Establishing the Architectural Definition/Inventory of the Traditional Perak Malay Kutai Houses (of the 1820'S–1900'S) and Its Potentials for the Purpose of Restoration, Conservation and Tourism

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Abstract

The main objectives of the paper is to share the findings of an academic research on the potentials of the Perak *kutai* houses as building heritage and for the benefit of the tourism industry.

The Perak Malay traditional *Kutai* house is a decaying early 19th Century architectural heritage of Perak, found along the banks of Perak River and its various tributaries. Research undertaken between 2001-2004 on the "Form, Function and Meanings" of the *kutai* houses of Perak showed the oldest surviving houses were built circa 1820 or at 180 years old. Two of the houses were of the 12-Pillar type, and one of the 16-Pillar types, all of which are occupied. One of the surviving *kutai* houses of the 12-Pillars type built in the 1820's was identified in Kuala Kangsar, currently left in decay at Kota Lama Kiri after it was relocated and restored (1987) by Badan Warisan Malaysia (Refer to Plate 1.0)

Uncoordinated attempts by individual organization or authority to conserve *Kutai* Asli or any other Malay traditional houses could prove to be a futile attempt and wastage of resources. For instance, the rehabilitated *Kutai* Itam Bahak (of the KAT-12 type) sponsored by the Badan Warisan Malaysia in the late 1980's at Kota Lama Kiri, Kuala Kangsar started with a noble intention and a considerable sum of money, but is currently left unused, poorly maintained, and faced with the perils of a leaking attap roof and further decay.

Practical and cost effective attempts in preserving the rare and precious heritage of the *Kutai* Asli houses require sincere and serious collaborations with the relevant authorities.

Key Words: *Kutai*, traditional Malay house, architectural language, conservation, preservation.

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Introduction

For the purpose of conserving the *Kutai* houses as a building heritage, precise definition on the "architectural language" and a complete "inventory" of the house form, structure, components and method of house construction must be initially documented, measured and established.

1. The *Kutai Asli Tiang* 12 (12-Pillar Original *Kutai*) and the *Kutai Asli Tiang* (16-Pillar Original Kutai) house types.

The *Kutai Asli* (Original *Kutai*) was considered the oldest surviving origins of the *"kutai"* houses, traced as far as 1820's. It is a complete house entity, whose spatial component comprises the front and back *serambi* (reception), the *ruang tengah* (middle space) and the solitary *bilik* (room). Its total built up floor area ranges from 422 square feet to 1080 square feet.

There are two types of *Kutai Asli* houses, namely the *Kutai Asli* Tiang-16 (KAT-16) and *Kutai Asli Tiang*-12 (KAT-12). Both the KAT-16 and KAT-12 house types had identical house forms, spatial components and building components, except for the total number of columns. The KAT-12 differs from the KAT-16 by having a slightly smaller total floor area and the occasional *serambi jatuh* (split-level front *serambi*) variation of the KAT-12 type.

The KAT-16 type was the house of the wealthy and the nobles, as well as for the commoners, their individual ownership and status undistinguishable from afar. On close encounter, the KAT-16 houses of the Nobles and the wealthy had wall openings; door and window headers that were decorated with intricate woodcarvings as well as the identical pair of hanging *labah bergantung* members.

The KAT-12 house type belonged to the commoners; using *kelerai* (thatched split-bamboo) walls that were woven with a variety of attractive patterns and design motifs. The wealthier amongst the commoners may have carved horizontal slit window openings at the front elevation of the KA houses.

1.1 Definition KAT-12 and KAT-16 by House Form (House Plan, Section, Elevation and Column alignment).

The basic plan, section, and elevation of the KA house form have symmetrical and asymmetrical elements, as in the following Figure 6. The rectangular house plan is almost symmetrical by its central axis except that the placements of the front and back stairs are slightly misaligned from the central axis line.

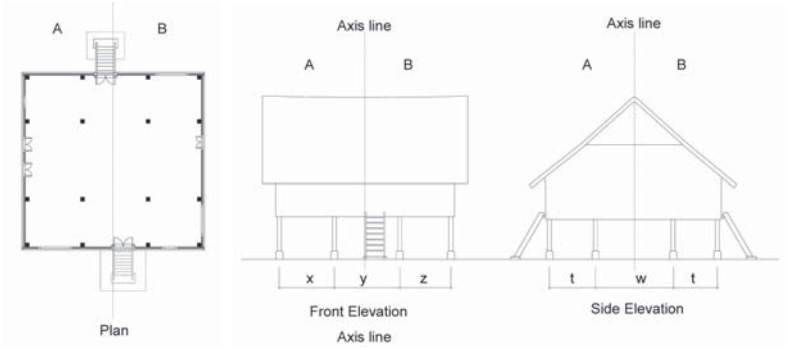


Fig. 1: The symmetrical and asymmetrical elements of KAT16 House Type, showing plan, front and side elevation.

Both the basic front and back elevations of the KA house had their vertical axis line cutting the roof and the wall symmetrically. However, the placements of the front row of four columns amongst KAT16 house types are divided into two groups, one group having its 'x' and 'z' measurement as equidistant and the other group having its 'x' and 'z' of differing lengths or spans (Refer to Fig. 6). The dimension of 't' at the side elevations of the house is always equidistant.

The choice of either 12 or 16 numbers of columns that supports the KA house types calls for a sophisticated underlying principle of house structure and columns configurations or placements. The basic KAT16 and KAT12 house plan prototypes reveal the column-row alignments that were integrated with the floor beams *(rasuk)* and cross beams *(rok)* row alignments (Refer to Fig. 7)

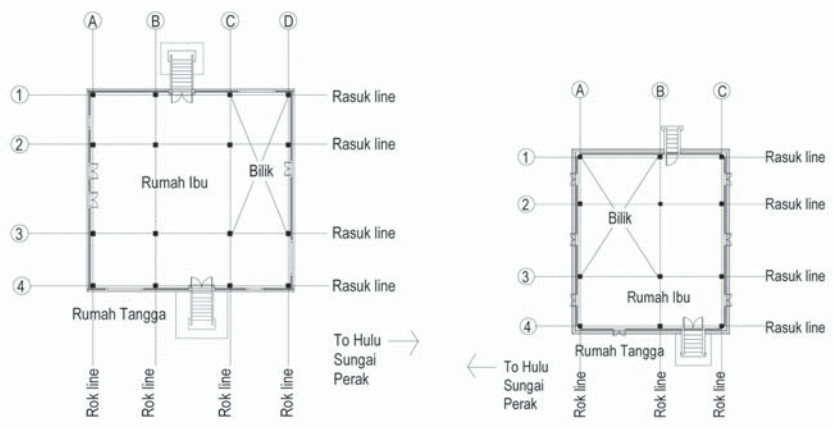


Fig. 2: Column-beam and cross beam alignments of KAT16 – House of Tok Sedera Bongsu at Bota Kiri & Column configuration of KAT12 – House of Ngah Ngin at Padang Rengas.

1.2 Spatial Organisation / House Floor Plan

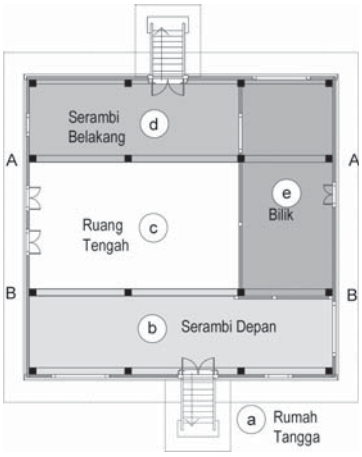
Kutai 16 pillar House

The maximum size of the total floor area is 1057 square feet (37ft-4ins x 26ft-7ins)

The minimum size of the total floor area is 498 square feet (24ft-9ins x 19ft-2ins)

Kutai 12 pillar House

The maximum size of the total floor area is 541 square feet (24ft-8ins x 21ft-11ins) The minimum size of the total floor area is 422 square feet (20ft-1ins x 20ft-0ins)



House Spatial Components of KAT 16:

'a': *Rumah Tangga* (Staircase house component).

'b': *Serambi Depan* (Front *Serambi* / Front Reception).

'c': *Ruang Tengah / Rumah Tengah* (Middle Space / Middle house compartment).

'd': *Serambi Belakang* (Back Serambi / Back Reception).

'e': *Bilik* (Room).

1.3 Evolution of the Kutai Asli T16 (KAT-16) House type.

From circa 1890's onwards, the KAT-16 house type had spatial component additions to the *Kutai Asli* house entity and thus evolved into the following variations:

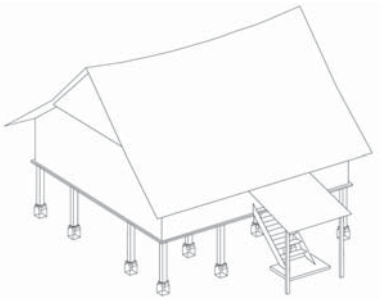


Fig.3: Kutai Asli Tiang 16 (KAT 16)
(Beginning Prior 1820's)

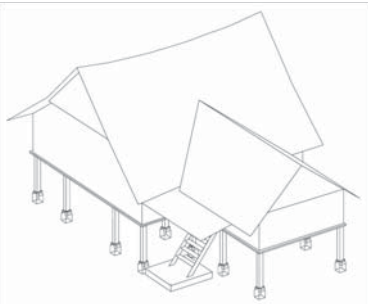


Fig. 4: Kutai Asli T16- Front Anjung
(Beginning circa 1880's)

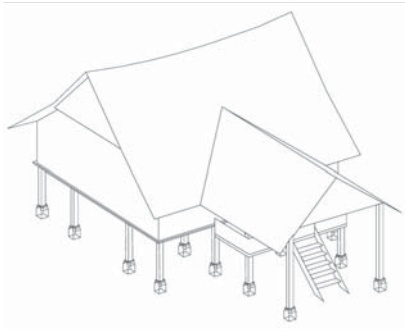


Fig. 5: Kutai Asli T16– Front Balai
(Beginning circa 1860's)

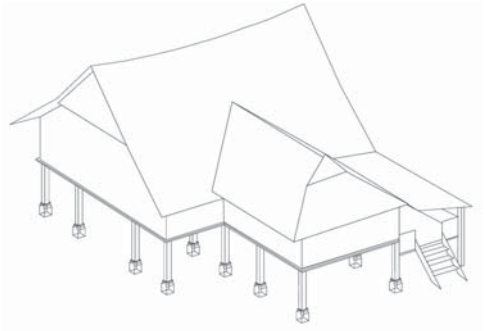


Fig. 6: Kutai Asli T16 – Front-Anjung-Beranda
(Beginning circa 1890's)

1.4 Definition of KAT-12 and KAT-16 by House Components and Method of Construction or Assembly.

The basic house building components of the KAT16 and KAT12 consist of the following six major components A, B, C, D, E and F:

A). Column Component.

B). Floor and Bendul Components.

C). Roof Components.

D). Wall Components.

E). Wall Opening Components.

F). Staircases.

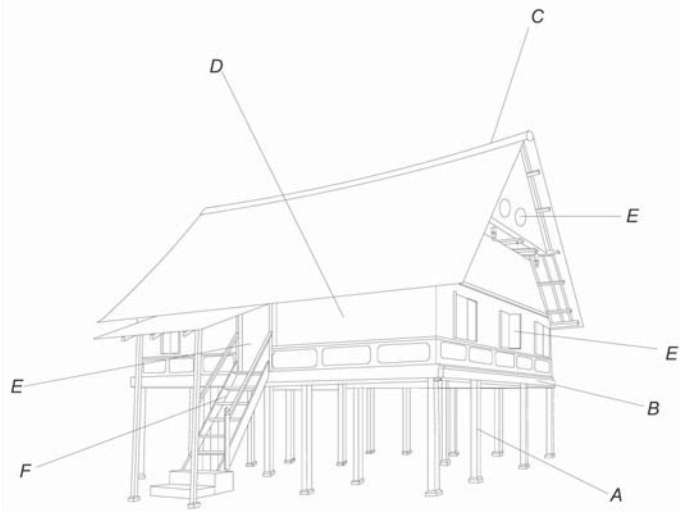


Fig. 7: The six basic Kutai 16-Pillar House Building Components.

The group items A to F in Figure 7 are the basic house building components or house building elements while the following list is the detail breakdown of the group components and their component members:

A). Column Component.

i) Column (*Tiang*) Types.

a. *Tiang Panjang* (Longer Column).

b. *Tiang Pendek* (Shorter Column).

c. *Tiang Seri* ("Radiant" Column).

d. *Tiang Tongkat* (Supporting Column).

ii) Column Parts and members.

a) *Alas Tiang* (Column pad).

b) *Kaki Chermin* (Column–base or footing portion).

c) *Lubang Rasuk* (Floor beam mortise hole).

d) *Lubang Rok* (Cross-beam mortise hole).

e) *Baji* (Wedge).

f) *Puting* ("Nipple") and pasak (Dowel).

B). Floor and Bendul Components.

i) Floor Component Members.

a. *Rasuk or Rasuk Panjang* (Beam or Long Beam).

b. *Rok or Rasuk Pendek* (Cross Beam or Short Beam).

c. *Gelegar* (Joists).

d. *Kekaras* (Joist leveller).

e. *Papan Lantai Rapat* (Butt-jointed Floor boards).

f. *Papan Lantai Jarang* (Floor board with gaps).

ii) Bendul Types and Component members.

a. *Bucu Bendul* (Bendul Corner).

b. *Bendul Luar* (Perimeter or exterior bendul).

c. *Bendul Dalam* (Interior bendul).

d. *Alas Bendul* (Bendul support).

e. *Papan Cantik or Papan Ombak-Ombak*,(Decorative floor eave board).

C). Roof Components.

i) Main Triangular Roof Truss Component and members.

a. *Tunjuk Langit* (Sky or Heavens pointer).

b. *Papan Sendeng* (Tilting beam or board).

c. *Kasau Jantan* (Male rafter).

d. *Kepala Tiang or Alang Panjang*(Column header or Longer Roof beam).

e. *Alang Lintang or Alang Pendek* (Roof Cross beam or Shorter Roof Beam).

g) *Nenaga or Middle Longer Roof Beam* (Suspended Longer Roof beam).

ii) Other Main Roof Component Members.

a. *Kasau Betina* (Female rafter).

b. *Mengulung* (Roof purlin).

c) *Papan Kening or Papan Bator* ("Eyebrow" roof eave board).

d) *Lebah Bergantung* ("Hanging Bee").

e) *Perabung or Tulang Bumbung* (Ridge board).

f) *Tebar Layar* (Roof gable wall

D). Wall Components.

i) Wall types:

a. External Wall.

b. Internal Wall.

ii) Wall Component members.

a. *Jenang Dinding* (Wall Frame).

b. *Papan Kembung* (Timber wall Panel – Horizontal member).

iii) Types of wall finishes.

a. *Dinding Papan* (Sawn timber plank wall).

b. *Dinding Kayu* (Solid timber Panel Wall – Vertical member).

c. *Dinding Kelerai Buluh / Bertam* (Split bamboo and Bertam weave wall).

d. *Dinding Kulit Kayu* (Wood Bark Wall).

E). Wall Opening Components.

a) *Pintu* (Door).

b) *Kepala Pintu* (Door Header).

c) *Tingkap* (Windows).

d) *Kepala Tingkap* (Window Header Panel).

e) *Bukaan Tetap Berukir* (Fixed opening with carvings).

f) *Lubang Angin* (Ventilation opening).

F). Staircases.

i) I*bu Tangga* or *Peha Tangga* (Stair Stringers).

ii) *Anak Tangga* (Steps or Stair Threads).

iii) *Puting* and *Pasak* of *Anak Tangga* (Protruding "nipple" ends and accompanying dowel of stair thread).

iv) *Kekisi /Jerejak* (Balustrades).

v) *Gelongsur Tangan* (Handrail).

vi) *Batu Alas Tangga* (Concrete or stone staircase pads).

v) *Tiang Tangga* (Stair newel post).

1.5 Method of house components assembly and construction of component members.

The KAT-12 and KAT-16 houses had a unique method of house assembly method practiced by the Malay *tukangs* of Perak that would differ from those practiced in the other Peninsular Malay states. To quote an example is the construction of the *rasuk* (beam)-*rok* (cross beam)-*tiang* (column), conjoined with the various floor components (Refer Fig. 8)

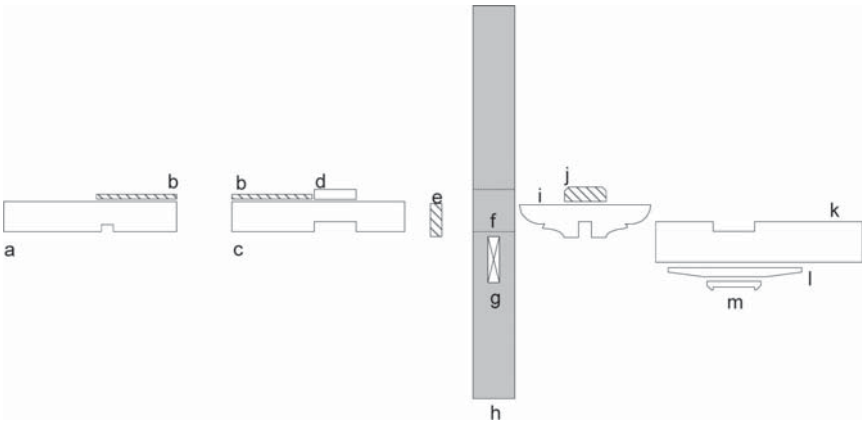


Fig. 8: Diagrammatic view of the adjoining "Floor-Column-Interior Bendul" components showing the various component members adjoined to the "middle column" (House of Haji Yunus of Sayong Lembah, circa 1890's).

The complete members to the "Floor-Column-Interior Bendul" components of the house of Haji Yunus comprised the following members:

a) *Gelegar* (Floor Joist).
b) *Papan Lantai* (Floor Board).
c) *Rok* (Crossbeam).
d) *Sendal* (Wedge).
e) *Kekaras* (Joist Leveler).
f) *Lubang Rok* (Crossbeam Mortise hole).
g) *Lubang Rasuk* (Beam Mortise hole).
h) *Tiang* (Column).
i) *Alas Bendul* (Bendul Support).
j) *Bendul Dalam* (Interior Bendul).
k) *Rasuk* (Floor Beam).
l) *Baji Panjang* (Longer wedge).
m) *Baji Pendek* (Shorter wedge).

1.6 Definition of KAT-12 and KAT-16 by House Decorative Elements

The KA also had specific placement of its various decorative elements. The employ of intricate woodcarvings was applied on door header panels, window header panels and wall openings (refer to Fig.9). The walls and the gable walls were sometimes adorned with geometrical patterns and motifs weaved in bamboo splits or *kelerai*. The use the following motifs portray symbolic meanings that reflect the cosmological worldview and spiritual aspirations of the Perak Malays, namely: the *Gunungan, Ombak-ombak,* the Cosmos, the flora, the fauna, and the combination of motifs.

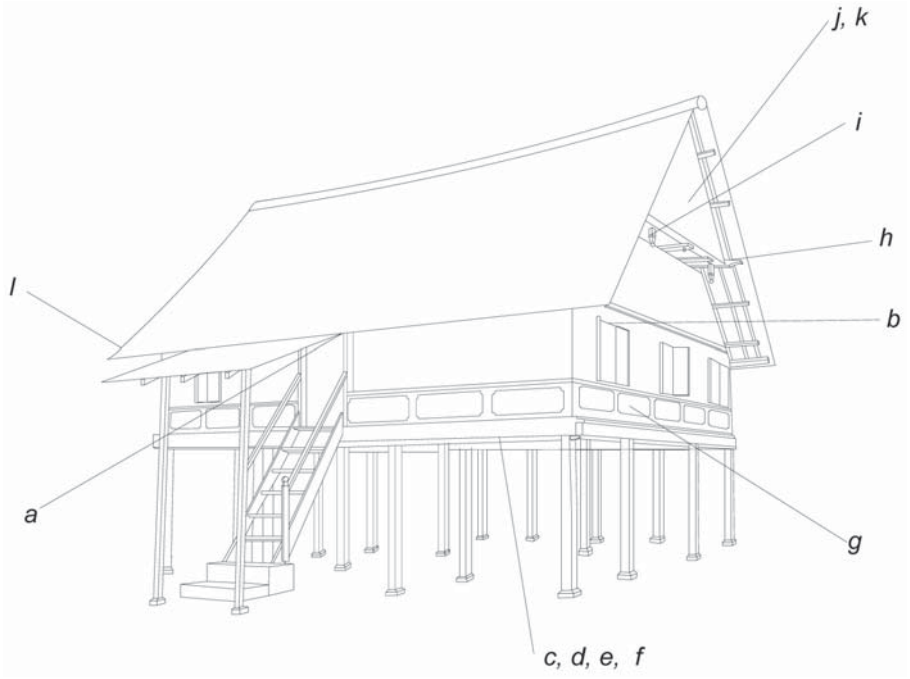


Fig. 9: Diagram showing the location of decorative elements in Kutai Asli Tiang 16-House Type

The decorative components are the following:

a. *Kepala Pintu*
b. *Kepala Tingkap*
c. *Alas Bendul,*
d. *Bendul,*
e. *Papan Cantik,*
f. *Papan Lantai*
g. *Papan Kembung*
h. *Papan Sendeng*
i. *Lebah Bergantung*
j. *Tebar Layar*
k. *Tunjuk Langit*
l. *Papan Kening or Papan Bator*

The design motifs were taken or imitated from Nature but evolved in the various artistic processes of imitation, denaturalization, stylization and abstraction, which were fundamental to the universal principles of Islamic decorations. The design motifs were taken or imitated from Nature but evolved in the various artistic processes of imitation, denaturalization, stylization and abstraction, which were fundamental to the universal principles of Islamic decorations.

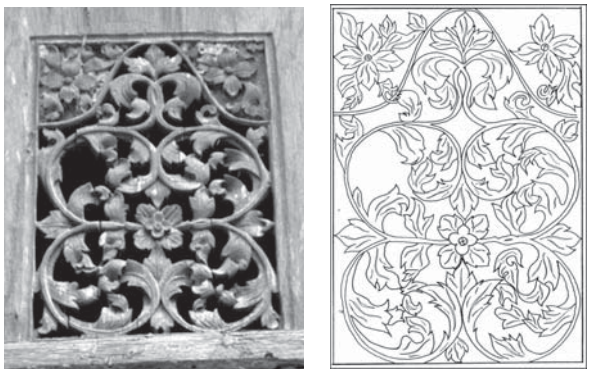


Fig. 10: The hand carved lubang mengintai (observation hole) decorative panel with stylised gunungan motif, the symmetrical composition of the awan larat, the placement of the central flower punca and the crowning bud motif at the summit (House of Tok Se Indera Bongsu, Bota Kiri)

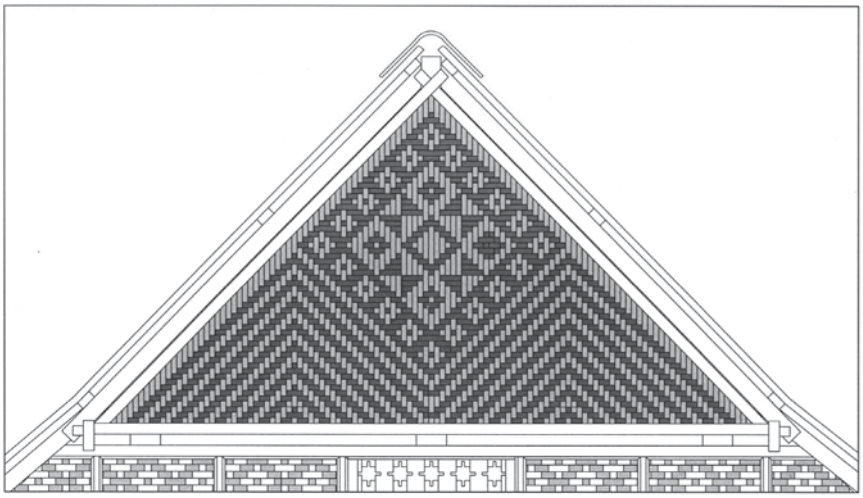


Fig. 11: The thatched bamboo roof gable wall showing the top placement of the Sun Motif that was surrounded by 20-units of Star Motif and the ensuing radiating rays or "waves" of the stylised Gunungan Motif (House of Kulob Samah, Bendang Kering).

Summary:

The establishment of the "architectural definition" or "house components inventory" of the *Kutai Asli Tiang* 12 (KAT 12) and the *Kutai Asli Tiang 16* (KAT 16) through "house form, components and decorations" formed the "knowledge foundations" for future *kutai* house restoration and conservation programs.

2. Locations of KAT-12 and KAT-16 house samples measured.

Kutai houses were found on the banks of Perak River and its tributaries, with the majority of the houses found in the administrative district of Kuala Kangsar and Central Perak. The following map (Fig. 12) shows the village locations of the 40 documented / measured *Kutai Asli* houses along Perak River and its tributaries.

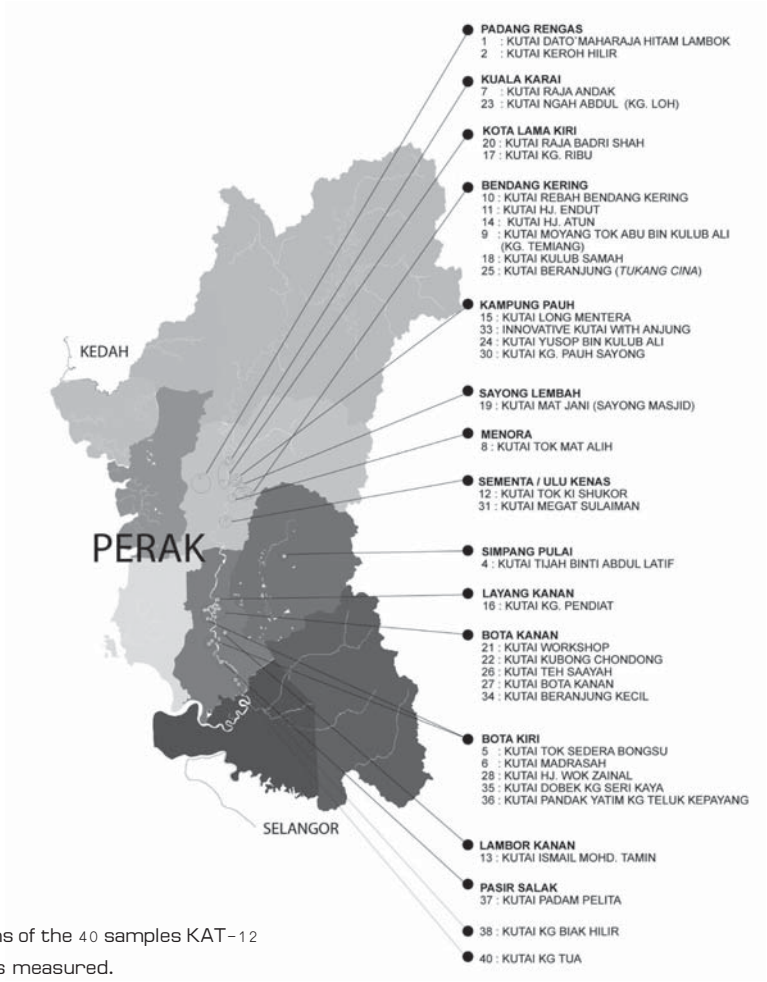


Fig. 12: The locations of the 40 samples KAT-12 and KAT-16 houses measured.

3. Categories of KAT-12 and KAT-16 house samples measured.

The documentation of the *Kutai Asli* house types in 2004 reveal excess of habitable houses that were left abandoned in almost all the villages along the banks of Perak River and its tributaries surveyed. House surplus is a phenomenon that became a tradition in Perak villages since the commencement of the Perak Sultanate in the mid 16th Century. Some of the current abandoned houses were in good habitable state while others were in decayed condition. It was also found that some of the habitable houses were in deplorable state, due to poverty, with rotting house structures and components due to badly leaking roofs.

Existing *Kutai Asli* houses along banks of the Perak River and its tributaries could be categorized as follows:

Category 1: *Kutai* house that is rotting, dilapidated and dismantled.
Category 2: *Kutai* house decaying at its original state and unoccupied / abandoned.
Category 3: *Kutai* house decaying at its original state and currently occupied.
Category 4: Habitable *Kutai* house at its original state and unoccupied / abandoned.
Category 5: *Kutai* house at its original state and currently occupied.
Category 6: *Kutai* house renovated and extended with the *Anjung, Beranda, Selang* and *Dapur* Components, and currently occupied.

Status 1: Kutai house that is rotting, dilapidated and dismantled





Status 2: Kutai house decaying at its original state and unoccupied / abandoned.



Kampung Pauh, Sayong (1890's)



Kampung Bandar (1890's)

Status 3: Kutai house decaying at its original state and currently occupied.



Kampung Pauh, Sayong (1900's)



Kampung Keroh Hilir, Pdg. Rengas (1820's)

Status 4: Habitable Kutai house at its original state and unoccupied / abandoned



Kuala Kenas, K. Kangsar (1880's)



Pendiat, Bota Kanan (1900's)

Status 5: Kutai house at its original state and currently occupied.



Kg. Sg. Raya, Simpang Pulai (1850's)



Bendang Kering, Sayong (1890's)

Status 6: Kutai house renovated and extended with the Anjung, Beranda, Selang and Dapur Components / currently occupied.



Kampung Buaya, Padang Rengas (1820's)



Bota Kanan (Circa 1900's).

4. Kutai House Categories by Regional Districts of Perak and Estimated House Units.

A total of 80 *Kutai* houses were identified during the research, of which 40 house samples were fully documented and measured. The following Table 1 shows the estimated *Kutai* houses of both the KAT-12 and KAT-16 house types, together with the variations of the evolution of the KAT-16 house type.

The estimated total 409 *Kutai* houses of the above 6 categories were located in the various village districts of Kuala Kangsar, Padang Rengas, Bota Kiri, Bota Kanan, Lambor, Parit, Tanjung Belanja, Pasir Salak and Bandar. Of the estimated total 409

existing *Kutai* houses, 48 are rotting and dilapidated. Of the 64 original houses that were in decay and abandoned, some needs a considerable cost of money for restoration, while other are beyond salvation. An estimated 60 units of Kutai Asli houses that were decaying and occupied could be restored without a considerable cost.

House Category	Kuala Kangsar/ Padang Rengas	Bota Kiri / Bota Kanan / Lambor	Parit/ Tanjung Belanja	Pasir Salak /Bandar Baru	Total House Units
Rotting /dilapidated	12	18	12	6	**48**
Decaying Original / Abandoned	16	25	18	5	**64**
Decaying Original / Occupied	15	27	17	1	**60**
Habitable Original House / Abandoned	18	28	21	6	**73**
Habitable Original House / Occupied	23	34	19	5	**81**
Renovated and Extended / Occupied	25	40	23	5	**83**

Table 1: Kutai House Categories by Regional Districts of Perak and its Estimated House Units

5. Kutai House Categories and the Proposed Action Plan for ongoing conservation and restoration.

Once the various *Kutai* house categories are established, proposed action plans at the level of “immediate”, “medium” and “long term” measures could be executed. These measures are necessary for the purpose of ongoing conservation and restoration works (Refer to Table 2). The most immediate action plan is to precisely locate and documents all the *Kutai* houses and its various categories.

Next is to execute the restoration on the 60 units of the Original *Kutai* houses in the category of Decaying Original that were currently occupied, where in many cases are the restoration of the roof and wall components only. Due to poverty, the occupants were financially unable to restore and maintain the original conditions of the house.

For the estimated total of 73 abandoned but habitable *Kutai Asli* houses of the original condition, the relevant authorities should take steps to purchase the houses and relocate them else where for the purpose of heritage and tourism.

Heritage Grants or assistance from the Poverty Eradication Scheme must be immediately disbursed to assist with the restorations of the ageing and occupied houses. This strategy would benefit the total 224 (60 + 81 + 83) currently occupied *Kutai* houses.

House Category	Immediate	Medium Term	Long Term	Benefits	Others
Rotting / dilapidated (48)	Location Inventory / Documentation Measurements	Salvage house components	Adding Literature to *Kutai* houses	Data for complete restoration works.	
Decaying Original / Abandoned (64)	Location Inventory / Documentation Measurements	Salvage house components or restore entire house	Adding Literature to *Kutai* houses	Data for complete restoration works.	
Decaying Original House / Occupied (60)	Location Inventory / Documentation Measurements	Restoration	Restoration / Extension	Habitation / Tourism	.
Habitable Original House / Abandoned (73)	Location Inventory / Documentation Measurements	Restoration	Restoration / Extension	Habitation / Tourism	**Purchase, Dismantle and relocate**

House Category	Immediate	Medium Term	Long Term	Benefits	Others
Habitable Original House / Occupied (81)	Location Inventory / Documentation Measurements	Restoration / Extension	Restoration / Extension	Habitation / Tourism	
Renovated/ Extended / Occupied (83)	Location Inventory / Documentation Measurements	Restoration / Extension	Restoration / Extension	Habitation	

Table 2: Kutai House Categories and the Proposed Action Plan.

5.1 Examples of Possible Action Plans per house units by precise Inventory.

The restoration of the 224 units of habitable and occupied houses previously mentioned would also require precise inventories on the nature of restoration work required, and the various house components that requires maintenance or replacements. The financial requirements and funding for the restoration of each house unit could then be estimated.

The following Table 3 shows examples of Possible Action Plans for restoration and conservation per house units by precise house component inventories.

No.	House type	Owner / Location	Date Built/ Circa	Original House condition	Current Occupation Status	Status of Conservation works needed	Works Required	Cost Estimate
1	KAT 12	Itam Bahak/ Kota Lama Kiri,K. Kangsar	1819	Fair	Not Occupied, Neglected	Urgent minor Maintenance	*Attap* Roof replacement	
2	KAT 12	Kulub Samah / Kg. Sayong, K Kangsar	1880's	Good	Occupied One Lady owner	Urgent Minor Maintenance	Maintenance of Side Walls (*kelerai*)	
3	KAT 12	Ngah Ngin / Kg. Kroh Hilir, Padang Rengas	1820's	Good	Occupied by Family of 4	Urgent Minor Maintenance	Gable walls (Sawn timber)	

No.	House type	Owner / Location	Date Built/ Circa	Original House condition	Current Occupation Status	Status of Conservation works needed	Works Required	Cost Estimate
4	KAT 16	Dato Maharaja Hitam Lambok / Padang Rengas	1820's	Fair	Occupied by Family of 2 + 6	Urgent Major Maintenance	Side walls Roof Structure	
5	KAT 16	Tijah bt. Abdul Latib, Spg. Pulai	1850's	Very Good	Occupied by Family of 4	Minor Maintenance	*Attap* roof replacement	
6	KAT 16	Tok Seindera Bongsu (Kutai Angkat UiTM) Bota Kiri	1860's	Good	Vacant	Urgent Major Maintenance	Panel wall / roof replacement	
7	KAT 16	Ex-Madrasah / Surau	Mid- 1860's	Very Good	Vacant	Urgent Minor Maintenance	House cleaning	
8	KAT 16	Tok Mat Alih, Kg. Menora, K. Kangsar	1890's	Good	Occupied by Family of 6	Urgent Minor Maintenance	Roof Gable wall Replacement	
9	KAT 16	Moyang of Ku-lob Ali	1880's	Good	Occupied by lone elderly	Urgent Minor Maintenance	Walls / Roof / Floor finishes	
10	KAT 16	Pandak Endut, Bdg. Kering, Sayong.	1880's	Very Good	Vacant	Minor Mainte-nance	Roof / Wall finishes	
11	KAT 16	Panjang Ismail, Sayong	1880's	Fair	Occupied by Family of 5	Urgent Major Maintenance	Roof/Wall/ Floor Finishes	
12	KAT 16	Tok Ki Shukor,Kuala Kenas.	1880's	Very Good	Vacant	Minor Mainte-nence	House Clea-ning/ Roof repairs.	
13	KAT 16	Ismail Mohd, Lambor Kanan.	1880's	Very Good	Occupied by Family of 6	Minor Mainte-nence.	Minor repairs	
14	KAT 16	Hajiatun, Bdg. Kering, Sayong.	1890's	Fair	Vacant	Urgent Major Mainte-nence	Roof/Wall/ Floor Finishes	
15	KAT 16	Long Mantera, Sayong.	1890's	Fair	Abandoned	Urgent Major Repairs	Roof/Wall/ Floor Finishes	
16	KAT 16	Haji Yunus, Sayong.	1890's	Fair	Vacant	Urgent Minor Repairs	Roof/Wall/ Floor Finishes	

No.	House type	Owner / Location	Date Built/ Circa	Original House condition	Current Occupation Status	Status of Conservation works needed	Works Required	Cost Estimate
17	KAT 16	Uda Noh, Kg. Pendiat, Bota Kanan.	1900's	Very Good	Vacant	Minor Maintenence	House Cleaning	
18	KAT 16	Mat Jani, Sayong	1900's	Good	Occupied by elderly lady	Urgent Minor Repairs	Roof/ Floor/ Wall Finishes.	

Table 3: Possible Action Plans for restoration and conservation per house units by precise inventories.

The replacement of house components using local building materials such as *attap* roof, thatched timber walls (*kelerai*) and timber panel walls creates jobs and the revival of local house building crafts.

6. Conclusion and Recommendations.

Uncoordinated attempts by individual organization or authority to conserve *Kutai Asli* or any other Malay traditional houses could prove to be a futile attempt and wastage of resources. For instance, the rehabilitated Kutai Itam Bahak (of the KAT-12 type) sponsored by the Badan Warisan Malaysia in the late 1980's at Kota Lama Kiri, Kuala Kangsar started with a noble intention and a considerable sum of money, but is currently left unused, poorly maintained, and faced with the perils of a leaking *attap* roof and further decay.

Practical and cost effective attempts in preserving the rare and precious heritage of the *Kutai Asli* houses require sincere and **serious collaborations with the relevant authorities.** For instance, **the Local District Offices, the Poverty Eradication Programs, the Housing Ministry and the State Museum, local Universities** should all collaborate to undertake serious survey and inventory of abandoned and habitable houses in each of the Perak Malay villages. Concurrently, a housing rehabilitation grant that provides a modest sum would be duly dispensed to replace the presently leaking *attap* or zinc roofing that would have protected and saved the entire habitable house structure and components from gradual and total decay.

The simplistic solution of the RM 25,000-priced modern **low cost terraced house** unit of heat absorbing brick walls and asbestos roofs in the quaint traditional

village setting could be totally irrelevant. It is especially so when there are **ample, vacant and habitable** *Kutai Asli* and *Perak Bumbung Lima* houses that **simply needed a new roof** at the cost of RM 500.

Thus, a **serious effort of inventory** or listing the exact categories and units of the Kutai houses in all the villages along the banks of Perak River and its tributaries must be urgently undertaken. **A central database system** must then be established, accessible to the public and to all the relevant parties concerned.

Whatever additional infrastructure cost incurred on the village maintenance is probably the need for modern and practical sanitary system that would be attached to each of the surviving and habitable houses. However, the choice selection of any **modern sanitary system or public services** should always be in harmony with the traditional buildings and the cultural traditions of the particular village setting. Such carefully preserved traditional villages with modern facilities were successful tourist attractions in Europe and other parts of the world.

The Malaysian **"village-home stay" concept** of tourist accommodation in traditional Malay houses and villages is a noble idea and was successfully implemented in some Malaysian villages. A **success story** is one of **Pura Tanjung Sabtu,** a unique traditional Terengganu Malay tourist residential complex, **comprising of eleven 150-200 years old Terengganu timber houses,** reassemble, preserved and restored at Tanjung Sabtu village.

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