

# *PAM CPD Lecture*

Title of Paper:

## **Rediscovering and Using Malaysia's Traditional Building Forms for Sustainability**



By:

**Ar. A. Najib Ariffin,**

Director of Nusantara Academy of  
Development, Geoculture & Ethnolinguistics  
(NADGE) [www.nadge.org](http://www.nadge.org)

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**Introduction**

In our haste to embrace everything that is modern or progressive and which may appear convenient and advanced, we sometimes forget and discard previous knowledge or technologies and practices that were very suitable and sustainable to the place and circumstances of where we live.

Although some old or traditional architectural practices may appear outdated, that is sometimes because we have also forgotten the overall wisdom that came with such traditions, yet the modern designs and technologies that replaced them have not fully solved present living problems while even creating new unsustainable situations - increasing urban sprawl, increased air-conditioning etc.

This presentation examines the characteristics and suitability of traditional architectural designs and practices for modern requirements.

**Biography of Speaker / Writer**

Ar. Ahmad Najib '*Nadge*' Ariffin was born when a majority of Malaysians still lived in serene "kampong" environments. He has since lived around the world, earning two degrees in Building Science and Architecture from the USA and a stint in Italy as well as other countries.

In the various places he stayed in, he picked up interests in heritage and tourism as well as the French, Italian, Spanish and Turkish languages. Today he is a professional Guide for visitors to Malaysia in these languages or on official tours, and is also a researcher on architectural, heritage and tourism issues.

But the traditional architecture he grew up with is still close to his heart.

## Traditional Malaysian Architecture - A Dying Heritage, A Renewed Discovery

*Sustainability* can take many, widely different forms. Going out of the box, let us take a *touristique* approach as a way to understanding sustainability:

"*Où sont les maisons traditionnelles malaisiennes?...* The beautiful timber ones on stilts with flowery carvings? We want to see those – authentic ones."

I can't tell you how many visitors have asked that question ever since I started tour guiding especially for heritage and architectural tours.

It is such a pity that for example *Rumah Pak Ali* (Pak Ali's House), a handsome carved timber house in Gombak, near Kuala Lumpur and lived in by Pak Ali's family for generations, accidentally burned down a few years ago. It had welcomed over a million visitors through the years that were happy to get a look at authentic traditional architecture. Without the old house and with the Jalan Gombak area redeveloped, the tourists have no reason to go there.

Nowadays one would be hard-pressed to find traditional houses in original forms in urban areas in Malaysia anymore. The few authentic houses that remain are seen only in the *kampung* or village areas. Many have been modified with ugly modern extensions while virtually all use corrugated zinc roofs – making them unfairly look like poor squatter houses instead.

This is really a pity as the true traditional houses of Malaysia were actually intelligent buildings and part of a wider environment-friendly way of life.

Before the arrival of foreign or modern influences, the local peoples of Peninsular Malaysia and their related Bumiputra tribes of Sabah and Sarawak had already highly evolved their traditional dwellings with forms that excellently suited their lifestyles.

Whereas on Peninsular Malaysia single extendable family houses were the norm, many of their Borneo cousins built *Rumah Panjang* or 'long-houses' hosting a string of families, each in its own 'apartment' with a large common multi-purpose verandah linking the front called '*Ruai*'.

### Materials From The Surroundings, And No Need For Any Nailings

Using replenishable natural materials i.e. various kinds of timber and also bamboo, the kampung folk fashioned their structures in such a way that it did not need a single nail. Instead the Malays used pre-cut holes and grooves to fit the timber building elements into one another, effectively making it a 'prefabricated house'. In Sarawak and Sabah rattan ropes were used to fasten bamboo pieces together. Indeed these were the precursors to IBS, or Industrialised Building Systems that are gaining (*regaining*) popularity today.

Although nails had been invented and in some houses used minimally for non-structural pieces (for example on supplementary elements), there were benefits of structural flexibility that the rigidity of nailing defeated.

Without nails, a timber house could be dismantled piece by piece and packed to a new location as and when the owner needed to move. This was done for the beautifully restored *Rumah Penghulu Abu Seman*, which was transported from Kedah to Kuala Lumpur by Badan Warisan Malaysia, the Malaysian Heritage Foundation.

In fact, for short distances, the nail-free flexibility and relatively lightweight timber even allowed a traditional-style house on stilts to be lifted on many shoulders through 'gotong-royong' (community cooperation) and carried to another spot.

For maintenance, sometimes it would be necessary to replace damaged components of a house. Since nails were not used to put together the elements, they can be more easily taken out and replaced with new pieces.

Traditional timber houses also incorporate design principals still relevant to contemporary architecture such as safety, privacy, shading, and ventilation - qualities easily seen in the house's basic features as in the following sections.

### Living On The Air, Respect For The Earth

A main characteristic of a typical kampung house includes the obvious fact that it is raised on stilts or piles. There are five or six advantages for this: to avoid wild animals, to be above floods, to deter thieves and intruders, for added ventilation qualities, and as a storage as well as working area below the house.

The fact that the house is elevated on platforms, called "*Panggung*" style, is indeed very environment-conscious. For instance, in one stroke contact with wild animals, from tigers and snakes to centipedes and scorpions is greatly lessened. Yet plants such as herbs and vegetables can still grow to a certain extent beneath the house. Thus conflict with nature is minimised.

One can make a point that the inhabitants basically live on the air, with only the tips of their house - the stilts – touching the Earth. This shows great respect for the *Bumi* by disturbing or occupying the land as little as possible.

### Space, Form, Function and Proportion – A United Whole

A traditional Malay timber house is almost always in at least two parts: the Main House called *Rumah Ibu* in honour of the mother (ibu) and the simpler *Rumah Dapur* or Kitchen Annex - this way if the kitchen catches fire only that part would be damaged, saving the main house.

Proportion was also very important to give the house a human scale. Indeed, the *Rumah Ibu* was also named such because the spacings between stilts typically follow the arms-spread width of the wife and mother in the family of the house when being built. Importantly, the lady of the house is acknowledged with its name in her honour.

There is also at least one raised verandah (*Serambi*, or *Selasar* in East Coast) attached to the house for working or relaxation or where non-intimate visitors would be entertained. This preserves the privacy of the Rumah Ibu's interior, where private chores can be done during the day, and the whole floor areas inside turned into sleeping quarters with mattresses laid out at night.

Note how the traditional house's areas are multi-functional and thus space saving; unlike modern Western-style dwellings where every function is designated a room or at least space that is wasted when unused.

### Unwelcoming The Heat, Celebrating The Roof

Much of modern architectural designs and materials today simply do not use traditions of cooling, thus making heat traps that require air-conditioning and in turn contribute to global warming.

For ventilation and dissipation of heat, the elevation of the traditional house in the wind's path and also its many windows, holed carvings and slatted panels around the walls plus the high ceiling thatch or clay tile roofs all contribute cooling effects. However the presently popular use of exposed zinc sheets, because of its ease of installation and cheap supply, unfortunately increases heat and is noisy during rain.

All traditional roofs are always pitched to quickly drain off rainwater. Roofs thus become main features and come in two broad categories: '*Bumbung Panjang*' long roof type with open gable ends or the '*Bumbung Lima*'/'*Limas*' multi-ridge variations. Both types cover almost every conceivable roof design, with some forms peculiar to certain areas or communities, such as the elegant distinctive upward curves of the Negeri Sembilan-style Minangkabau house.

Indeed, each state, regional or co-ethnic group has its own style of house or preferred details. For example, in Melaka the staircase is always decoratively moulded and colourfully tiled. In Peninsular Malaysia's East Coast, many houses have distinctive carved roof gable-ends or barge boards (*Pemilis*) slightly akin to those in Cambodia and Thailand.

Traditional house roofs also always have wide overhangs; important for sun-shading and protection from heavy downpours in tropical climes. In many cases they have beautifully carved timber eaves to decorate the 'visual connection' between roof and sky.

Some roofs hold attic bedrooms, effectively making the already raised structure a three-storey edifice. In fact, there have been olden Malay palaces up to five or six storeys high built entirely in nail-free timber, as in Negeri Sembilan's Seri Menanti palace.

Alas, such great edifices of organic materials do not last in exposed conditions without care, and this heritage would diminish as no new authentic traditional houses are constructed. This would be a great loss indeed.

## **Status Of Traditional Architecture In Malaysia Today**

Malaysian architecture, mesmerised by modernity, does not even look at local traditions where solutions can still be found and further developed for contemporary living requirements. Traditional architectural forms or qualities, such as their tropically-suited roofs and elevated structures with meaningful elements can still be relevant for modern buildings, as often cited in a rare design such as the National Mosque (1963), Kuala Lumpur, where the raised open-sided Serambi-like platforms catch breezes.

From the 1950s when about 75% of all individual homes were in naturally environment-conscious tradition-based houses, it is estimated that there are only a few thousand traditional structures left – a dramatic loss.

Since then our building energy use has also gone through the roof, embarrassingly making Malaysia one of the highest per capita energy users and “non-enviro-friends” in the developing world, with an energy footprint use higher than even that of France!

An analysis would find that this drastic drop is due to many complicated and inter-related factors. Certainly there has not been any governmental policy *against* traditional houses although in turn there has been precious little *for* its conservation either.

A major negative influence is the colonialism instigated perception that anything old or indigenous is bad or just out-dated and old fashioned, and the traditional house becomes a clear victim to be torn down and replaced.

It is only recently and with much effort that “old is gold” is beginning to hold. And this is only because *tourism*, where anything locally characteristic heritage is a potential attraction, plays a large role in this revitalising equation.

While there are commendable efforts by some in the private or NGO sectors as well as needed or continued governmental funding for heritage awareness and conservation, much more still needs to be done.

## **Environment Friendly, But Real Sustainability?**

**While the enviro-conscious traditional forms and features such as pitched roofs with good overhangs and cool elevated structures can be re-used in modern designs for sustainability through less energy use and so on, there is still the issue of timber.**

**Some say that we can't afford to build in timber, as more trees would be cut down. While governmental push is needed to replant hardwood forests, unfortunately even the local community has lost the sustaining culture that came with building in wood. Modern Malaysians have now forgotten sustainable timber customs practiced by their forefathers.**

**Most of the ancient Malay peoples of Southeast Asia maintained a form of self-regenerating environmental culture. Since their houses were built in timber, it was a custom that for every child born, the parents would plant at least one tree on behalf of that child.**

**Usually the most popular tree would be the *kelapa* (coconut) 'tree of a thousand uses' but even timber shoots were known to be planted for a child, so that the future generation may use it when the time comes to build a home. In some areas the practice was quite sensibly for its time a coconut tree for a female baby and hardwood trees for males. This preserves the greenery and the environment with each generation.**

**Wouldn't it be good if this environment friendly heritage of sustainable timber planting and building is continuously practiced?**