying by weather the timber post.[see Fig.(30)]

Fig (29) Post and Footing Assembling.

8.2 ROOFING AND ROOF FRAME STRUCTURE:

Roofing materials are available in local Market. Corrugated Iron Sheet is mostly used as roofing in timber building. Other roofing materials as thatch, Bamboo-mat and timber strip are also used on roof top covering. The fixing techniques are shown in Fig (301).

8.3 STAIR CONSTRUCTION AND VENTILATION:

Fig (31) shows the timber stair construction and stair details mostly using in two storeyed Bamar houses.

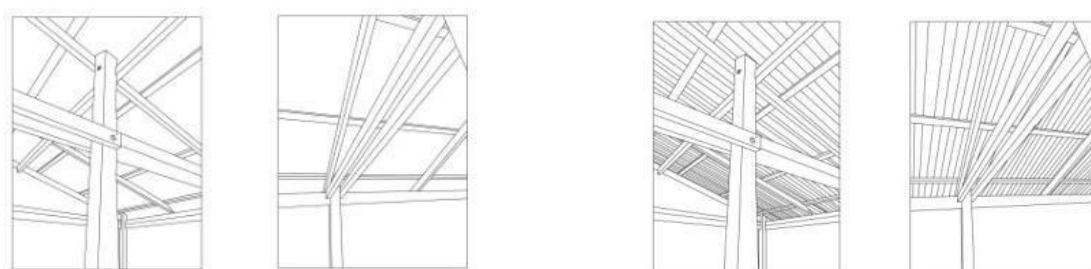


Fig (30) House Type

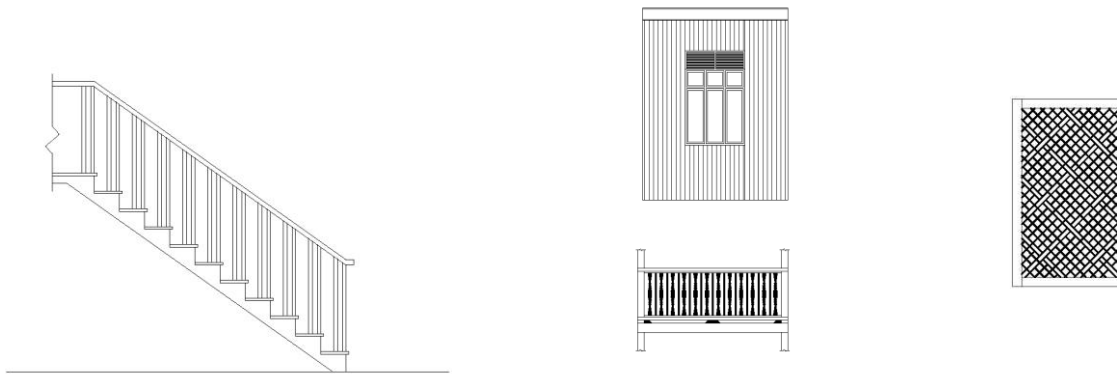


Fig (31) Stair, verandas and ventilation

## 9. RECOMMENDATION AND SUGGESTION:

### *FUNCTIONAL SPACE OF BAMAR TIMBER HOUSES*

The differences in house plan depend on the requirement of the family that is going to use it. I) Average family size of Bamar People, II) Principle livelihood and the daily activities of the common Bamar families and III) functional space are focused and mainly recommended.

#### **Average family size of Bamar People**

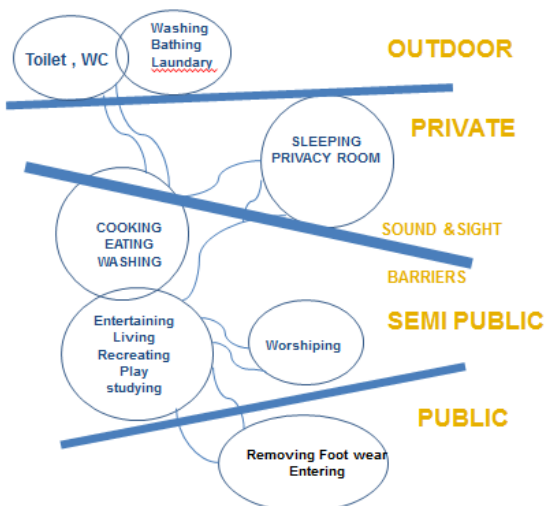
There are about 10.8 million families in Myanmar and the average family size is taken is 4.4. [1] Traditionally Bamar families used to stay together, even when the children were grown up and get married. And this point should also be considered as one of the influencing factors on the building size in each individual case. Sometime the fact that some families commonly stay in the same house should not be ignored.

#### **Daily life and activities**

The following essential functions for a person are needed to survive in his living space. These are sleeping, eating, living, recreating. So that basic essential space such as bed room, dining room, living room, and the water closet are required. The differences in the type of principle works called weaving, black smith, carpentry, pottery, lacquer ware making and other types of family cottage industries especially based on handicraft may sometimes modify the plan of the house to some extent. Sometime such necessary space cannot be incorporate directly into the house, so such function may sometimes be housed in a separate space within the compound.

#### **Functional space**

#### **FUNCTIONAL DIAGRAM OF COMMON BAMAR HOUSE**



As shown in Fig, public, private and semiprivate space are divided and related. Bamar people live not much individual space like other national race, even they have own tradition and culture and belief. Especially, daughter or parent bed room is getting privacy and separated. Livelihood space is mostly placed in compound. Sanitary affair has to make a spate block but attached.

## 10. CONCLUSION:

In conclusion, there are so many differences of house typologies in middle Myanmar, but only timber house built by local materials and using local carpenter or builder. So they are not much creative but getting space for human needs. **The research objectives are to control, maintain and to be documented the Bamar traditional timbered houses and their existence as identities of region.**

## 11. ACKNOWLEDGMENT:

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