

In Search of the Origins of the Malay Architectural Heritage.

Author: Ar. Norwina Mohd Nawawi, Dr. Noor Hanita Abdul Majid, Dr. Noor Aziah Mohd Ariffin

Dept of Architecture, Kulliyah of Architecture and Environmental Design, International Islamic University of Malaysia, Kuala Lumpur.

norwina19@gmail.com, noorhanita@gmail.com, noaz62@yahoo.com

Abstract

Teaching of architectural history to students of architecture leaves so many gaps to the rationale of its claim with no appropriate answer on the Malay heritage. The similarities found in the architectural styles in the Southeast Asian region have triggered many theories among architectural writers and critics. It is important to understand the development of civilisation in the said region that is profoundly connected to the architectural establishment in both styles and typologies. This paper intends to discuss selected theories and review some examples of architectural forms found in Thailand, Indonesia, Malaysia, Cambodia, Laos PDR and Vietnam. The analyses of case studies suggest the similarities and differences of the architectural forms that will explain the origins of the Malay heritage.

Keywords: Malay heritage, architectural forms and styles

INTRODUCTION

The passing of time and the circumstances that befall our ancestors in the region had gradually eroded and blurred out the richness of our built environment to mere indigenous and taken-for-granted traditional dwellings in a rural setting. History as published and read widely often always glorify the rulers, the rich and the famous with colonial masters emerging as saviours. The life and the living habitat of commoners only fill up in the age old stories passes down from mouth to mouth of farmers, fisherman, tradesmen and perhaps artisans. Tracing our childhood to yesteryears and searching the habitat we once lived from pages of old albums, postcards, magazines and books, a tinge of nostalgia cling as to how our built environment had evolved. To be teachers of architectural history of own heritage requires in depth knowledge of the subject. Reference upon reference made on available literature shows incomprehensible picture of mythical insinuations as the evidence of exotic east, illegible old writings and confirming the oriental myths. Our youths, depleted of their built heritage and lived within the alien built environment of international flavour, can only listen to our 'story', a lamentation. Without passion on the subject there will be no lead. What has shapes, forms and decorations signify the habitat? What technology have they insinuated in their craft to reach such height? Were there really a ritual in construction and choosing of building site? Is there any correlation at all among the regional habitat to reckon with? Hypothesis and perception rules till the truth are found. On the origin of the Malay architectural heritage, our heritage, the quest is long and wide. For now, this paper intends to uncover, humbly, tangible aspects of the built forms or styles and typologies of the regional architecture. Discussion henceforth will contribute towards the building

up of facts which will eventually be the near truth basis of the Malay architectural heritage for future generation.

A picture paints a thousand words. Students of architecture memorises pictorial language better than grasping the nitty-gritty of the architectural language embedded in the local terms. Descriptive intonation fails to pick their imagination apart from the technicalities portrayed through constructive make up of local building materials and obvious functional usage of spaces. Glued to their digital cameras and hasty tours, sketching exercise that provides tender senses to their being, have dull their sensitivity towards details their forefathers had created and worked on through passing of skills to descendents.

Importance of the Search

Current design projects have been concentrating on producing designs that are accepted internationally as 'good architecture'. Nevertheless, the designs lacked local meaning and attachment. Mohammad Tajuddin (2001) in his book had posed the question, 'what is the Malaysian architecture identity?' The book was written to instigate the idea that architects should design buildings that is suitable to the values of the Malaysia social and cultural contexts. In addition, many of the recent architects, such as Hijjas Kasturi, KenYeang and others, have now propagated their own definitions and feedbacks to define the Malaysian Architecture.

But what is the Malay architecture? Historians have had in many accounts suggested that the movement of people from the mainland Asia towards the peninsular and islands in the southern region of East Asia. The theory is that the movement had been one of the important governing factors in deciding the architectural style of this region. The similarities are now seen on the surviving architectural heritage in the form of *masjids*, palaces, houses and etc. However, most discussion on the Malay architecture dwells mainly on the traditional houses. Great buildings such as Chandi Borobudur in Java and Angkor Wat in Cambodia of stone structure had inscriptions that reflected similar vernacular interpretation of these traditional wooden houses. The story told on reliefs and carvings showed similar architecture of houses raised on stilts, which some historians called it "raise on pile", to belong to the place of origin of those that came either to Java or stayed in the Angkor kingdom. However, due to the climatic conditions of the region, most of those buildings depicted had not survived to this date. Nevertheless, if some of those had survived, God willing, it may have lead us to gain some understanding on the origins of our Malay Architectural heritage.

THE METHODOLOGY

The presentation of this paper will dwell on the search of architectural origins within several assumptions. The first Man, Prophet Adam A.S, was created as a civilised being and landed on the island of Sri Lanka before united with his wife, Hawa in Saudi Arabia. As the verse in the Al-Quran quote: *"O Mankind, We created you from a single (pair) of a male and a female, and made you into nations and tribes, that you may know each other ..."* Surah Hujurat 49:13.

In other verses, Allah had spelt out his bounty to his servants that everything has its place on earth and that everything works in the way that Allah had ordained. Harun Yahya's *Error of the Evolution of Species* pointed out that "People who set aside preconceptions on the other hand, clearly understand that all living species came into being by the wish and creation of God, Lord of the worlds. This is the sole explanation for the magnificent diversity of species, and looking for any other is a waste of time." In his writing on *Historical Lie*, he states that "The evolutionist historical perspective studies the history of mankind by dividing it up into several periods, just as it does with the supposed course of human evolution itself. Such fictitious concepts as the Stone Age, Bronze Age and Iron Age are an important part of the evolutionist chronology. Yet when archaeological findings and scientific facts are examined, a very different picture emerges. The traces and remains that have come down to the present—the tools, needles, flute fragments, personal adornments and decorations—show that in cultural and social terms, humans have always lived civilized lives in all periods of history", is the basis of this study.

The discussion is then developed upon the hypothesis that the ethnic Malays, as a civilised race, thousands of years ago, due to reasons unknown to us, had migrated from mainland Asia towards the archipelago. In line with this, the paper will attempt to describe current case studies to explain the common architectural typologies found within the region that includes Malaysia, Indonesia, Cambodia, Thailand, Laos PDR, Vietnam and the Philippines where possible. The definition of Malay adopted in this paper is confined to people inhabiting the Malay Archipelago specifically the Northern Malay Peninsula, and parts of the western Malay Archipelago (Hood, 2006 and American Heritage Dictionary, 2009). The paper will focus only on the traditional houses and vernacular *masjids* which are the primary building typologies that relate with the way of life of people in this region. Houses are selected by virtue of being the primary type of shelter, and *masjids* are chosen due to their importance that marks the dissemination of Islam as one of the most widely adopted faith by the Malays after period of Hinduism and Buddhism in the Indianised Kingdom of Langkasuka, Majapahit and Sri Vijaya.

As an architectural paper, a short description describing common layout of the settlement on Malay communities are made. The selected building typologies, house and masjid, as representative of the local architecture are discussed on comparative basis.

As a preliminary research, the outcome of this study will by no means be final or conclusive. It is hope to be able to seek a common understanding with an open inquest to opinions, assumptions and other perceptions based on the physical attributes of both architectural typologies chosen towards determining the true Malay architectural heritage, if any. This research welcomes feedback as a catalyst to gear up further research towards informing our generation their heritage. Inshaallah

BACKGROUND

The Malay People

The Malays (people), as defined by Sejarah Melayu (2010) and Britannica Encyclopedia online (2010) are "any member of an ethnic group of the Malay Peninsula and portions of adjacent islands of Southeast Asia, including the east coast of Sumatra, the coast of Borneo, and smaller islands that lie between these areas. The Malay culture has been strongly influenced by that of other peoples, including the Siamese, Javanese, and Sumatran. The influence of Hindu India was historically very great, and the Malays were largely Hindus before they were converted to Islām in the 15th century". Sejarah Melayu (2010) quoted that for almost 2000 years the non-stop trading traffic between India and the archipelago as well as with China, Champa and Cambodia had provided a rich background influences emerging through trade, culture and inter-marriages.

The architectural and other heritage of the Malays are reflected in this close knit society of many talents, rulers, warriors and seafarers through feudal social organisation with a sharp division between nobility and commoners. As quoted in Britannica Encyclopedia (2010), the distinction between nobleman and commoner still exist today but replaced by appointed and elected officials subject to a parliament and other elected bodies. Today, the architecture through new economic policies bridging the divide had blurred the class distinction to economic distinction of low-income, middle class, the corporate as well as high ranking government officials and rulers.

The Search

Although there are many aspects of studies to Malay architectural heritage, this paper discussed the search for Malay architectural heritage through architectural styles and typologies. Due to limitation of resources, the discussions are geared towards analysis of selected case studies that are representative of a particular region believed to be part of the greater Malay descendants. The case studies described the architectural styles from the basic vernacular traditions and its development through the influences of migration, political and historical changes. Climatic and cultural influence playing major role in the physical built form of the case studies are highlighted where relevant. The chosen case studies are described in Table 1 and 2 that analysed masjids and houses, as selected typologies, respectively. The parameters selected for analysis covers elements that defined the architectural form of the masjids and houses. The parameters are technique or construction methods (on ground or on stilts), main building material (timber/ brickwork/ stone), roof forms (pyramidal or pitched roof, single or tiered roof) and details or ornamentation. Planning layout of both masjid and house, when possible, are described vividly to emphasis the similar and differed usage of spaces found in the region.

THE CASE STUDIES

The Masjid

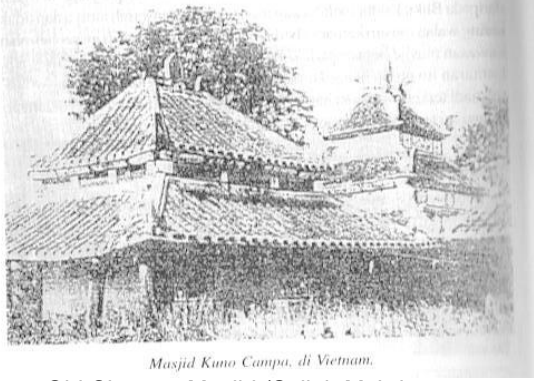

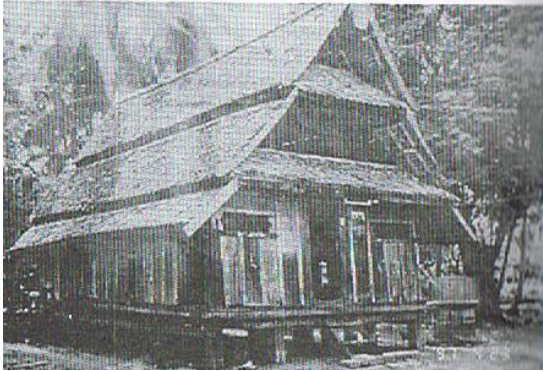
If time is the yardstick for tracing the evolvement of vernacular architecture in this region, the masjids can be one reliable sample. Due to its importance as a public/ community building, the

recordings on masjids are better documented and traceable. Being a community asset, the masjids are also better preserved in comparison to other building typologies. In this section masjids from Cambodia, Vietnam, Laos PDR, Malaysia and Indonesia, in order to trace the origins of the vernacular architectural forms, where possible were acquired.

Ghafar Ahmad (1999) states that vernacular mosques with regional influence can be distinguished by their two or three-tiered roofs with decorative roof ridges and clay tiles, octagonal minarets and buildings which are square in shape. The regional influence mosques in Malaysia are similar to that of the old mosques built in many parts of Indonesia, Thailand, Cambodia and Vietnam. This is partly because some of the Malays in Malaysia are the descendants of various ethnic groups from Indonesia, Thailand, Cambodia and Vietnam through natural migration, trades and intermarriages. The Malays of Javanese descent came from the Island of Java, the Malays of Banjar descent originated from Kalimantan on the Island of Borneo; the Malays of Bugis descent were from the Island of Sulawesi; while the Malays of Kelantan and Terengganu were probably a mixture of Cham of Vietnam, Khmer of Cambodia, a Thai and even of middle-eastern descent. In Malaysia, Ghafar Ahmad (1999) state examples of the vernacular mosques with traditional influence are Kampung Laut Mosque, Nilam Puri, Kelantan (1730's), Langgar Mosque, Kota Bharu, Kelantan (1871), Paloh Mosque, Ipoh, Perak (1912) and Kampung Raja Mosque, Seremban, Negeri Sembilan (1924); while examples of the vernacular mosques with regional influence are Tengkeri Mosque, Malacca (1728), Kampung Keling Mosque, Malacca (1748), Old Mosque of Kampung Masjid Tinggi, Bagan Serai, Perak (1929) and Tanjung Keling Mosque, Malacca (1930). The studies below may differ slightly in its interpretation of 'traditional' and 'regional' influence on vernacular architecture.

Table 1: Case Studies: *Masjid*

Regions / Case Study	Architectural Form
	On ground/ stilts Timber/ brickwork/stone Pyramidal/ pitch roof form Single/ tiered roof Sprawl/staggered layout Ornamentation
Cambodia	Not available
Vietnam.	Old Masjid Champa was one of the oldest masjid in the region. It was built in the 11 th and 14 th century during the Islamic period in Champa, This masjid had two types of roofs covering the prayer area. The main part was covered by the three tiered roof, while the adjacent space was attached with a two tiered roof. Although the built form looked very much similar to Kelantan Masjid Kampung Laut, the ornamentation at the top of the roof differ slightly. Masjid Champa had "Makara" while Masjid Kampung Laut had ducktail as its ridge ornamentation. Both are constructed of

 <p><i>Masjid Kuno Campa, di Vietnam.</i></p> <p>Fig. 1 Old Champa Masjid (Salleh Mohd Akib.(2003)</p>	<p>timber</p>
<p>Laos PDR</p>	<p>Not available</p>
<p>The Philippines</p>	<p>Not available</p>
<p>Thailand</p>  <p>Fig. 2 Wadi Al-Husein Masjid, Telok Manok, Pattani, Thailand.</p>  <p>Fig.3 Masjid Nat Tanjung, Aur Village, Pattani,</p>	<p>Masjid Wadi Al-Hussein was built approximately in 1624 or 17th century part of a madrasah or traditional school , in a village of Teluk Manok, Narathiwat, Pattani, Southern Thailand amidst padi fields and a small stream. Constructed initially from huge hardwood for the basic space, the masjid was expanded all around as serambi to accommodate the congregation. The expansion includes the additional tiers to the roof forms. Formerly of atap, the roof was replaced by singgora tiles. The whole building is raised on stilts which is similar to former Masjid Besar Kota Bharu now replaced by colonial Masjid Muhammadi and the preserved Masjid Kg Laut further south in Kelantan. This structure was built with timber and has a combination of pitched and pyramidal roof form. Ventilated floral carved panels and quranic verses are located above the windows and doors. The roof was built in two tiers with roof ends that resemble a combination of Java, Thai and Terengganu traditional houses. The gable ends of the second tier are slightly curved that strongly suggested the Thai influence. Unlike Masjid Kampung Laut where the minaret for the calling of azaan was constructed separately, there is no minaret in Wadi Al-Hussein masjid but a tower which forms part of the building to call for prayers.</p> <p>Masjid Nat Tanjung at Aur village, Saiburi District, Pattani, Thailand was built more than 359 years ago at Bendang Jung. Formerly it was located near the coast and had been a pit stop for traders and sailors. Due to the erosion effect, it was relocated to its present site. Almost but not the same to Malaysia's Masjid Kampong Laut, the architecture of Masjid Nat Tanjung has a gable end to its three tiered roof known</p>


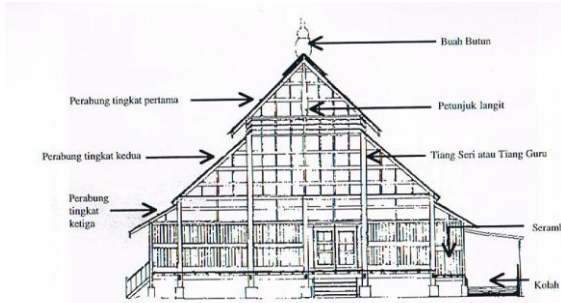
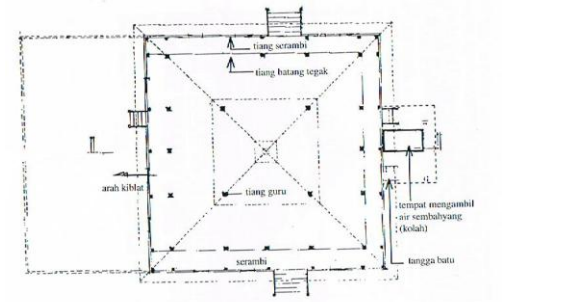
<p>Thailand (Salleh Mohd Akib.(2003)</p>	<p>a “<i>pemeleh</i>” roof. Constructed of hardwood such as chengal, other parts are using bamboo strips. Originally no nails were used until it was moved to new place at a later date.</p>
<p>Malaysia</p>  <p>Fig.4 Masjid Kampung Laut at original site (Raykinzoku (2010)).</p>  <p>Fig.5 Sectional elevation of Masjid Kg Laut (Zulkifli Hanafi (2001))</p>  <p>Fig.6 Layout Plan of Masjid Kg Laut (Zulkifli Hanafi (2001))</p>	<p>Masjid Kampung Laut was belief to be built between 14-17th century based on many theories. The architecture is also believed to be part of the evolution of sacred architecture of the Hindus or chandi based on the square plans (the mandala). Differed from its Indian continent, in the Malay archipelago, the square plans are raised with four sacred columns or <i>tiang seri</i> to hold the lofty roof which can seen from afar. The masjid was built with basic spaces. The area for resting and feasting called <i>Balai Orang Kaya</i> or <i>balai lintang</i> based on contribution made by the local <i>orang kaya</i> was added around the the 19th century. It was originally sited near a river mouth in Kampung Laut before being moved inland to Nilam Puri, Kelantan due to severe erosion which almost collapse the masjid after one of the biggest flood hit the East coast 1966. The building is a timber structure built on stilts. The details sizes of each member of the building were discussed at length in many literature to describe its greatness and in comparison to similar masjid in Demak, Java. Like the Masjid Demak in Java, Indonesia, Masjid Kampung Laut has three tiered pyramidal roof that closes at the top with an ornamentation called <i>Buah Guntung</i> or <i>Buah Buntun</i>.. This roof form is synonym to the roof form of masjid and wakafs or place of rest in the Nusantara region. The ornamentations also adorned the roof ends and based of the columns, hanging column joints as well as at the details. Buah guntung was said to be based on a lotus flower. Masjid Kampung Laut had a <i>loteng</i> or loft as meditation spaces in the building immediately above the prayer hall.</p> <p>Masjid Besar Kota Bharu was replaced by Masjid Muhammaddi at the same location during the British. The former building was made of timber and tiered roof similar to Masjid Wadi Al-Hussein in Pattani</p> <p>Masjid Papan ((Salleh Mohd Akib.(2003) was the oldest masjid in Perak. It was built in 1888 and shapes like Masjid Kampung Laut with two tiered roof without a tower.</p> <p>Masjid Pengkalan Kakap is one of the oldest masjid in Kedah, believed to be modelled after a masjid in</p>



Fig. 7 Masjid Kampung Laut, Nilam Puri, Kelantan



Fig.8 Former Masjid Besar Kota Bharu replaced by Masjid Muhammadi (Raykinzoku (2010)).



Fig. 9. Masjid Pengkalan Kakap, Kedah



Fig.10. Masjid Tengker, Melaka
(masjidmalaysia.blogspot.com)

Lembah Bujang, Kedah (built in the year 900), that is one of the oldest civilisation in this region. The masjid in Pengkalan Kakap was built in the 18th century and has a two tiered pyramidal roof with large Doric columns on a three sided open loggia. The masjid is void of decorations and ornamentations.

Masjid Tengker was built in 1728 of similar tiered roof architecture but with the second and third tiers narrowing and heightened. Raised from the ground as a platform with serambi all round, ablution is placed separately as a tub on the ground with links to the main building. A separate pagoda like minaret accompany the masjid in the ground. Ornamentations found on the masjid are a mixture of flora and fauna with animal figurines obviously of Chinese origin.

Indonesia

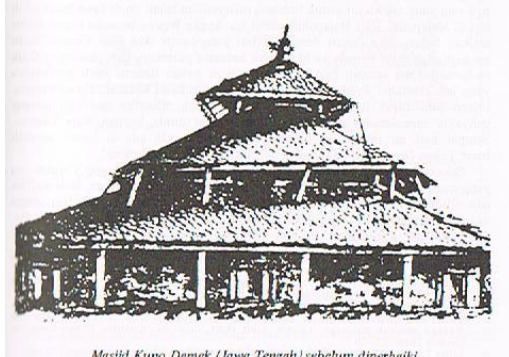


Fig.11. Old Demak masjid (Abdul rahman Al Ahmadi (1999)



Fig.12 Masjid Agung Demak, Indonesia

Fig. 13. Masjid Keraton Kota Gede, Yogyakarta.



Fig. 14. Masjid Agung, Jogjakarta, Indonesia (2000)

Masjid Agung Demak or the Great Masjid of Demak was claimed to be built in the 16th century by some sources. This claim contradict to some sources that Masjid Demak was built later than Masjid Kg Laut and Java Islands received Islam later than Tanah Melayu (the old name for Malaysia). Islam was said to be brought first to *Tanah Melayu* by the sailors and merchants, and also down from Champa via Pattani to Kelantan, Terengganu and Pahang. Nevertheless, the architectural form of the masjid does have resemblance to Masjid Kg Laut in its three tiered pyramidal roof and originally raised on stilt but now rebuilt on the ground during the Dutch. Old pictures of the original Masjid adorned the museum found onsite. Apart from being bigger than Masjid Kampung Laut, this masjid also has similarities to Masjid Tengkeru and Masjid Kg.Hulu in Melaka (or Malacca) from its construction that is now stood on the ground, employed a mixed use of brick work and timber as well as having ornamentation of chinese origin.

Masjid Jamek Abdul Rahman in Pontianak, Kalimantan was built about 253 years ago. Similar to Demak; the masjid was constructed from timber, of pyramidal roof but with upper portion narrowing similar to Masjid Tengkeru of Melaka. A Chinese influence is evident in both masjids.

Masjid Kota Gede, the oldest in Yogyakarta was believed to be built around 1640s within the vicinity of an old keraton or palace of Surakarta. The form was derived from the Javanese style namely limasan that is characterized by pyramid-form of the roof and two different rooms functioning as main room and verandah respectively.

Masjid Agung Keraton, Jogjakarta was constructed based on taqwa concept. The construction of the masjid was in phases. Similar to Masjid Demak, the masjid has pyramidal roof over its grand prayer hall. Basic area first and was later added the *serambi* or verandah. Other parts were added much later as expansion.

The Findings

There have been theories on the dissemination of the Islam to South East Asia. It may have come through India-Sumatra-Malacca or through Champa-Pattani-Kelantan-Terengganu, or even both ways. The religion was brought over mostly through maritime travel of the scholars and merchants (Mohamad Tajuddin, 2000). Through trades, the faith brought gradual changes to the region which was for over 500 years immersed with Hindu-Buddhist beliefs. Early masjid of the Malay Archipelago, were vernacular architecture of the locality with building structures of timber columns and beams, bamboo wall and layout that can be adapted to accommodate a big congregation under one roof. The biggest architectural structure of the Malays then was palaces. In the palace ground, the *Balai Rong Seri* or the *Dewan* made up the biggest open span structures for coronation, meaningful event and meeting the people for consultation. The existing architectural elements handed down from generation to generation of craftsman were utilised to the best possible to complement the new faith from the old.

It is difficult to deduce how the masjid of Vietnam, Cambodia, Patani (Thailand) and the northern Malays states of Kelantan, Terengganu and Pahang of the Malay peninsula celebrates the new typology in their local architecture. Abdul Rahman Al hamdi (1990) stated in his article that the Masjid blend well with the surrounding built form in terms of material and make. However, the planning tool then was based on the philosophy of the old Hindunised Malay using a *mandala* or square plans which required four pillars of solid hard wood or *tiang seri* to hold the 3 tiered colossal roofs. The roof, apart from the practicality of dispersing hot air and keeping the interior cool, was always classified as an identity to denote social hierarchy of the owner and function of the utility. Odd numbered tiered pyramidal roof has been associated with the *meru* or symbolic mountain and had resembled movement upward towards heaven or nirvana. Similarly many masjids of old in Indonesia, were adapted from chandis and from the system of sacred pillars with centrality of single columns in the centre of the open space or odd column numbers making up the whole structure. The structure is literally handed down from a mixture of Hindu and local myths. However, with Islamic faith, adaptations were made and had since renamed the tiered roof to commemorate *Islam*, *Iman* and *Ihsan* and the odd numbered pillars were associated with the five pillars of Islam and many others.

The planning layout of vernacular masjid throughout the Malay world, which was based on the mandala but faces the qiblat, has been symmetrical as it is dictated by the maximum length and breadth of the construction material – timber of definite span. The ablution area is located on the ground by a well or man made stonework tub close to the main entrance. A flight of timber steps rest on stone is provided at the main entrance across the *mihrab* or niche area of the building. A *serambi* or verandah like terrace, placed a little lower than the main prayer area, is a common norm as extended space permitted through traditional timber jointing construction where a dressed edging or “*bendul*” acts as an interlaced. Women area of the masjid is placed along side the men with a separate stairs as entrance. No definite evidence is shown on how they are divided within the prayer hall. Muslim cemetery of the local population and the missionaries of Islam also form part of the Masjid ground.

The vernacular masjid context throughout the region has been located near a river or a coast to ease travellers. The settlement layout of Demak, Yogyakarta, Kota Bharu and Kuala Terengganu i.e. a town with a sultan, the planning had remarkable similarities. In these towns/settlements the masjid is either located on the left or right side of the square or *alun-alun* with the sultan's palace facing the coast or river at one end. The alun- alun as an open space provide the venue to activities of trade, ceremony and many event of temporary basis. Transportation then was by boat and hence the entry to the settlement is through the riverfront. The masjid comes with cemetery and houses of imams apart from quarters for religious studies students than eventually turn to renown madrasahs.

The masjid architecture in this region per se, not only strived by the locals with their vernacular architecture assimilated from utilitarian needs and gradual change from their former beliefs but also of the Muslim immigrants, through trades, bringing their architecture and craftsmen to the shore. From as far as Laos, Vietnam, through Cambodia and Thailand, the masjid from hybrid architecture of Indian and Persian heritage as we know today with domes and arches (refer fig 15-17) , are now deeply entrenched in the Malay society. Although everyone knows that the dome and arches architecture are not local and has long maintenance effect in its up-keeping, the acceptance of other built form to commemorate ones's masjid a surau without a dome is deemed unacceptable. Hence travelling along side Java and other Indonesian island main city streets, the mass selling of modular aluminium or steel domes for the public is a common place. With colonisation and the introduction of western architecture into the Malay world, the glorification of the west as modern in comparison to the vernacular, masjid architecture takes its toll with myriads of hybrid colonial architecture as replacement for the old.



Fig 15: Symbol of Masjid in Surabaya, Indonesia (2001)



Fig 16: Masjid in Phnom Penh Cambodia (2008)



Fig 17: Masjid in Ho Chin Minh City.

Towards a sustainable architecture, a retrospect of masjid architecture appropriate for the tropics (see fig.18) were initiated with the rebuilding of standard pyramidal masjid, designed by famed architect Jimmy Lim on tropical and regional architecture for selected district of Pahang, Malaysia. The structure uses timber and steel roof to cover the large span. Similar other effort on suraus (see fig 19-20) based on tiered roofs were made using new materials. Melaka state government had chosen the square plan and three tiered roof based on Masjid Tengkeras as the chosen design for Masjid Al Azim (refer fig.21). Made wholly of reinforced concrete, concrete tiles and the huge span concrete structures that can accommodate 9,700 congregation per seating, the masjid is indeed a recognition of the vernacular traditional Malay archipelago architecture using modern technology. Ghafar Ahmad (1999) state in his article that only small

masjid can apply the vernacular traditional masjid of wood and clay tiles. The colossal structures, such as Masjid AL Azim can only mimic the sense of physical tradition but the essence of scale, humane and humility can only be acquired in the quaint community masjid made with sincere participation of the rakyat – the people.



Fig 18: Jimmy Lim's version of tropical masjid



Fig 19: Surau Kem Kijang, Kelantan 2008



Fig 20: Masjid Kampung Bolok, Lancang, Pahang (internet 2009)

International Islamic University Malaysia, realising this need, had made an effort to re-educate the society by introducing, a contemporary pyramidal roof masjid, as IIUM contribution to the community. The masjid is currently being built as an extension to the Indian type masjid in Belukar Luas, Ketereh, Kelantan.



Fig 21: Masjid Al-Azim. Melaka's state masjid (1980s)



Fig 22: Masjid Al-Falah - Proposed Contemporary Traditional Masjid for Belukar Luas, Ketereh, Kota Bharu, Kelantan (2009)

Islam only dictate the planning layout of a Masjid to be facing the qiblat and that the ritual of ablution be carried out prior entry to the praying hall or “the masjid proper”. Islam did not dictate the architecture nor provide with any symbolism on shape and form of a masjid. Amidst this physical connotation of what is original and what has been hybridised due to circumstances, influence, politics, trends and others, we had yet to tie in other continent and people in their creation of this added building typology-the Masjid. The questions on the origin of the tiered roof as a Malay heritage remain at large. Was the tiered roof derived from the pagoda architecture of China? Was it from Indonesian Demak masjid as claimed to be being built first? Was Demak masjid original? Or was it brought through by the Chinese Muslim of Cheng Ho's descent? Or was it developed from the temple architecture of Cambodia with its graceful roof and gentle gradient? The search is still on going. No solid evidence has been found except more enquiries, perceptions, theories and more theories. For Muslims, the architecture is not a hindrance to practice of prostration before Allah. Muslims can solat any place and at appropriate time. Thus

this seeking will confirm, academically and architecturally, on the type of building form and shape, the masjid of Malay heritage should have been derived from.

Ghafar Ahmad(1999) summarised the design of the vernacular masjid reflects most of the characteristics of the traditional Malay houses. The architectural style of the vernacular masjids are influenced by four major factors including climatic conditions, availability of building materials, craftsmanship and ethnic background. He sums up examples of some building features of vernacular masjid architecture as follows:

- (i) Masjid were built in response to the warm and humid climatic conditions include :
 - a. pitched roofs to enable rain water to run off quickly,
 - b. stilts to raise the mosques above ground level to avoid floods; and
 - c. many openings including louvered windows, fanlights and carving panels to allow natural cross ventilation of air.
- (ii) Building materials such as timber, bamboo, bricks, stone, clay tiles and attap are widely used in the vernacular mosques as they are easily available locally.
- (iii) Like the Malay houses, the vernacular masjid portray high level of craftsmanship which are demonstrated in the windows, fanlights, carving wall panels, fascia boards and well-designed mimbar with intricate flower motifs. Such craftsmanship generally reflects the owners' status and wealth, particularly for the Malay houses.

As addition to the above statement, needless to say that Malay architecture is indeed a flexible architecture of quiet distinction. It is able to adopt invariably a new typology as part of the community asset in a gradual manner and enhance it with magnificent roof structures that encompassed function for the believers and aesthetic expression of the craftsmen eager to service the best towards oneness of God in a balance manner.

The Traditional Houses

Acknowledging that masjid is a better sample for tracing timeline as the source of influence in comparison to houses should not impede analysis on the traditional houses. The hypotheses are that the houses definitely have relationship to each other and the development of the styles is closely related to the movement of people.

Unlike the masjid, houses are closer to man and society. The Malays themselves lives in clusters from time immemorial. Unless it is urbanised, the concept of kampong living or country living, leaves every household quite free with their respective house design that is literally modularised by the sizes of the building material, rank in society and the family's affordability. Malay houses are naturally conceived through years of trial and error of the village craftsmen and the community. Dictated by social function and privacy, Malay traditional houses are built in stages that represent the basic and additional needs of the family. Section by section may be added in congruent to the growth of the family or acquired wealth. Status in society dictates the

style and ornamentation including type of timber used. Like the masjid, the roof of the house identifies the origin and status of the occupant. Invariably conceived through functional requirements of storage and exits for hot air, the Malay houses, depending on its respective belief system and long alienation from place of origin had reinvented their home to respect their adopted faith and new culture. The house as abode for the family with the mother as a central figure, the dimension uses to plan and design the spaces are from the mother of the house. Pre-Islamic rituals were conducted to appease the spirits lead by the mother of the house. *The heath or kitchen as the central core dictate the*

Table 2: Case Studies: Vernacular Houses



Case Study	Architectural Forms
<p>Cambodia</p>  <p>Fig. 23 Cambodian traditional house.</p>  <p>Fig. 24. Cambodian typical rural house.</p>	<p>Timber/ brickwork/stone On ground/ stilts Pyramidal/ pitch roof form Single/ tiered roof Multifunctional space Ornamentation</p> <p>The Cambodian traditional house has a distinct on stilt features where the proportion of the space underneath the houses is almost equal to the living areas (the main body of the house). The houses are solely built of timber with simple pitched or gable roof form. The houses have a long roof configuration but used in both parallel or juxtaposed to the entrance or façade. Most of the time the long roofs are parallel to each other to accommodate extension of the spaces. The roofs are normally adorned with decorations with animal motifs on their ridges. The spaces are mainly multifunctional and alternately used as spaces for active and passive utilization, i.e. entertaining, eating, relaxing, sleeping, cooking and others.</p>
<p>Vietnam</p>	<p>The Vietnam traditional houses resemble the proportions of the Cambodia houses.</p>



Fig.25. Vietnam traditional house

Laos PDR



Fig. 26. Laos indigenous house.

The Laos PDR houses are also simple form of construction mainly built from timber with attap roofing (made from palm fronds or long grass). Attap roofing are common in this region but have mainly been replaced by newer materials that are more durable. The proportions are also similar to the Cambodian and Vietnam houses with almost equal proportions for the living areas inside the houses to the underneath spaces. The simplest form of these houses is void of decorations. Nevertheless there are also traditional houses in Vietnam that is not on stilts and resembles its northern neighbour in Korea and China.



The Philippines



Fig.27. Bahay Kubo

Bahay Kubo or nipah hut is the native house of the Philippines. It is constructed of indigenous materials like all other houses of the region. Of square plan and normally cubic in shape, this shelter is also raised on stilts. Raising the interior from the ground safeguards the shelter's inhabitants from flood, and from snakes and other wild animals. Perfectly adapted to the tropical climate of the Philippines, the structure can easily be repaired or rebuilt once damaged by typhoon, flood or earthquake. A typical *bahay kubo* normally is a one large, open, multi-purpose room for dwelling, called *bulwagan*. It has a cellar, or underneath the house like those in Cambodia and Malaysia, called *silong* where most household chores are done. This area serves as the area for livestock pens, storage space, workspace and granary. The house walls are made of *nipa* and cogon leaves or *sawali* or woven bamboo. Large windows are provided on all sides to keep the interior well-ventilated. The

	<p>windows have <i>tukod</i> or “legs” that hold the swinging shades open during the day, and secure it back in place at night. Another feature of the the <i>bahay kubo</i> which is the ladder or <i>hagdan</i> which can easily be removed at night or when the owners are out. Also similar to most houses of the region, the open back porch or <i>batalan</i> is also where household chores are done and where the jars of water are placed</p>
<p>Thailand</p>  <p>Fig.28. Thai or Central Thai houses.</p>	<p>The Thai traditional houses are mainly composed of several sections and connected by a raised platform. This platform acts as a common courtyard area for the house. The Thai houses also have a pitched roof over single spaces with slightly curved sides. This style is also found in Terengganu and Kelantan, Malaysia. The roofs and wall panels are usually adorned with carvings. The spaces underneath the houses are utilized similarly to traditional houses in other areas, i.e. Cambodia, Malaysia etc. The houses used prefabricated timber panels that can be replaced when required.</p>
<p>Malaysia</p>  <p>Fig.29. Rumah Traditional, Bagan Serai, Perak.</p>  <p>Fig.30. Rumah Tuan Hj Abdul Rahman, Merbok,</p>	<p>The Malay traditional houses are timber structures built on stilts. The houses are slightly complicated with a composition with spaces of different usage, although some spaces remain to be multi-functional. There are several types of Malay traditional houses that varies according to regions. The most popular roof forms are the long roof and five-ridge house (<i>perabung lima/ limas</i>). The example of the traditional house in Bagan Serai, Perak is built on stilts. The house uses timber as the main material for the house that is composed of spaces i.e. verandah, the front house (<i>anjung</i>), the main house (<i>rumah ibu</i>), intermediate area (<i>selang</i>), kitchen (<i>dapur</i>) and washing area (<i>pelantar</i>). Similar to the other traditional houses in this region, the spaces underneath the traditional houses are also multifunctional.</p>

Kedah	<p>The Malay traditional houses normally have verandah that is also common to other traditional houses that may have been a result of socio-culture or climate. It is interesting to note that the Tuan Hj Abdul Rahman's house resembles closely the house in Cambodia.</p>
<p>Indonesia</p>  <p>Fig. 31 Rumah Gadang, Sumatera</p>  <p>Fig. 32 Traditional House, Sulawesi</p>	<p>The Indonesian traditional houses varies from a single space house like the Atoni's to a more complicated Rumah Gadang in Minangkabau region or the Nias Houses in Nias Island. For the purpose of this analysis the Sulawesi house has been selected due to the similarities that it has to the traditional house forms of other regions discussed in this paper.</p> <p>The house in Sulawesi is made of timber with on stilts construction that resembles the forms discussed in Cambodia, Vietnam, Laos PDR and Malaysia. The roof form is a long roof style that is perpendicular to the entrance. The proportion is also similar to the other houses in the region.</p>

The Findings

The houses on stilts are found along the span of more than six thousand kilometres, which is from Melanesia to Indonesia to Japan while on the Asian continent, as far as Nepal to Southeast Asian and South China (Jumsai). In this region, the housing on stilts are manifested in various forms that reflects the beliefs, social and culture of specific regions. While the houses in Malaysia are influenced by Islam as a way of life, the Batak house in Sumatera and Torajah house in Sulawesi Indonesia are influenced by the local belief and culture of the people. For instance, the Malay traditional houses in Malaysia are commonly oriented towards kiblat (Makkah) and are void of decorations except for some floral motifs in form of carvings. On the other hand, the Indonesian version of Batak and Torajah houses have forms and decorations that symbolize their belief system, i.e. lizards and three distinct colours of white (realm of deities), red (the human world) and black (the spirits of the underworld). These tripartite segments of houses are prevailing in many parts of Indonesia including the Torajah and Batak houses (Refer Fig. 33).

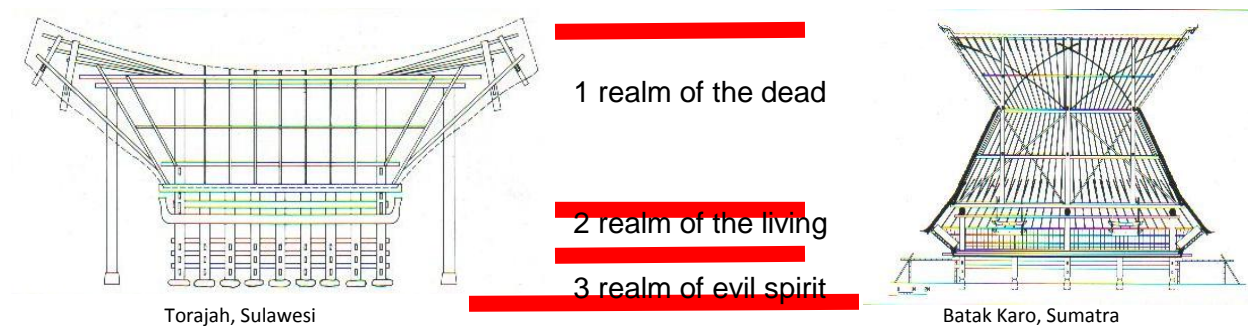


Figure 33: The Tripartite Symbolism in Houses on Stilts in Indonesia

The raised housing on stilts also has been agreed by many to be a gesture of response to the climate. Hence their existence in the Southeast Asian region could be hypothesized as an environmental reflection. The houses are said to be the best response to the climatic conditions in order to achieve comfort (Lin 1987; Noor Hanita 2004). Besides the differences that have been hypothesized that the houses are reflection of the belief system, culture and behaviour, the differences may also occur due to the geographical conditions. The houses on stilts near the body of water, i.e. river and lakes may manifest by having tall stilts as seen on the banks of Tonle Sap, Cambodia or on the shores of Brunei and other settlements fronting the seas. In Cambodia, the houses are tall and mainly accommodate a set of activities and spaces underneath the houses. A similar usage and utilization pattern is also common in some areas in the peninsular Malaysia such as the houses found in Perak. Figure 34 shows a similar proportion used in the houses and utilization patterns at both Kg Cham and Perak. Both houses have underneath spaces that are high enough for multi activities and storage. Activities that took place underneath the houses are chit-chatting, napping, light activities such as net mending, sewing and similar activities. In Cambodia, cooking are also carried out underneath the houses.

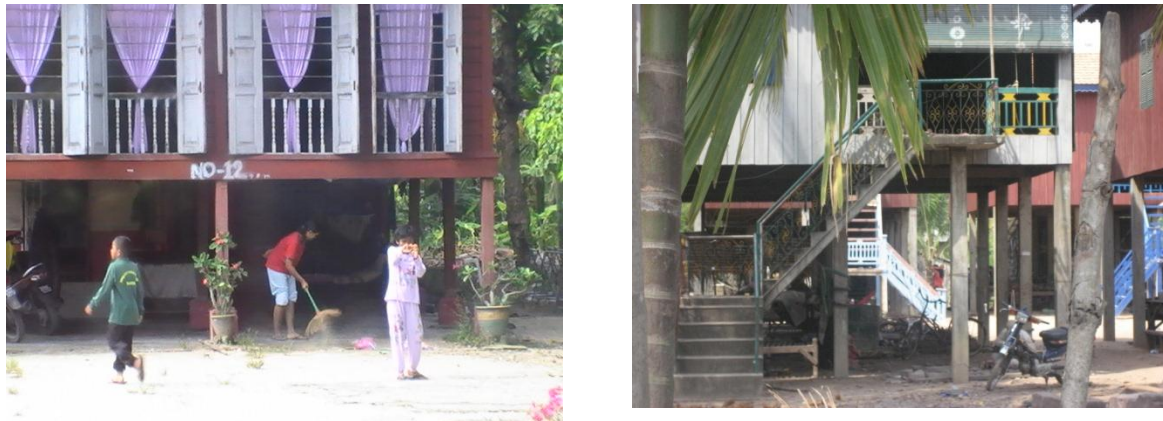


Figure 34 shows a similar proportion used in the houses and utilization patterns at both Kg Cham and Perak

Besides utilizing the underneath of houses as activity spaces, the area sometimes are storage spaces for daily utensils and also livestock. Usually the areas used for storage are lower and can be seen in Malaysia and Indonesia. These examples show that the utilization of the houses on stilts are similar even though the places are distant from one another.



Figure 35 shows similarity of short stump of Batak House to the Malay house peninsula Malaysia

It is difficult to trace the timeline of when the houses are built to determine the spread of the architectural form. Nevertheless, the theory here may rely on the migration theories as discussed by Abdullah (1989). Nonetheless, it is interesting to note that some of the houses discussed previously are similar to one another in terms of their architectural forms and also socio-culture. The similarities may have been environmental based, similar climate and socio-culture. The analogous climate have resulted into architecture that responds to the hot-humid and tropical climate. While the socio-culture of the 'Malay' may have been closely related though may have varied due to religious beliefs. Assuming that people have travelled back and forth for the purpose of trade and missionary, assimilation of way of life may have taken place and preference in choosing architecture form is closely related.

A case study of a 1943's house in Pasir Mas, Kelantan was redrawn from an interview (see Fig.36) With exception of pipe water as basic means of water supply replacing the well dug up in front of the house, the house layout follows the traditional houses of anjung, serambi, rumah ibu, and dapur with spaces beneath as storage, play and resting area. The house was constructed with hardwood timber, part of walls were bamboo weave and roof were covered with attap. The house was replaced in early 1970s with new timber walls for the upper portion and brickwalls with cement floors at the lower floor. The house faces constant flooding during the monsoon season of the year and hence spaces below are only used mostly during the hot weather as it is cool and comfortable.

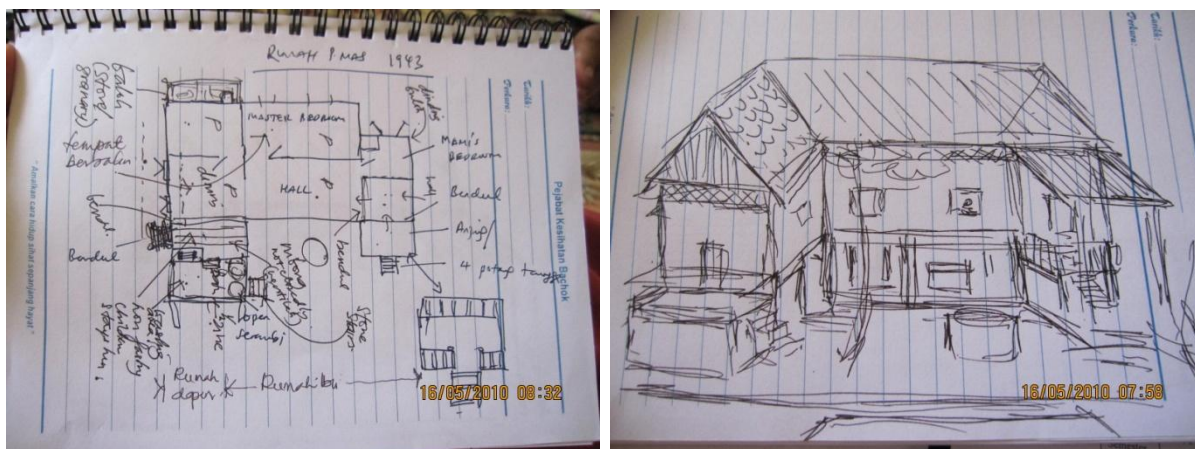


Fig 36. Layout Plan of 1943 house in Pasir Mas, Kelantan before replacement.

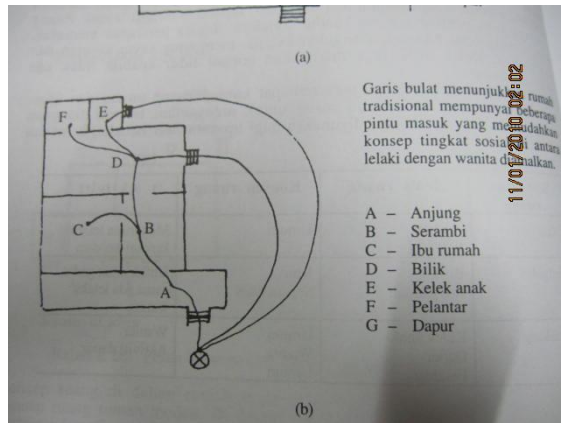


Fig.37 Example on layout of Rumah Melaka on its spatial usage (zulkfli (2001)

Malay vernacular traditional houses, although varies in its geographical and physical make up, have the similarity of its usage from common defined spaces such *anjung*, *rumah ibu*, *serambi* and *dapur*. The craftsmanship, including building details and construction techniques were able to adapt to contemporary lifestyle with modifications. The architecture natural ingenuity to survive intact; in the long run, will provide the vehicle of continuity of this heritage from the various islands and continent, to be incorporated into main-stream construction method of the region.

As a summary the Malay traditional houses of the region will have the following characteristics:

- (i) Predominantly houses made of sustainable material found in the locality i.e. timber, grass and bamboo; depending on status, the quality of timber will vary.
- (ii) Due to effect of weather and location, will raise their floor to full height or half the height to prevent flood, secure from wild animals, allow coolness as well as spaces below to rest, work, as storage and as animal pen.
- (iii) Pitch roof form of various degree, height, gradient and make that will prevent water seepage but will cool or warmth the interior; provide for storages and decorate with meaningful characters based on belief systems.
- (iv) Building parts and components that can be constructed by module based on need.
- (v) Have lofts or loteng at kitchen area
- (vi) Created from multifunctional single space dwellings to designate spaces based on function, wealth and status in the society
- (vii) Have a water vase or buyung at the front steps for washing the feet.
- (viii) Adaptable, flexible, transportable and reconstructable

CONCLUSION

The physical origin of the Malay architecture as we had now had indeed evolved through many factors of time, place, availability of resources and the effect of physical and socio-cultural environment each community interface in their path and lifetime. Memories ingrained had its time limit due to constant exposure to current needs and the need to “progress” or be updated.

The Malays were known as seafarers and travellers apart from keen craftsmen and agriculture bound. As a common culture, the Malays, despite being in different locality and belief systems, have similarity in the craftsmanship and skills whether it is boat building, building construction techniques or weaving. New ways are learned and integrated as the Malays mixed with other cultures and places through trades, travels, pilgrimage and even on study mission or as missionaries.

The Malay architecture we are thriving on at present times are in the form of contemporary concrete or brick masjids and suraus, bungalows, town houses and terrace houses in comparison to just made from timber. The built forms are but continuation of the past and into the present following new lifestyle borrowed or assimilated due to the need to change as resources are scarce. As the Malays migrated to towns and cities, regulatory requirements inserted through Uniform Building by-laws, the Fire Act and insurances on housing had profound effect on the choice of architecture of the town folks in their purchasing of home or building of structures. While the Malays in the country side enjoy their choice of abode and masjid, the town folks had to live within the limitation of the law imposed.

Despite the forethought of sustainability, it is rather sad that even the rural folks are mesmerised by town folk's "progress" in their idea and perception of perfect abode and long term nature of their structures. Sprouting amidst padi fields and fishermen's village in coastal areas are alien structures of either Disney famed or temperate country famed where the owner or descendant of the original owner built his/her home yearning from his/her place of study. Tranquil and quaint timber masjids were replaced with replica of middle-eastern cum western brick and mortar architecture where imams and religious teachers had studied or had done their compulsory pilgrimage. Gone were the raised floors on stilts but were replaced with hardcore filled raised floor as platform for both the house and masjid. Pitch roofs were flattened or leaned to or simply covered wholly without provision for ventilation needed in the hot season. Intricate but functional carvings with aesthetic value as sunshades or structural corbels, are now substituted with machine pierced duplicates as reminiscing of the past. Self proclaimed contractors replaces craftsmen in their art of building leaving the architecture of the Malays at their mercy.

In cities, although Malay town-folks long for their ancestry-like timber home in their small lot, the regulatory requirements only allow some compromises as shown in Fig 37. However, displace of context and orientation as traditional houses and masjids should, the traditional forms in urban setting are not able to perform as well as it should within a tight and allotted space.



Fig 37. Sample of 'reminiscing the tradition' houses in tight urban setting of Kg Tunku, Petaling Jaya (2010).

Travelling through time in seeking the origin on just two building typologies, the masjid and the house, the study had disclosed the rigmarole of assumptions based on historical evidence of adjacent structures as well as those built within the same period. On traditional buildings still within our grasps, with exception of live interviews of real life owners of the place in recent times, other examples remain an enigma of unanswered assumption and perceptions yet to be rediscovered.

Universities, through measured drawings, heritage studies, conservation and personal research by those with interest had to a certain extent, accumulate tangible and intangible data for reference tucked away in their ivory towers with only those digitised and published accessible to the mass. This research is just the tip of an ice berg. While we continue our search for the Malay origin in the teaching of architectural history on the Malay architecture to new generation, perhaps it is not too late as a recommendation, to include the essence of the requirements that addresses the climatic and social concern towards sustainability extracted from both vernacular masjids and houses; into the neighbourhood planning and design guidelines of our towns and cities. The knowledge and its application may assure the future that the long lost local technology based on intuition, experiences and hand down wisdoms are here to stay in its contemporary form relieving the progress and adaptation the vernacular architecture of the Malays always brings. *Wallahualam.*

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