

# Modernization of the Vernacular Malay House In Kampong Bharu, Kuala Lumpur

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## Abstract

Kampong Baharu (KB), literally meaning "New Village", is located in central Kuala Lumpur, Malaysia. It came into existence in 1899 as a reserved area only for ethnic Malays. Over time, urban growth resulted in the settlement losing its agricultural value and now it is a unique preserved housing area for Malays. Many vernacular Malay houses that were built in the 1900s still exist in KB. These houses were not original vernacular houses and were transformed and modernized into unique typologies that lie between the traditional and modern typologies.

This study defines these houses as 'modern' vernacular Malay houses and attempts to explore the typologies of such houses built during the 1900s in KB. More than 100 vernacular Malay houses in KB were investigated and analyzed with respect to three major elements of order of the traditional Malay house elevation: roof, wall and pillar. As a result of this study, several representative 'modern' vernacular typologies were proposed. It is important to document these typologies because they demonstrate how traditional vernacular Malay houses were transformed into modern houses through the modernization process.

**Keywords:** traditional Malay house; vernacular house; Kampong Bharu

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## 1. Introduction

### 1.1 Background and aims of the study

Rapoport (1969) defines vernacular houses as buildings of the folk tradition, which is the culture of the majority and their life. The forms of vernacular houses persist for a very long period of time and are finally adjusted until they satisfy most of the cultural, physical, and maintenance requirements. Rapoport also emphasizes the role of owner participation in the design process and construction, and individual variability and differentiation.

Oliver (1997; 2006) defines vernacular houses as being related to their environmental context and available resources. They are usually owner- or community-built, utilizing traditional technologies. All of these vernacular house forms are a result of long-term modification and adaptation, shared experience and innovation that is approved by the community. They may be adapted or developed over time as their needs and circumstances change.

It is often difficult to distinguish between 'traditional' and 'vernacular'. Ariffin (2001) suggests that time is a key distinguishing factor. Tradition usually refers to the space and time of the past. In contrast, vernacular has less to do with time, as it is more place-specific. Brunskill (2000) contrasts 'vernacular architecture' with 'polite architecture', where architects intentionally integrate stylistic elements of design for aesthetic purposes that go beyond the functional requirements of a building.

To summarize, vernacular houses are buildings for common living, built with local materials and techniques, in which an owner can participate. They are persistent and have transformed over a long period of time in a specific place.

Malaysian traditional houses are basically post-and-beam structures raised on pillars, with gabled roofs. They were designed and built by the people themselves to meet specific needs, accommodating the values, economies and ways of life of the culture that produced them.

Throughout the colonization and modernization period of the early 20<sup>th</sup> century, the British brought multi-racial immigrants into Malaysia, which resulted in a uniquely plural society.<sup>1,2</sup> After the Second World War, international architectural trends were also introduced in Malaysia.

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Traditional houses in Malaysia were modernized over time to reflect the environmental, cultural and historical context in which they existed.

More than 100 traditional and vernacular Malay houses that were built in the 1900s still exist in Kampong Bharu.<sup>3</sup> They are constantly deteriorating and vanishing, due to social changes and the pressure of urban redevelopment. Within this context, we define traditional style houses in Kampong Bharu as vernacular houses.

The typologies of vernacular houses in Kampong Bharu differ from original traditional houses with respect to their design and spatial layout, and the choice of building materials and building technique. They were transformed and modernized into unique typologies, where they are relatively 'modern' buildings but also arguably part of the 'vernacular' building tradition.

The main purpose of this study is to record and document the existing valuable vernacular houses in Kampong Baharu. This study also identifies stylistic characteristics and classifies the typologies of existing vernacular houses in Kampong Bharu.

We hope that this study addresses the gap between the traditional Malaysian housing history and modern housing history, which has not yet been clearly defined.

### 1.2 Scope and methodology of the study

This study aims to identify the typologies of vernacular houses, focusing on issues of stylistic characteristics but excluding space layouts.<sup>4</sup> Vernacular houses in the Kampong Bharu area were mostly built during the 1900s.

The process of selecting vernacular houses, which is a very important starting point for this study, was as follows:

First, a vernacular house must be made of wood, with its main floor raised up off the ground, not including extension parts. It must maintain some major elements of the traditional Malay house elevation such as: the traditional roof style, and traditional elements of the wall and pillar.

Second, this study originally reviewed 111 cases, which were classified as traditional Malay houses in the report.<sup>5</sup>

Third, we conducted field surveys<sup>6</sup> based on the two previous selection criteria and finally chose 121 cases for the purpose of analysis in this study.

We documented the typologies of selected cases by photographing and sketching. Regarding the year of construction, we made our best guess based on documents provided by Malay Agriculture Settlement Committee (M.A.S.) in Kampong Bharu, neighbor's memories and other related articles.<sup>7</sup>

## 2. Understanding Kampong Bharu

Kampong Bharu is located in central Kuala Lumpur, the capital city of Malaysia. It is a reserved residential area for the settlement of Malay ethnic groups, literally

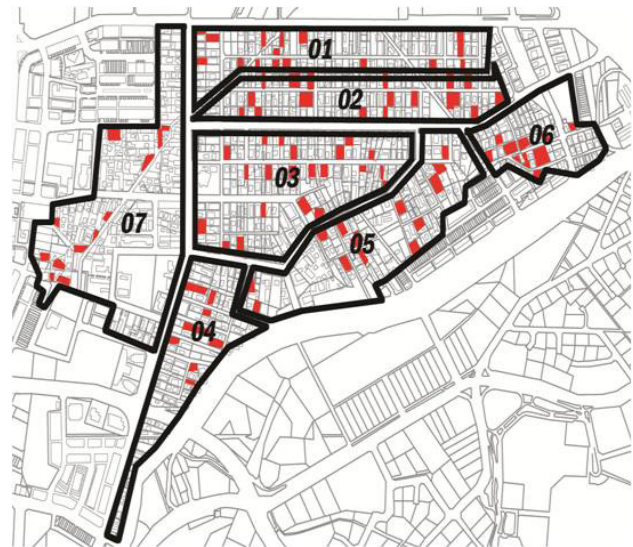


Fig.1. Locations and the Number of Cases in KB

Table 1. The Number of Cases in KB

No	Name of area	Meaning of area	Number of case (Total:121)	House number
01	Kg. Atas a	AboveA	38	A1~A38
02	Kg. Atas b	AboveB		
03	Kg. Masjid	Mosque	22	M1~M22
04	Kg. Hujung Pasir	The End of Sand	11	H1~H11
05	Kg. Paya	Marsh	13	Y1~Y13
06	Kg. Pindah	Move	17	N1~N17
07	Kg. Periok	Pot	20	R1~R20

meaning "New Village".

Prior to the arrival of the British in 1874, land in Malaya was owned by the community. Land was plentiful and there was no need for an elaborate regulatory system of land ownership at that time. The development of land was approved by a *sultan*<sup>8</sup> or community leaders. As there was no particular regulation, everyone could own land with the proper permit. The British then created a regulation where land could be bought and sold. Although this system was familiar to the British and was in their best economic interest, it was unfamiliar to the Malays (Wiggins, 1993). Such change of land system quickly caused an influx of other ethnic groups and brought rapid urbanization. Native Malay groups could not adapt to this rapid growth and changing environment and started to leave the city.

To stop such a phenomenon and to protect Malay ethnic groups, the British Administrator established Kampong Bharu on 223 acres between the *Klang* River and *Batu* Road in 1899, with the main purpose of protecting the Malay Agricultural Settlement (M.A.S). Malays who settled in this area were given from 1/3 to 1/2 acres of land free of charge (Wiggins, 1993). There was an elected community leader in-charge of the area in the M.A.S. that was given a special autonomy stature by the local government.

With this background, the development of Kampong Bharu was relatively slow, compared to other areas. As

a result, this area was formed as a unique space that still encompasses both Malay traditional style houses and an ethnic Malay lifestyle. There is continuous discussion recently about the redevelopment of this area in Kuala Lumpur due to high land value of the location. The number of immigrants from Indonesia has been increasing recently because Kampong Bharu is near to the city area and rent is comparatively cheap. The culture of life in Kampong Bharu is changing and traditional houses are left vacant and in a deteriorating condition or are even destroyed in some cases.

Therefore, it is very urgent to study and document the existing traditional houses in Kampong Bharu.



Fig.2. The View of the Kampong Bharu

### 3. Analysis of the Form of Elements of the Vernacular Malay House in Kampong Bharu

#### 3.1 Transformation of Roofs

The roof is the most prominent visual feature of the traditional Malay house. Most architectural studies have categorized traditional Malay houses according to their roof form type (Abdul, 1996; Chen, 1988; Lim, 1987; Gibbs, 1988). There are mainly four types of roof form in traditional Malay houses, they are: the *Bumbung Panjang* (PJ)<sup>9</sup>, *Bumbung Lima* (LM)<sup>10</sup>, *Bumbung Perak* (PR)<sup>11</sup> and *Bumbung Limas* (LMS)<sup>12</sup> (Lim, 1987; Chen 1988).

Table 2. The Types of Traditional Malay House Roofs

House type	Bumbung Panjang (PJ)	Bumbung Lima (LM)	Bumbung Perak (PR)	Bumbung Limas (LMS)
Diagram				

Out of the total 121 cases selected for the purpose of this study, there are 52 cases with PJ style roofs (42.97%), 47 cases with PR style roofs (38.84%), 4 cases with LM style roofs (3.30%) and 18 cases with other roof styles (14.87%). Diagrams of each roof form are shown in Table 3.

Table 3. The Roof Forms

Core	Roofs		Diagrams	No. of cases Total;121	Pictures	Types	
	Front	3D					
PJ	PJ	3D		49	21	27 <sup>a)</sup>	R1
						18 <sup>b)</sup>	R2
						2 <sup>c)</sup>	R3
						1 <sup>d)</sup>	R4
	PR	1 <sup>e)</sup>	R5				
PR	PJ	3D		51	19	5 <sup>f)</sup>	R6
						12 <sup>g)</sup>	R7
						1 <sup>h)</sup>	R8
	PR	3D		26	7	1 <sup>i)</sup>	R9
						5 <sup>j)</sup>	R10
						7 <sup>k)</sup>	R11
						14 <sup>l)</sup>	R12
	5 <sup>m)</sup>	R13					
	LM	1 <sup>n)</sup>	R14				
	LM	PJ	3D		8	5	3 <sup>o)</sup>
2 <sup>p)</sup>							R16
PR		3D		2	1	1 <sup>q)</sup>	R17
						1 <sup>r)</sup>	R18
LM		1 <sup>s)</sup>	R19				
Others					13 <sup>u)</sup>	R20	

\*Case Number : a) A5, A6, A16, A18, A22, A28, M3, M4, M7, M10, M13, M18, H6, Y3, Y6, N1, N3, N4, N9, N13, N17, R1, R3, R4, R5, R18, R19, b) A2, A4, A13, A15, A21, A32, M1, H7, H8, H11, Y10, N2, N6, N8, N10, N11, N14, R20, c) A31, N5, d) A29, e) M15, f) A14, A35, N7, N15, N16, g) A1, A7, A12, A23, A37, M19, M20, M21, H1, H9, R7, R17, h) Y9, i) A34, j) A10, A33, M2, M14, Y1, k) A9, A26, A27, A38, M12, R6, R15, l) A8, A17, A19, A20, A36, M5, M6, H3, H10, Y4, Y11, Y12, Y13, R11, m) A30, H4, H5, Y5, N12, n) A11, o) M17, Y7, R16, p) R12, R14, q) R13, r) A3, s) R8, t) A24, A25, M8, M9, M11, M16, M22, H2, Y2, Y8, R2, R9, R10



Combinations of a main roof and secondary roof are found as follows; PJ, PJ+PJ, PJ+PR, PR, PR+PJ, PR+PR, PR+LM, LM+PJ and LM+PR. The most popular types in KB are PJ(26), PR+PR(25), PJ+PJ(23) and PR+PJ(17).

Even though the number of LM style roofs is small, they show a very unique type of transformed roof. Some roofs also have a predominantly different appearance concerning the range of roof pitch and proportion<sup>13</sup>, shown in Table 3. under "others". These can be explained as 'colonial style roofs'<sup>14</sup>. They show a unique roof form which is a hybrid of both the western and traditional.

In general, modern materials such as zinc sheets and asbestos sheets were more frequently used than *attap*, wooden shingles and clay tiles, which constituted the main materials of traditional roofs.

Regarding roof decorating elements, wooden panels, called '*tebar layar*'<sup>15</sup> on the gable ends of a traditional Malay house, served as a passage for ventilation as well as important sculpture decorations for the façade. These decorations, however, were simplified or often closed with wall panels (Fig.3.).



Fig.3. '*tebar layar*' (M3, R20)

### 3.2 Transformation of Walls

The walls of the earliest Malay houses were made of bamboo, woven into panels using traditional patterns and reinforced with timber studs. Wallboards were arranged either vertically or horizontally or in combination. One of the most important features in the façade is a series of shuttered windows which create a unique stylistic characteristic of the traditional Malay house.

The façade order can be divided into three parts: top, middle and bottom. The top part contains carved and latticed panels for ventilation, while the middle and bottom parts consist of windows.



Fig.4. A '*Tingkap*' (A13: Left) and '*Jendela*' (A16: Right)

The walls of vernacular houses Kampong Bharu consist of horizontal or vertical types of timber boards. Out of the 121 cases, most (111 cases) were designed

Table 4. The Wall and Window Pattern

Walls		Types of windows	No. of cases total;121	Pictures	Types				
Timber panels	Windows								
Horizontal panel	Short window: <i>tingkap</i>	No vent.	56		W1				
		With vent.					W2		
	Short window: glass louver	No vent.		6 <sup>e)</sup>				W3	
		With vent.				17 <sup>d)</sup>			W4
	Tall window: <i>jendela</i>	No vent.		1 <sup>e)</sup>				W5	
		With vent.				39	25 <sup>f)</sup>		
	Tall window: <i>modern jendela</i>	With vent.		13 <sup>g)</sup>				W7	
		Punched window				No vent.	15		
	With vent.			5 <sup>i)</sup>		W9			
	With vent.							9 <sup>j)</sup>	
Vertical panel	Short window: <i>tingkap</i>	No vent.	3		W11				
		With vent.				2	1 <sup>d)</sup>		W12
	Punched window: glass louver	With vent		1	1 <sup>m)</sup>				
Others			8 <sup>n)</sup>		W14				

\*Case Number : **a)** M7, H2, N4, N10, R5, R20, **b)** A5, A7, A11, A19, A25, A36, A38, M9, M14, H4, H5, H9, H10, Y1, Y5, Y7, Y8, N9, N12, R1, R2, R8, R12, R15, R17, R18, R19, **c)** A4, A6, A14, A28, M19, H8, **d)** A12, A15, A23, A24, A29, A35, A37, M2, M5, Y2, Y3, Y6, Y9, Y11, N2, R11, R16, **e)** R4, **f)** A2, A13, A16, A30, A32, A33, M1, M3, M6, M13, M16, H7, H11, Y10, Y12, N1, N3, N5, N6, N7, N8, N13, R3, R7, R9, **g)** A8, A9, A17, A20, A26, A27, M8, M12, M20, M21, H1, H3, R6, **h)** A3, **i)** M4, Y4, Y13, N11, N17, **j)** A31, A34, M11, M17, H6, N15, N16, R10, R14, **k)** R13, **l)** A10, **m)** M18, **n)** A1, A18, A21, A22, M10, M15, M22, N14

with horizontal wall patterns (91.73%), 2 were designed with vertical wall patterns (1.65%), while 8 were designed with other wall pattern styles (6.61%). (Table 4.)

There are three major types of windows: the 'Tingkap' (short window), the 'Jendela' (tall window) and the punched window. The balustrades behind the shutters, made from carved wooden strips or perforated planks, have an aesthetic value besides being used for safety purposes (Fig.4.).



Fig.5. Transformation of Wall (Y5, M21, and M22)

In this classification, 'Jenang pintu'<sup>16</sup>, a window frame, represents a key feature in identifying window patterns. In the traditional window pattern, both 'Jendela' and 'Tingkap' have a 'Jenang pintu'. Although 'Tingkap' and 'Jendela' contain original features, the proportion and materials of the windows were modified. The window proportion became slimmer, and the interval between the windows became closer. Glass or colorful glass was used instead of wooden blinds. The pattern of the window frame also adopted the western style. The punched window is a more modern and western style window, which does not have a 'Jenang pintu'. In this type, glass louvers, a relatively new technique, were identified (Fig.5.).

### 3.3 Transformation of Pillars

Traditional Malay houses are generally characterized by a raised floor due to the hot and humid tropical environment in the region with heavy rainfall. Pillars supporting the building are therefore very important structural elements. A pillar consists of a 'pelapit tiang'<sup>17</sup> and 'tiang'<sup>18</sup>.

Wooden pillars were found more when the floor height was shorter. As the height increased, brick and concrete pillars were often used, and the utilization of empty space became more efficient.

We found that some vernacular houses were double story. With the increasing height of the pillars, people could use the spaces often formed underneath for different purposes and functions such as living areas or rental spaces. This was sometimes done intentionally to increase space efficiency.

We identified houses with varying pillar heights. Out of the 121 cases, the number of houses with a pillar height range of 0~1100mm was 35 (29.0%), the number with a pillar height of 1100~1600mm was 60 (50%), and the number with a pillar height above 1600 mm was 19 (16%).

Table 5. shows the classification of pillars by height as well as by materials. The first category involves traditional wooden pillars, the second involves modern materials such as brick, stone and concrete, and the third involves pillars with closed sides. The underneath space is often walled in by perforated blocks or concrete.

We also identified changes in materials and decorations. In P2, P5 and P8, we identified modern materials such as bricks, stone and concrete. Regarding the height of the pillar, the houses whose structures consisted of wooden pillars were not found in the

Table 5. Pillar Height and Material

Pillars			No. of Cases (121)	Pictures	Type	
Height	Form	Material				
0 ~ 1100 mm		Timber	16 <sup>a)</sup>		P1	
		Brick, Concrete	35	8 <sup>b)</sup>		P2
		Blocked	11 <sup>c)</sup>		P3	
1100 ~ 1600 mm		Timber	18 <sup>d)</sup>		P4	
		Brick, Concrete	60	22 <sup>e)</sup>		P5
		Blocked	20 <sup>f)</sup>		P6	
1600 mm ~		Timber	0 <sup>g)</sup>		P7	
		Brick, Concrete	19	4 <sup>h)</sup>		P8
		Blocked	15 <sup>i)</sup>		P9	
Others			7 <sup>j)</sup>		P10	

\*Case Number : a) A18, A21, A28, A32, M1, M2, M10, H11, Y3, Y10, N4, N5, N13, R4, R18, R19,, b) A5, A34, M9, H9, Y11, N9, R3, R14, c) A6, A12, A16, A29, M7, M16, M20, M22, Y12, N6, N14, d) A13, A22, A30, A31, A33, M3, M13, M15, Y8, N2, N3, N7, N8, N10, N11, R12, R15, R17, e) A4, A7, A14, A19, A25, A27, A35, A36, M4, M14, M17, M19, H8, Y4, Y7, Y13, N12, N15, N16, R5, R9, R16, f) A1, A2, A10, A11, A23, A24, A26, A37, A38, M5, M11, M12, M21, Y1, Y2, Y5, R1, R2, R7,R13, g) -, h) H1, H4, H6, R10, i) A3, A8, A9, A15, A17, A20, M6, M8, H3, H5, H10, Y9, R6, R8, R11, j) M18, H2, H7, Y6, N1, N17, R20



category of houses with a pillar height above 1600 mm. This may have happened because wooden pillars are not suitable to support heavier and higher structures.

It is worth noting that some vernacular houses addressed the issue of ventilation underneath the floor by closing the sides using modern perforated bricks. We could not identify this design in traditional Malay houses (Fig.6.).



Fig.6. Transformation of Pillar (H1, A24)

#### 4. The Typologies of Vernacular Malay Houses

The representative typologies of vernacular houses in Kampong Bharu were drawn by the mutual correlation analysis between each element of the elevation of the houses: roof, elevation, and pillars.

As a result of this analysis, we selected the four outstanding typologies that achieved the highest correlation. Fig.7. illustrates the different correlations between each of the elements.

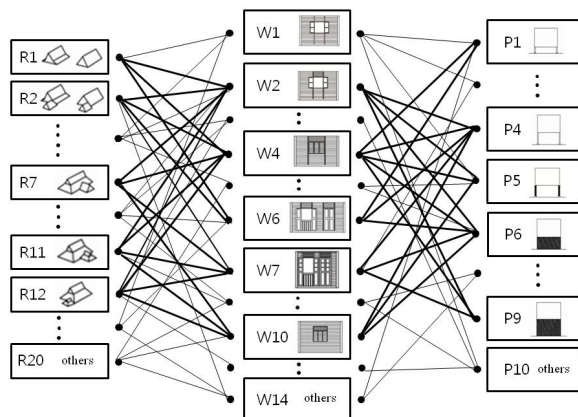


Fig.7. The Correlation Analysis between Elevation Elements

##### 4.1 Typology 1. Traditional Vernacular House: *Bumbung Panjang* house

In this typology, we found that R2-W6-P1, R2-W6-P4 and R1-W6-P4 were the typologies with the highest correlation. This is the model of the *Bumbung Panjang* house, which is the oldest and most widespread house type on the West Coast of the Malay Peninsula. (Chen, 1998) It has an elegant, steeply inclined roof with a long central ridge. This typology consists of a basic single rectangular space of *rumah ibu* and *semrambi* with an additional reception space; the '*anjung*'<sup>19</sup>. Most vernacular houses had their roofs replaced with sheets of galvanized iron, generally called 'zinc', or asbestos-cement sheets. The '*tebar layar*' decorations were on the gable ends, which were simplified or sometimes closed with wall panels.

The façade preserved the traditional order of timber panels with respect to dimension, design and material. The main feature of the façade is on row of *jendela*, a full-length shuttered windows made of solid timber panels or timber louvers, providing both ventilation and an outdoor view. It also has traditional balustrades. In some cases, we identified carved or latticed panels above or below the windows. These panels allow air and light into the house.

The pillars are indigenous wood pillars and are comparatively neither high nor thick. The staircases connecting to the *anjung* are very simple wooden structures (Fig.8.).



Fig.8. A Traditional Vernacular House: *Bumbung panjang* house (H11, A13)

##### 4.2 Typology 2. Traditional Vernacular House: *Bumbung Perak* house

In this typology, we found that R7-W7-P6 and R7-W2-P5 are the most highly correlated. The degree of correlation is the same as that of the traditional aesthetics of 'Typology 1'. The *Bumbung Perak* roof is one of the major roof forms in the Malay Peninsula. It is also known as the *Bumbung Potongan Belanda* or '*Limas Potong Perak*' or 'Dutch style roof ridge' It was believed to have been influenced by the British and Dutch house styles. This type and its variations are mostly found in the states of Penang, Perak, Selangor and Johor. (Chen, 1998: 25)

The *Bumbung Perak* house has a main gambrel roof. An *anjung*, protruding from the main roof, forms its own small and simple *Bumbung Panjang* roof. The space layout is 'T'-shaped. The roofs of this typology were usually covered by tiles or modern roofing materials such as zinc.

It is most similar to 'Typology 1' with respect to elevation design, although the main emphasis is on the façade of the *anjung* and *serambi*. In some cases, there are rows of *jendela*. Glass windows are installed however in the wooden shutters, providing a sense of a luxurious and beautiful facade. In other cases, western style windows were adopted. The roof edge of the *anjung* is often covered with decorative wooden *fasica*<sup>20</sup> boards, adding to the elegance of the house.

The traditional *Bumbung Perak* house usually has masonry pillars and concrete staircases. In this typology, most of the cases have thick masonry or stone or concrete pillars. Sometimes the space underneath the floor is walled by concrete or bricks. In some cases, elaborate curved stair cases are found, and are the outstanding feature of the house that is similar to Melakan house. (Fig.9.).



Fig.9. A Traditional Vernacular House:  
*Bumbung perak* house (M21, A7)

#### 4.3 Typology 3. Colonial Vernacular House

In this typology, we found that R12-W7-P9, R11-W5-P9 and R12-W4-P9 are the most highly correlated.

The main roofs of this typology are the *Bumbung Perak* as in typology 2. The roofs of the *anjung* are also in the *Bumbung Perak* style. The roof of the *anjung* may continue downwards to cover the staircase, which is decorated with timber latticework.

This typology comprises full double story buildings with 'L' or 'T' shaped space layouts. The ground floor is constructed using stone pillars with concrete in-fill walls. The first floor is a traditional wooden structure. The elevation of the first floor however is quite different from that of the original traditional house. The proportion of full-height windows became slimmer and glass windows are installed in the wooden shutters. In some cases, western style punched windows are commonly found.

This style originated in the Anglo-Indian bungalows built in the early 1800s and later evolved into the 'Straits Eclectic' style due to the social, ethnic and cultural change occurring in colonial Malaya. During that period, a combination of the Chinese, Malay, Indian and European architectural styles was adopted through the memories of immigrant owners and their pattern books. Houses were designed according to the owner's taste, which resulted in a unique and eclectic style. This typology is a hybrid of Malay and Colonial culture. Further research will address more specific classifications in this typology (Fig.10.).



Fig.10. A Colonial Vernacular House (A9, A17)

#### 4.4 Typology 4. Modern Vernacular House

In this typology, we found that R12-W10-P5 and R12-W4-P5 are the most highly correlated. Put into context, this typology should be understood more as a result of the localization of western housing styles rather than the modification of traditional styles. It can be argued that this typology can be classified as a vernacular house<sup>21</sup>. Compared to original vernacular

houses, the floor is lifted, the slope of the roof is gentler and the length of the eaves is also shorter. Extra eaves are often added for later extensions, but the basic layout follows that of traditional houses.

With respect to the elevation, it is quite different, tending to a more modern style. Walls are surrounded by horizontal timber boards, but windows do not follow the traditional style. Western style punched windows or traditional *tingkap* (short windows) are commonly found in this typology. They adopt modern glass louvers to allow maximized natural airflow while maintaining privacy at the same time. In some cases, modern projecting canopies are added to protect windows from heavy rain.

There are no wooden pillars in this typology. Usually the underneath is walled or consists of concrete pillars that extend to form walls. The main entrance staircases can have different materials or simpler designs, but they generally follow the Malay traditional layout. Variations exist in this typology and it still needs to be classified in more detail (Fig.11.).



Fig.11. A Modern Vernacular House (Y13, Y4)

### 5. Conclusions

Through the investigation of vernacular houses in Kampong Baharu, this study analyzed vernacular elements of a house style in terms of a roof, a wall and a pillar. Four representative typologies of vernacular houses were proposed: Traditional Vernacular 1 and 2, Colonial Vernacular and Modern Vernacular.

The traditional style house may be defined as the true vernacular house of Malaysia, as it is the houses of the common people, designed based on the owner's taste or hometown tradition, and built by local technicians. It has also persisted for more than 100 years, and was modified according to the residents' needs and social changes.

Vernacular houses in Kampong Bharu are comparatively new and modern compared to traditional houses. They can be classified as a new housing typology, which attempts to adhere to traditional lifestyle even though it adopts new building materials (practicality) while maintaining traditional roof forms and space layout (tradition). These houses represent a unique Malaysian modern housing style, which lies between the spectrum of tradition and modernity. Although this study identifies only four representative typologies of vernacular houses in Kampong Bharu, several innovative and valuable typologies of vernacular houses can still be found there.



In further research, an analysis of space layout can be integrated with the results of this study. Other more systematic and comprehensive typologies regarding vernacular Malay houses can be proposed.

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### Notes

- <sup>1</sup> 'Plural society' can be defined as a society comprising two or more elements of social order which live side by side, yet without mingling, in one political unit. This society is characterized by cultural diversity, politically organized cultural communities and the salience of ethnicity. Furnival, J.S. (1980) 'Plural Society' in Evers, Hans-Dieter(ed.) *Sociology of South East Asia: Reading on Social Change and Development*, Oxford University Press, Kuala Lumpur, quoted in Saari (1990) p.3.
- <sup>2</sup> The population of Kuala Lumpur, Malaysia consists of Malays (56.1%), Chinese (33.1%), Indians (10.29%) and other minority groups. MTR(Mid Term Review) of the Fourth Malaysia Plan 1981-1985, 1984.
- <sup>3</sup> We revised the spelling of "Kampong Baharu" into "Kampong Bharu" as stated in the Enactment 1897.
- <sup>4</sup> This study focuses on form rather than the house plan layout.
- <sup>5</sup> UiTM(2008) , *Planning Feasibility Report; Urban Redevelopment of Kampong Baharu*, Kuala Lumpur.
- <sup>6</sup> The first survey was conducted from 22th and 24th January, 2008. The second was conducted from 4th to 19th of May, 2009 and the third in October 2009.
- <sup>7</sup> From an interview with Mr. Shamsuri B. Suradi, Honourable Secretary of Malay Agriculture Settlement committee and a brochure from Badan Warisan, Heritage Malaysia, we could guess the construction year. Using our best guesses, we found that most of the vernacular houses investigated in this study were built from 1900 to the 1950s except some cases of typology 4: modern vernacular houses.
- <sup>8</sup> *Sultan* means 'a ruler in some Muslim countries' in Malay.
- <sup>9</sup> PJ is the most common roof on the West Coast of Malaysia. The earliest Malay house form, the *Bumbung Panjang* house, consists of a long single roof and double-pitched roof. Hence it was translated by Syed (2001) as the 'long-roof type'. Being a simple 12-column type house, it is easy to extend and modify the roof. As a result, this roof form was modified into various types according to its region and extension.
- <sup>10</sup> LM, literally meaning the 'five ridge roof', is a hipped roof. It consists of a big ridge part on top and hip valleys expanding in four directions. The roof covers the *rumah ibu* and the *serambi*. This style was influenced by colonial Dutch and British house forms. It has higher headroom which allows the use of modern furniture (Lim, 1987).

- <sup>11</sup> PR is a roof influenced by Dutch house forms in the Colonial period. Its more complex gable ends dictate the use of modern roofing materials like tiles or zinc and others. It is a gambrel roof - a hipped roof with gable-like ends. This house type is found extensively along the West Coast especially in the northern states. (Chen, 1988; Lim, 1987).
- <sup>12</sup> LMS is a pyramidal roof rarely found in houses. It is usually seen in mosques and *surau*, and is commonly found in Malacca and the southern states on the West Coast.
- <sup>13</sup> The traditional Malay house roof has a high and steep slope of as much as 45 degrees. (Abdul, 1996).
- <sup>14</sup> This style usually extends in front of the core roof and does not have a ridge part on the top. Hip valleys expand in four directions. '*Tebeng layar*' is a panel for gable ends.
- <sup>15</sup> '*Jenang pintu*' means 'a jamb; a post that forms the side of a door or window' in Malay.
- <sup>17</sup> A stone or concrete used as a footing to the column; also called '*Alas tiang*' or '*pelapik*'.
- <sup>18</sup> A column, a pillar or a post.
- <sup>19</sup> '*Anjung*' means 'a porch; facade; covered front part of a building' in Malay.
- <sup>20</sup> '*Fasica*' boards are the horizontal bands demarcating the elevational division between wall panels and a roof. (Syed, 2001; 164).
- <sup>21</sup> When we selected the vernacular houses in Kampong Bharu, they had to be wooden structures whose basic space layout was in the traditional style.

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