

# An Architectural Characteristic and Local Conservation Study of a Malay Traditional House at Kampung Terusan, Kuala Pilah.

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**Abstract.** The house of Al-marhum Raja Kamarudin Raja Yaa'cob, estimated to be 160 years old, can still be seen standing and well-maintained even though it had been inherited for four generations. All its structural members which are pillars, beams, floor joists, wall plates, and rafters made of hard wood timber called 'Cengal Batu' by the locals, however the non-structural members which is wall panels, window panels, and floor boards are seen to be weakened by termites. Some part of the non-load bearing walls has been replaced to new and different type of timber thus making it less durable than that of the structural timber. For the residence of Kampung Terusan, their individual land plot is divided by agricultural and residential plot. These relation of land and houses is the main factor why Kampung Terusan is densely populated in the days before public water and electrical supply had reach the village. Here, the sustainability of the area was analysed based on interviews and observations. Traditional houses in Negeri Sembilan are unique particularly on the roof shape and structure. It uses less rafters as the roof coverings are of light materials, are among factors studied and explained using redrawn drawings, interviews from architects and observations.

**Keywords:** Malay Traditional House, Kuala Pilah, Sustainability, Minangkabau house, Conservation, Timber.

## 1. Introduction

At current time, the house of Raja Kamarudin is among the few houses in Kampung Terusan that still has its pillars, beams, and window panels are still in good condition and structurally strong of taking current load, but through observations, the timber wall of the rear left is almost 50 % were taken by termites. Even at this condition, the house is still standing straight without any tilted pillars which can be seen on some other houses of its same nature in Kampung Terusan. The location of this house now is not on its original place but had been moved from where it is constructed 160 years ago. This shift which takes place in 1993, marks the move of conservation by the owner hence replacing deteriorated timber member. The fact that this house remains at its original place for 135 years was analysed to find out why it has sustained that long and is there any possibility that it might stand for a few generation to come. Main clue to this is that Kampung Terusan is a village of significant historical background which



goes back to the 17th century when the Minangkabau tribe that is said to flee disturbance at their home town in Sumatra, and opened land for paddy field after marital engagement with the locals (1).

Ancient findings of megalith structure (grave stone) that can be seen at two Islamic graveyards are among other facts to prove that the village setting has sustained for a millennium. These settlers would also influence architectural design by bringing their culture and religion to Kampung Terusan. Possibilities of what micro climate might have inspired architectural design or not, apart from material availability and sustainability, also to be studied in finding house of Raja Kamarudin's architectural characteristic.

## 2. Materials and Methods

Research methodology for this thesis are based on observations, interviews, and literature reviews. Observations were done first to identify the evidence of structural and non-structural strength of selected house. The search started with redrawing plan and elevation of the house by measuring at current state. Data collection of measurement than are extended by examining structural timber condition and then recorded visually. Parts of the house that has been replaced are also identified noting year of change and current technology. Secondly, the interviews are used to find year of built, origin of owner for architectural influence, and conservation method and process. And third, literature reviews is to search for clues on the evidence of early settlement in Kampung Terusan.



**Figure 1:** Views of Megalithic Islamic Grave structure at Kampung Terusan.

Figure 1 shows a few megalith graveyard stones that are also located within the compound of current Islamic cemetery. Megalith structure can be traced back to about 2000 years ago, but Islam is said to had arrive in the Malay Peninsula during the 10th century (2), thus marking the date of those megalithic grave stone in Kampung Terusan. Being of 1000 years old, there are the only structure that still can be

seen unlike houses, where the materials are mostly timber which life time is about 100-180 years old depending on the maintenance.

The interview with the current owner of Raja Kamarudin's house was mainly to investigate the architectural history of it. "Rumah ini dulu duduk di baroh. Masa tu tak ada air paip, pakai air perigi untuk mandi dengan air minum." (3). The position of this house originally was at the 'baroh' (land beside paddy field and Sungai Muar), which there was no water and electrical supply yet, and we have to use water from the well for drinking. Kamarudin explains the original location of his house and pointed that it there so that its nearer to work the paddy fields. He added, "...ada kemudahan air paip dengan letrik (1976), mula-mula masuk kat tanah baroh, dalam 10 tahun kemudian (1986), arwah Abah pun buat rumah batu kat tanah darat. Agak-agak dalam 20 tahun lepas pindah rumah darat (1993), Abah mintak tolong tukang bukap dinding, atap dengan lantai, lepas tu angkat ramai-ramai ke darat dengan bantuan orang kampung, sebab masa tu dah tak ada orang tinggal kat baroh dan Abah takut rumah tu kena makan anai-anai" (3). ...water and electricity were supplied to our house at 'baroh' (1976), 10 years after that our late dad built a new house (masonry) at 'darat' and we moved in. In 1993, we brought the wooden house to the front by disassembling it walls, floor and roof, and carry it to the new location (400 meters away). Here, Kamarudin note the move of the house was because so it is nearer to be maintained. "...tiang rumah lama ni orang dulu cakap jenis 'Cengal Batu'. Kayu ni jenis yang tak makan paku, anai-anai pun tak mahu makan, tu sebab pakai pasak"(3). The pillars of this house were made timber called 'cengal batu'. This timber is so strong that nails could not penetrate and termites wont' eat, thus the builders is using 'pasak' (piece of small round timber used to lock joints. "...sekarang ni adik saya yang bongsu (Raja Norziation) duduk situ, rumah kayu tu dia la pulak yang menjaganya"(3). ...and now my younger sister Raja Norziation Raja Kamarudin is staying at this house and it is up to her now how she would preserve it. Kamarudin marks another conservation point of this traditional Malay house.

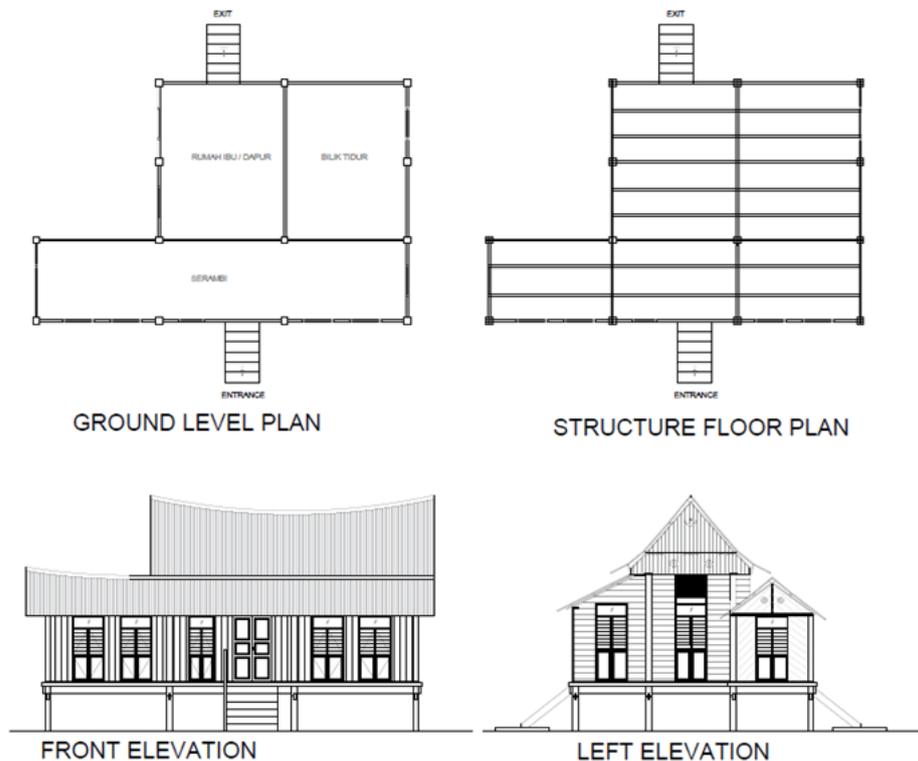
"...saya tahu rumah tu, dulu di baroh, masa nak pindah ke darat, saya ada sekali menolong. Orang kampung datang dalam 20 orang. Mula-mula kami buka dinding, lantai dan atap. Kemudian kami angkat ramai-ramai guna kayu, dalam 3 orang untuk satu tiang dan kami letak kat darat. Lepas tu tukang pasang balik dinding, lantai dan atap ikut keadaan asal"(4). ...I know that house, it was at 'baroh' originally and I was one of about 20 villagers that helped moving the house. First, we disassemble the walls, floors and roof, then we carry with 3 people at a pillar to its current location. Once there, the carpenter would reinstall the parts of the house. Sufian is a neighbour of Raja Kamarudin.

Facts on architecture influence were taken from Samad's writing on houses in Negeri Sembilan as, "Di Sumatera, terdapat rumah -rumah tradisional yang sengaja dibuat lentik dinamakan rumah lontik. Bubungan yang lentik merupakan rekaan yang berdasarkan konsep atau imej perahu. Atap perahu Melayu kelihatan seperti lentik yang disengajakan, iaitu bukan lentik alami yang disebabkan oleh graviti"(5). In Sumatra, there a trace of houses that uses a long curvy roof and were called 'lontik' (curve). In his opinion, the curvy roof was derived from the shape of a 'perahu' (small Malay wooden boat), and it is not as the force of gravity. "Bagi masyarakat Minangkabau, bubungan yang lentik merupakan simbolik kepada tanduk kerbau dan menjadi simbol kemenangan bagi masyarakat ini."(5). For the Minangkabau community, the curvy roof is a symbolic mimicry of a bull's horns which also portrays victory. Samad states another architectural influence of these Minangkabau roofs. He added on the interior space, "Semua rumah tradisional di Negeri Sembilan mempunyai susun atur ruang yang sama; berserambi panjang pada bahagian hadapan, ruang rumah ibu di tengah dan ruang rumah dapur di belakang.i- Ruang depan - dominan lelaki dan tetamu,ii- Ruang ibu rumah - ruang paling penting terhormat, iii- Ruang belakang - dominan perempuan dan tempat masak-memasak"(5). All Malay traditional houses in Negeri Sembilan has the same space zoning, long veranda at the front, 'rumah ibu' or living and bedroom in the middle, and kitchen at the back. i: front of the house – male and guest dominant space. ii: 'rumah ibu' – most important and private space. iii: rear space – dominant for women and cooking. Here, Samad is describing the space zoning of public and private space.



**Figure 2:** Views of Raja Kamarudin's house and its joint of pillar, beam and floor joist (lower right)

Figure 2 shows the elevation of the house. Its façade has a clear Minangkabau identity by just having the slender curve on the roof. No other curving element can be found on any other part of the house thus showing the strong dominance visually.



**Figure 3:** Plans and Elevation that were redrawn of Raja Kamarudin's house.

Figure 3 shows drawings that was used to study proportional and ergonomics of space and façade of the house. On the front elevation, roof curvy lines that is said not because of gravity pull, expresses motifs of the Minangkabau Community but is unique to Negeri Sembilan, as those in Sumatera has extreme curves and very pointy.

### 3. Results and Discussions

Microclimatic influence in architecture can be clearly seen through peninsula Malaysia on the different types of space planning, and roof design and angle. But for the Minangkabau community, their architectural influence has a mixture of cultural background imbedded architecturally. This can be proved in the curving roof (motif of boats and bull's horns), and in the space zoning where the Malays segregate private and non-private space to cater for guest of the house.

### 4. Conclusions

Based on the historical background of Kampung Terusan and Raja Kamarudin's timber house, it can be concluded that the value of conservation is always the priority of the owner even when new technology of preserving timber is far reach. The methodology of conservation in before chemical mix are used, remain unknown as the generation has passed. Nonetheless, the villagers thinking of that a house, will not deteriorate if it is occupied, might be the answer to timber houses that lasted for generations like the house of Raja Kamarudin.

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