

THE SIMILARITY OF MALAY ARCHITECTURE TERMINOLOGY: *PERAHU* AND HOUSE

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ABSTRACT

The perahu also known as boat was used by the Malay community during the Holocene period when the rise of the sea level altered the Malay world and it became islands and a peninsula. The perahu became important, not only as a navigational vessel but served as a shelter during the journey. As sailing is a part of Malay way of life, many perahu manifestations are often seen in housing construction. The objectives of this paper are to outline the features of perahu used around Negeri Sembilan traditional house – architecture with kajang perahu analogy – and to raise questions on what are the similarities between the terminology perahu and house. The questions look through literature review analysis and identify elements and components related to the house.

Keywords: *Malay, architecture, terminology, perahu, house*

INTRODUCTION

What can we expect from a maritime terminology? Liebner (1992) said names of *perahu* parts will probably tell us a great deal about the transfer of boatbuilding skill in the last 500 years or so between the different islands in the archipelago. The transfer of boatbuilding skills may also impact the architecture development since *perahu* has been used as a shelter during the sea-faring activities.

The *perahu* is a kind of water surface transportation vessel which is made of timber. The *perahu* has been used since the Holocene, about 10,000 to 11,000 years ago when humans in the Malay archipelago were separated as a result of the rise in sea level (Rahman, 2012). They used boats to sail from one place to another, along rivers or beaches, in search of livelihood.

The use of the *perahu* is not only as a means of transportation but it also shapes the Malay way of life. The development of the *perahu* in maritime life has formed the evolution of life on land that affects the architectural design of traditional Malay houses. This is in line with the views of Yaakub Idrus (1996), who states that the roof of a Negeri Sembilan traditional house uses the *kajang perahu* analogy as a roof or awning.

Based on this fact, research studies continue to find similarities of terminologies that exist between the Malay architecture of *perahu* and house. This study involves a review of the literature on marine navigation and terminologies used by the Malay. The results will list the terms and terminologies involved in both architectures. The conclusion of the study suggests the possibility of how it happened.

OBJECTIVE AND METHODOLOGY

This paper aims to cover part of the objectives in investigating the similarities and terminologies used in *perahu* and traditional Malay house. Data was collected from sources such as Malay ethnics or Austronesian literature on shipping and maritime activities.

The research methodology was qualitative. It involved documentation of data analysis in literature review which leads to a better understanding between the sea-faring culture and Malay architecture development. The understanding of this relationship will form the basis to unravel the elements and components used in Malay architecture, hence identifying how the similarities of terminologies are transferred from perahu to the Malay house.

LITERATURE REVIEW

The Malay Sea-Faring Culture

Sailing and fishing with the use *perahu* are hereditary Malay activities over thousands of years (Daud, 1993). The *perahu* has been very significant in the life of the Malay. This is stated in a note by Wallace (1869), an English biologist in the book ‘The Malay Archipelago’ about the characteristics of the original inhabitants of the Malay Archipelago:

“The native are true Malay, never building a house on dry land if they can find water to set it in, never going anywhere on foot if they can reach the place in a boat.”

It shows that the relationship of the native Malay with water and the ocean is so close to the extent that the natives will not build a house on dry land while they still can build one on water and will not go anywhere on foot where they can be reached by *perahu*.

Malay sailors and fishermen traced to the southern islands of Japan, saw a direct relationship with the local community. The Ainu people who are the original inhabitants of Japan transacted and interacted with Malay sailors since the classical period (Griffis, 1907) and shaped the character of the Japanese as indigenous people.

Ainu people assimilate subtly, and their ability to adapt is outwardly the characteristics of the Malay sailor (Robert, T. Porter, 1911). Also, the

characteristics of the Malay sailor has also established the Japanese national value through skill and ingenuity in seamanship (Rev. Walter Weston, 2007). Transactions and interactions of Malay sailors with the Japanese people are not limited in sociology but also extended to the architectural design. Japanese design house architecture is seen to have the same construction principles with the traditional Malay house as mentioned by Griffis (1907):

“The Japanese dwelling house never had its origin in China. In its evolution, it is a Malay structure modified by Ainu inheritances and the material example found in the soil. It is not earth floored as in India or brick or stone bottomed as among the Chinese and Koreans. It is built on posts and the floor, raised above the ground, are mat covered.”



Figure 1: Expansion of Austronesian (Malay) settlement in Southeast Asia and Oceania from mainland of Indonesia and Malaysia
Source: Roxana Waterson (1998), Bellwood (1997)

The Malay Perahu

According to Liebner (2005), a *perahu* researcher in Southeast Asia, the early history of *perahu* making in the archipelago is very minimal. It is derived from historical writings, paintings or small sculptures, and

archaeological images fresco on the Borobudur temple which was built in 825 AD. He stated that there are variations in the design of the *perahu* in the archipelago.

The first feature is *cadik* and *katir* (outrigger). *Cadik* and *katir* are bamboo or wood mounted on either side of a *perahu*, shaped like a wing to control and balance the *perahu* from being capsized (*Kamus Besar Bahasa Indonesia*, 2015). The second feature is that the *perahu* is built based on *perahu batangan*, which is using one or more pieces of wood planks by lashed-lug technique.

According to Daud (1993), a researcher of Malay *perahu*, the earliest *perahu* was the *perahu jalur*, made from a halved timber which typically was in the form of a narrow and lower *perahu* (Daud, 1993; Perahu, 1984).

Perahu jalur was also known as *balok* (Daud, 1993; Mills, 1930) or *baluk* (Lee, 1986; Liebner, 2005) meaning a wood plank (Liebner, 1996) which equals to the *balak* (timber). The use of timber like *cengal* and *meranti* species was also found in the construction of Malay house structures such as pillars and floor.

The *perahu* of various types was constructed based on functionality and usability. *Perahu bedar* was used for lifting heavy items and shaped like a duck to spoon up, higher at the back (Daud, 1993; Perahu, 1984). The *perahu sekoci* was used to sail the ocean because of the sharp keel and the bow, while the *perahu payang* with the rounded bow and back was used for trawl fishing (Daud, 1993; Perahu, 1984).

Also, there is a *perahu kulit* made from the bark of *meranti*, tied with cane blades. *Perahu jokong* or *jukong* (Liebner, 2005) matched the *perahu jalur* but is larger, *perahu kajang* or *kajangan* or *setak* which had roofs and walls, *perahu kolek* and *perahu sampan* (Abdullah, 2000). Others *perahu* were *perahu lepa* (Sather, 2001), *gonting*, *kakap*, *mayang*, *padewakang* (*paduwakang*), *paduwang*, *pencalang* and *penjajab* (Liebner, 2005).

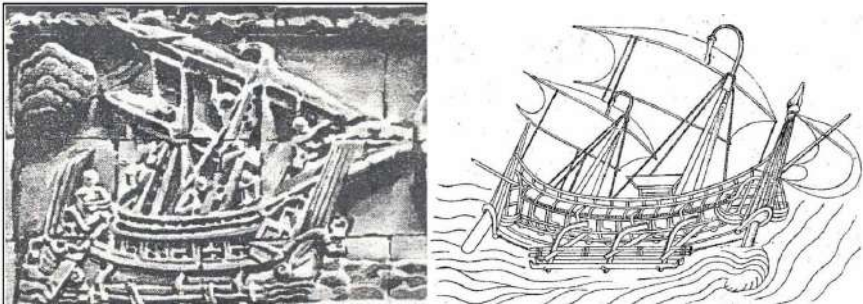


Figure 2: The earliest evidence of archipelago *perahu* design seen in the reliefs of Borobudur temple, Indonesia (left) and redrawing (right) by Hornell. *Cadik* and *katir* is mounted on side of a *perahu*
Source: Hornell (1920) and Liebner (2005)

Perahu and House Form

The *perahu kajang* has a similar function of a house (Kementerian Pendidikan & Kebudayaan, Direktorat Jenderal Kebudayaan, 2015). It has a house-roof structure made of woven palm leaves or pine, to cover an underneath space. The roof structure is known as *lipat kajang* (folding awnings) roof in tapering shape which may be analogous to the roof of the traditional Negeri Sembilan house (Idrus, 1996). At the stern of the *perahu kajang* is a bulge called *selungku* (Kementerian Pendidikan & Kebudayaan, Direktorat Jenderal Kebudayaan, 2015), nearly matching Negeri Sembilan Malay traditional house where it is slightly elevated at the area of *serambi* (verandah). Besides, the interior of the *perahu kajang* is seen as similar to a Malay house, which provides a central space for family members to relax and sleep at night. At the rear area, there is a *dapur* (kitchen) and *kamar mandi* (bathroom). Other features that describe this Southeast Asia boat are the holes at the sides surface of the board panel (wall) which function as windows of a traditional Malay house (Kementerian Pendidikan & Kebudayaan, Direktorat Jenderal Kebudayaan, 2015).

Perahu lepa of the Bajau Laut (Bajo) of the Sulu Sea, Semporna also functions as a dwelling (Stacey, 1999). The design of *perahu lepa* is almost the same, except it is much bigger than *perahu kajang* and has a vertical pole used to support the *layar* (sails). Vertical poles are associated with the *tiang seri* (main pillar) in a Malay house. Similarly, the *layar* (sails) which is synonymous with the *tibar layar* is located at the end of the roof.

Perahu analogy was also detected in the elements of the Malay house as described by Phillip Gibbs (1987), who wrote:

“The word for the posts of the house is *tiang*, which is also the word for the mast of a boat. The word for flooring is *lantai*, which is also the word used for the flooring at the bottom of the boat. The word for the equilateral triangular gable-end is *tibar layar*. *Tibar* means ‘end’ and *layar* (‘the sail of a boat’). Sitting on the floor of Malay house is analogous to sitting in the breeze blowing off the sail of a boat.”

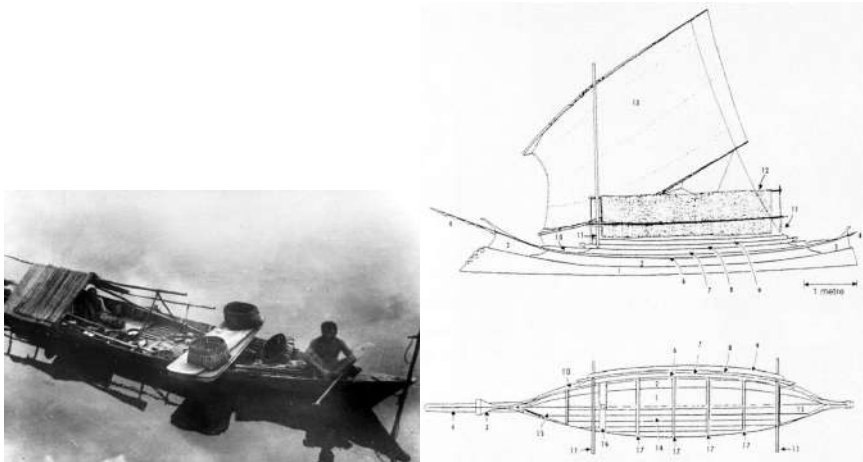
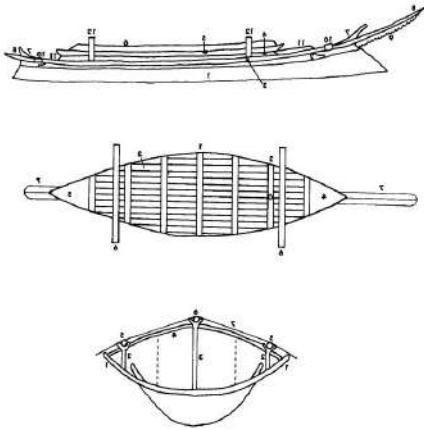


Figure 3: *Perahu kajang* (left) (Adam, 1921) and *perahu lepa* (right) (Sather, 2011) functioning as the house has *atap kajang* (awnings) made of leaves in the middle of the *perahu*

The final wall plank of *perahu lepa* namely *ding-ding* (Nimmo, 1990), is similar as *dinding* (wall) of the Malay house. According to Nimmo, (1990) *ding-ding* is usually carved on both ends, where *dinding* in the Malay house is also filled with carving motif functioning as ventilation purposes. Carved *adjung-adjung* which is located at the extension of the *haluan* (bow) and *buritan* (stern) is also reflected in the *anjung* (porch) on the left and right of the Malay house (Nimmo, 1990). *Perahu lepa* decks are called *lantai* or floor (Nimmo, 1990), similar to the Malay house. The roof structure of *rumah perahu* (houseboat) is also known as *kubu* or bunker (Nimmo, 1990). It is made of vertical timber board and permanently attached to a framework. On both sides of the houseboat, carved lattice is located to function as ventilation space in the boat.



- Legends:
1. *Tadas*: the keel.
 2. *Pengahapit*: the first plank of the hull.
 3. *Bingkol*: the second plank of the hull.
 4. *Kapi-kapi*: the third plank of the hull.
 5. *Durun-durun* (or *koyang-koyang*): the fourth plank of the hull, usually carving at either end.
 6. *Ding-ding* (wall): the final plank, usually with carving at either end.
 7. *Tujuh*: the main bow and stern piece of the hull.
 8. *Jung'ar*: The long prow and that extends beyond the *tujuh* at the bow, and the small extension beyond the *tujuh* at the stern.
 9. *Ling'ai'at*: The strip of carving sometimes found under the *jung'ar*.
 10. *Sikom*: The small brace at the bow and stern that holds the two *tujuh* together.
 11. *Adjung-adjung*: The bow and stern extensions of the *kapi-kapi*, which usually have carving.
 12. *Sa'am*: The brace with carved wing-like projections that extend beyond the hull at the bow and stern.

Figure 4: Perahu lepa specification
Sources: Nimmo (1990)

Reflection of Malay Maritime and Architecture Terminology

The literature on the relationship between the traditional Malay house and the boat is limited. One method is the commentary by Liebner (1990) - a researcher of maritime terminology in Buton language inspired by the works of Isidore Dyen (1963) - A Lexicostastistical Classification of Austronesian Languages. He examined the linguistics data, namely lexicostatistics to answer anthropological questions, including navigation methods and the relationship of language among the Austronesian tribes who live nearby the coast, such as Makasar, Bajau (Bajo), Madura (Madurese) and Buton.

Comparing the architectural terminologies of traditional Malay houses with maritime activities is also significant because the type of boats used by the Malay tribes were almost the same (Haddon, 1937; Hornell, 1920, 1936). This study applies Austronesian cultural diversity in maritime activity as a means to find a relationship between the Malay tribes *perahu* in proving the origin of the construction of the traditional Malay house.

Among the possibilities are the materials used, as stated by Nimmo (1990), the importance of forest in supplying *balak* (timber) for construction of *perahu* and Malay house. *Balak* splitting technique in producing poles and planks for the construction of boats and houses are similar. *Balak* is

also associated with name of animals. For example, the term *naga-naga* or dragon is taken from a large snake which symbolizes the foundation of human life (Liebner, 1990; Stoehr, 1952). *Naga-naga* means a timber which serves as loads/cargo (Liebner, 1990), that match the wooden rafters under the roof or floor. It simultaneously functions as *kayu naga* (dragon spine or king post) acting as support structures to the *kuda-kuda bumbung* or *kasau jantan rumah ibu* (rafters) which is also referred to as *nenaga* or *naga-naga* (Abd Rashid & Che Mat, 2008). The term *tangara* is also associated with the structure of a traditional Malay house, which means *tiang dasar rumah* or home base pillar (Liebner, 1990) which almost equals the word *tangga* (stairs) located along with pillars under the house floor.

Liebner (1992) also confirmed that the term *kamar perahu* (houseboat) is associated with the component parts of the house. The *perahu* roof called *helombo* or *kabul* (meaning leaf) is the timber which supports roof pillars and namely *popuruki*, *busuki* or *umbo* (which means a timber that is used in traditional houses), *kaso atai sao* means timber roof (in Malay, equals to *kasau* or rafter in the house roof structure) which means *balok/balak atap* (beam/timber roof) which is also used in Buton, and *helop*, *soha* and *foninto* refer to the name of the door or window to the room (in the deck) or houseboat (Liebner, 1990).

He also added that the term *jamba* in Buton which is the small room at the back of the *lambo* boat imitates the word *jambang* (means waste water) in Bugis (Liebner, 1990) which are equal to the word *jamban* in the Malay language that serves as a toilet in the backward traditional Malay houses.

Meanwhile, the word *lante* in Buton language which refers to a bamboo flooring used in boat matches with the Malay house floor namely *lantai* (Liebner, 1990). While, the term *polanto* which refers to a bamboo raft used for upstream and downstream of the outfall (Liebner, 1990). *Polanto* is similar to *pelantar* platform in Malay house made of halves of bamboo or areca nut tree.

Liebner highlights four most original words in the Malay seafaring namely *pulau* (island), *air surut* (low tide), *air pasang* (high tide), *batu karang* (the corals). The *air* (water) is called *tai* like *tenau tai* and *tai siwulu* mean low tide while *eke (nu) tai* means the high tide (Liebner, 1990). *Tai*

or seawater is a horizontal level when the boat sail is almost equalled to the term *lantai* (floor) which is a flat surface in the house that symbolically depicts Malay house like a ship, sailing on it.

The use of tilted-rectangular sails on *perahu* matched the shape of *tebar layar* applied on traditional Malay house roof (Liebner, 2005). *Perahu* construction techniques also equalled with traditional houses. Both use connecting pins or *pasak* between the boards and wood (Liebner, 2005).

The terms *anjung* or *anjungan* (balcony) is a space located in Malay houses and *perahu*. Liebner (1992) stated that *anjung* is located at the portion of the *perahu* hull where there is a part that was identified as *kotamara*, a protective or parapet wall. *Kotamara* wallboard recognised as *repe-repe* intending *tindis* (imbrication), *tindas* (overlay) (Liebner, 1990) coincide with the installation of *dinding papan tindih* or overlapping wallboard on traditional Malay house.

RESULTS AND DISCUSSION

The study found similarities between the architecture terminologies of *perahu* and traditional Malay houses as seen in the use of design analogies and manifestation and consciousness displacement of carpentry knowledge. The terminologies involved spatial component, motive elements, and structure form as shown in Table 1. This phenomenon may have occurred when the Malay house used *perahu* as design references during the transition process. Another possibility is that the construction of Malay houses and *perahu* were by the same *tukang* or carpenter.

Table 1: Data findings on the similarity of architecture terminology of Malay perahu and traditional house

Source	Literature	Similarity Terminology
Idrus, Y. (1996)	The roof structure is known as <i>lipat kajang</i> (folding awnings) roof in tapering shape which may be analogous to the traditional house of Negeri Sembilan roof.	1. <i>Bumbung lipat kajang</i> (boot awnings)
Kementerian Pendidikan & Kebudayaan, Direktorat Jenderal (2015).	The interior of the <i>perahu kajang</i> is seen similar to a Malay house which provides a central space for family members to relax and sleep at night. At the rear area, there is a <i>dapur</i> (kitchen) and <i>kamar mandi</i> (bathroom). Other feature that describes this Southeast Asia boat are the holes at the side surface of the board panel (wall) which functions as windows of a traditional Malay house.	1. Central space (living area) 2. <i>Dapur</i> (kitchen) 3. <i>Kamar mandi</i> (bathroom) 4. Holes as window
Stacey, N. (1999)	<i>Perahu lepa</i> of the Bajau Laut (Bajo) in the Sulu Sea, Semporna also functions as a dwelling. The design of <i>perahu lepa</i> is almost the same except that it is much bigger than <i>perahu kajang</i> and has a vertical pole used to support <i>layar</i> (sails). Vertical poles were associated with the <i>tiang seri</i> (main pillar) in the Malay house. Similarly to the <i>layar</i> (sails) which is synonymous with the <i>tibar layar</i> which is located at the end of the roof.	1. <i>Tiang</i> (Vertical poles/post) 2. <i>Tibar layar</i> (gable) or <i>layar</i> (sail)

<p>Phillip, G. (1987)</p>	<p>“The word for the posts of the house is <i>tiang</i>, which is also the word for the mast of a boat. The word for flooring is <i>lantai</i>, which is also the word used for the flooring at the bottom of the boat. The word for the equilateral triangular gable-end is <i>tibar layar</i>. <i>Tibar</i> means end and <i>layar</i> (the sail of a boat). Sitting on the floor of Malay house is analogous to sitting in the breeze blowing off the sail of a boat.”</p>	<ol style="list-style-type: none"> 1. <i>Tiang</i> (post) 2. <i>Lantai</i> (floor) 3. <i>Tibar layar</i> (gable) or <i>layar</i> (sail)
<p>Nimmo, H. A. (1990).</p>	<p>The final wall plank of <i>perahu lepa</i> namely <i>ding-ding</i>, is similar as <i>dinding</i> (wall) of Malay house.</p>	<p><i>Dinding</i> (wall)</p>
	<p>Carved <i>adjung-adjung</i> located at the extension of the <i>haluan</i> (bow) and <i>buritan</i> (stern) also reflects the <i>anjung</i> (porch) on the left and right of the Malay house.</p>	<p><i>Anjung</i> (balcony)</p>
	<p><i>Perahu lepa</i> decks are called <i>lantai</i> or floor, similar to the Malay house.</p>	<p><i>Lantai</i> (floor)</p>

<p>Stoehr (1952), Liebner (1998), Abd Rashid & Che Mat (2008).</p>	<p><i>Balak</i> is also associated with animal names. For example, the term of <i>naga-naga</i> or dragon is taken from a large snake which symbolizes the foundation of human life (Stoehr, 1952). <i>Naga-naga</i> means a timber which serves as loads/cargo (Liebner, n.d.), that matches the wooden rafters under the roof or floor. It simultaneously functions as <i>kayu naga</i> (dragon spine or king post) acting as support structures to the <i>kuda-kuda bumbung</i> or <i>kasau jantan rumah ibu</i> (rafters) which also referred to as <i>nenaga</i> or <i>naga-naga</i> (Abd Rashid & Che Mat, 2008).</p>	<ol style="list-style-type: none"> 1. <i>Balak (naga-naga)</i> 2. <i>Naga-naga</i> (roof of floor rafter) 3. <i>Kayu naga</i> (dragon spine or king post) 4. <i>Kuda-kuda</i> or <i>kasau (menaga or naga-naga)</i>
<p>Liebner (1990)</p>	<p>The term <i>tangara</i> term is also associated with the structure of a traditional Malay house which means <i>tiang dasar rumah</i> or home base pillar (Liebner, n.d.) almost equalled the word <i>tangga</i> (stairs) located along pillars under the house floor.</p>	<p><i>Tangara</i> or <i>tiang dasar rumah (Tangga)</i></p>
<p>Liebner (1992)</p>	<p>The term <i>kamar perahu</i> (houseboat) is associated with the component parts of the house.</p>	<p><i>Kamar perahu</i> (houseboat)</p>
<p>Liebner (1990)</p>	<p><i>Kaso atai sao</i> means timber roof (in Malay equal to <i>kasau</i> or rafter in the house roof structure) which means <i>balok/balak atap</i> (beam / timber roof) is also used in Buton.</p>	<ol style="list-style-type: none"> 1. <i>Kaso atai sao (kasau)</i> or rafter 2. <i>Balok/balak</i> (beam)

Liebner (1990)	The term <i>jamba</i> in Buton which is the small room at the back of the lambo boat imitates the word <i>jambang</i> (means waste water) in Bugis (Liebner, 1990) are equalled to the word <i>jamban</i> in the Malay language that serves as a toilet in the backward traditional Malay houses.	<i>Jamba / jambang (jamban)</i> or toilet
	The word <i>lante</i> in Buton language refers to a bamboo flooring used in the boat matches the Malay house floor namely <i>lantai</i> (Liebner, 1990).	<i>Lante (lantai)</i> or floor
	The term <i>polanto</i> which refers to a bamboo raft used for upstream and downstream of the outfall (Liebner, 1990). <i>Polanto</i> is similar to <i>pelantar</i> or platform in the Malay house made of halved bamboo or areca nut tree.	<i>Polanto (pelantar)</i> or platform
	Four most original words in Malay seafaring are: <i>pulau</i> (island), <i>air surut</i> (low tide), <i>air pasang</i> (high tide), <i>batu karang</i> (the corals). The <i>air</i> (water) is called <i>tai</i> like <i>tenau tai</i> and <i>tai siwulu</i> means low tide while <i>eke (nu) tai</i> means the high tide (Liebner, 1990). <i>Tai</i> or seawater is a horizontal level when the boat sail is almost equal to the term <i>lantai</i> (floor) which is a flat surface in the house that symbolically depicts a Malay house like a ship, sailing on it.	<i>Tai</i> (seawater) equal to term <i>lantai</i> (flat surface in the house)

<p>Liebner (2005)</p>	<p>The use of tilted-rectangular sails on <i>perahu</i> is matched to the shape of a <i>tibar layar</i> applied on traditional Malay house roof (Liebner, 2005).</p>	<p><i>Tibar layar</i> (tilted-rectangular sail)</p>
	<p><i>Perahu</i> construction techniques also equalled to the traditional houses. Both are using connecting pins or <i>pasak</i> between the boards and wood (Liebner, 2005).</p>	<p><i>Pasak</i> (pins)</p>
<p>Liebner (1992), Liebner (1990)</p>	<p>The terms <i>anjung</i> or <i>anjungan</i> (balcony) is a space located in the Malay houses and <i>perahu</i>. Liebner (1993) stated that <i>anjung</i> is located at the portion of the <i>perahu</i> hull where there is a part that was identified as a <i>kotamara</i>, a protective or parapet wall. <i>Kotamara</i> wallboard recognised as <i>repe-repe</i> intending <i>tindis</i> (imbrication), <i>tindas</i> (overlay) (Liebner, 1990) co-incides with the installation of <i>dinding papan tindih</i> or overlapping wallboard on the traditional Malay house.</p>	<p>1. <i>Anjung / Anjungan</i> (balcony) 2. <i>Repe-repe (dinding papan tindih)</i></p>

CONCLUSION

In conclusion, this paper developed an understanding of the relationship between Malay *perahu* terminology and traditional Malay house. It had shown the similarity of terminology in the Malay architecture in spatial component, motive elements, and structure form. The similarity could happen through *merantau* (travelling) process due to many factors. Possible factors are transition of knowledge of construction by the same *tukang* or carpenter of *perahu* and Malay traditional house.

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