

SUSTAINABILITY OF MULTI-GENERATIONS DWELLING: CONDITION SURVEY ON OLD MALAY TRADITIONAL HOUSES IN KUALA KANGSAR, PERAK

By

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AIM & OBJECTIVES OF RESEARCH

AIM OF RESEARCH

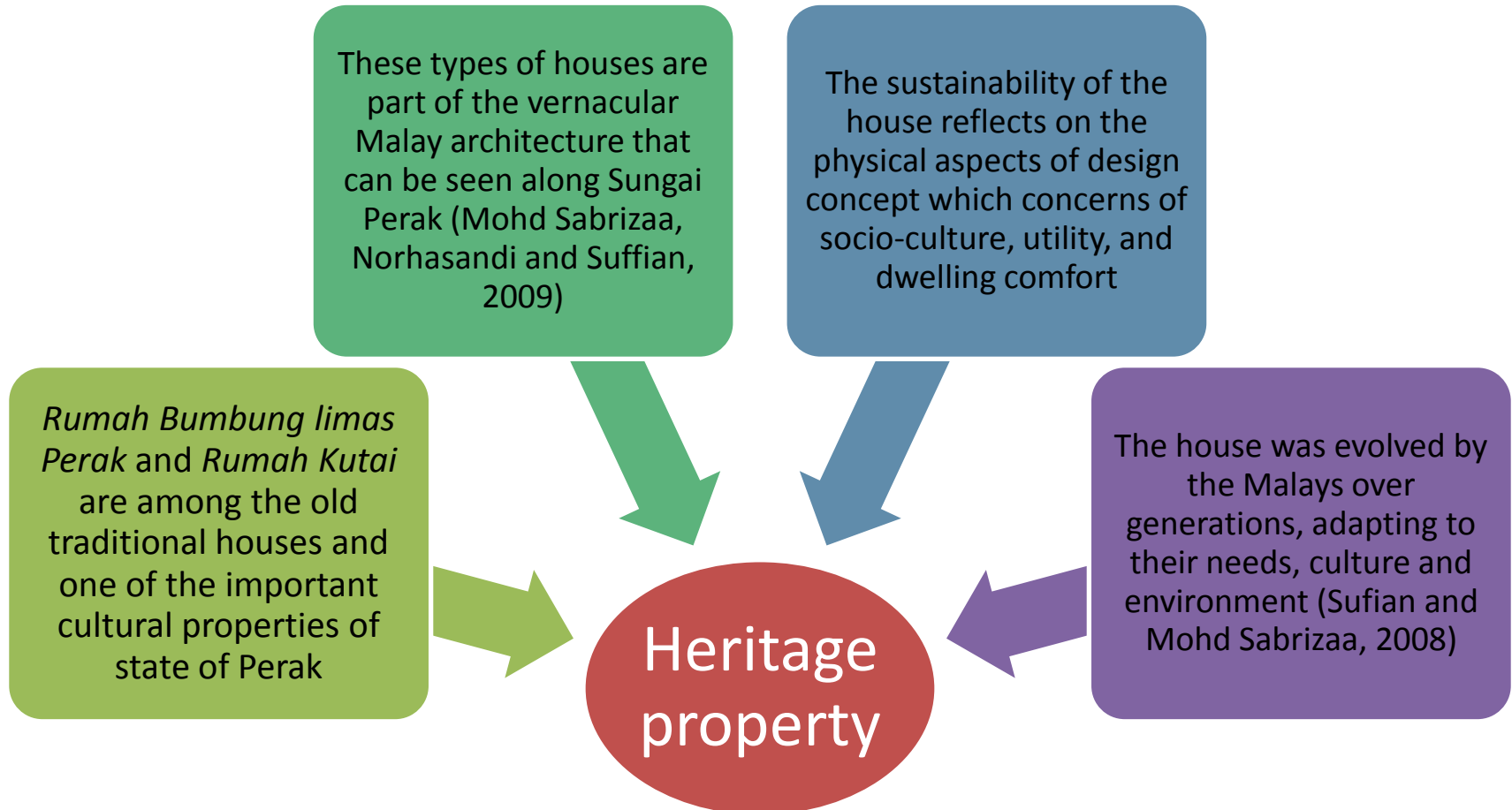
The research aim of this study is to investigate the condition of the physical components and spatial elements of the houses that have gone through renovation to accommodate universal needs of their residents.

OBJECTIVES OF RESEARCH

1. To identify the condition status of the components found in the selected Malay traditional houses
2. To explore a suitable methodology to collect data and examine the level of heritage significance for the district of Kuala Kangsar

1.0 INTRODUCTION

Malay traditional house is a **valuable heritage property** as it demonstrates the **historical and cultural values** apart from its distinctive identity of **vernacular architecture**



1.0 INTRODUCTION

1. Many **existing old traditional houses** in Malaysia are **still occupied by dwellers** although a few of them are not in good condition
2. Many **owners or residents of old traditional houses** still **maintain the building for original use and function** while safe-keeping their vernacular characters.
3. The **design of the old Malay houses especially on its physical components and spatial elements is not sustainable especially for elderly residents** who have limitations of movement due to physical disabilities

Renovation

- The process of returning a property to a state of utility, through repair or alteration which make possible an efficient contemporary use while preserving the features of heritage buildings

Restoration

- Refers to the revival of the original concept or fabric of the building to its original or earlier known state (Amir and Nur Dalilah, 2012)

2.0 MALAY TRADITIONAL HOUSES OF PERAK

Rumah kutai and *rumah bumbung Perak* are the symbols of vernacular architecture of Perak state and widespread forms in the twentieth century (Mohd. Sabrizaa and Sufian, 2008)

The timber houses showcase wood work components that embellish its roof eaves and walls section- become a central feature that is imbued with the natural sense of taste, style and fine craftsmanship

The art and architecture of the Malay traditional houses represent the most significant achievement of the civilization which is part of a legacy of Malaysian craftsmanship (Zambri, 1997).

Among the major concerns were on preservation and issues on socio-cultural and architectural heritage (e.g. Arazi et al. (2011); Harding (2003), and re-adaptation of old house (e.g. Nur Hidayatul jamilah, (2012); Amir and Nur Dalilah (2012).

Malay
Traditional
Houses of
Perak

3.0 METHODOLOGY

1. Kuala Kangsar was selected as a case study because the district is one of the districts rich which cultural components and values yet to be explored (Draft Rancangan Tempatan Daerah Kuala Kangsar, 2011).

2. This study involved 2 main stages of qualitative data collection:

- Documentation process and recording the data (historical and architectural)
- Personal interview and building condition survey and investigation.

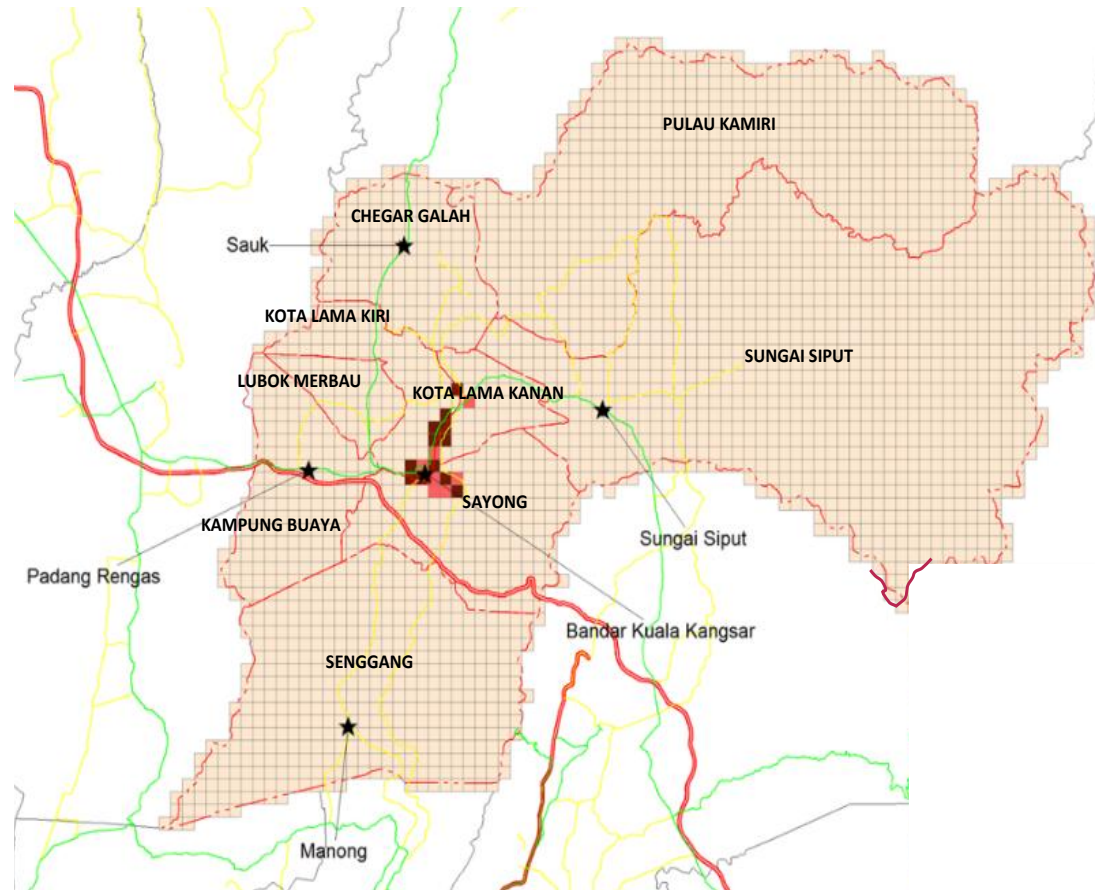


Figure 1: Kuala Kangsar, Perak with 9 sub- district

3.1 DOCUMENTATION OF THE HOUSES

1. **Documentation is a stage in which the current condition of a particular building needs to be recorded-** available evidences about the building were assembled prior to building condition survey.
2. This method was applied in this study to fulfil the understanding of the selected houses including its **architecture** and **workmanship**, its **biography** and **existing condition** of its building materials.
3. This was achieved by conducting literature reviews, site visit and interview with an expert.

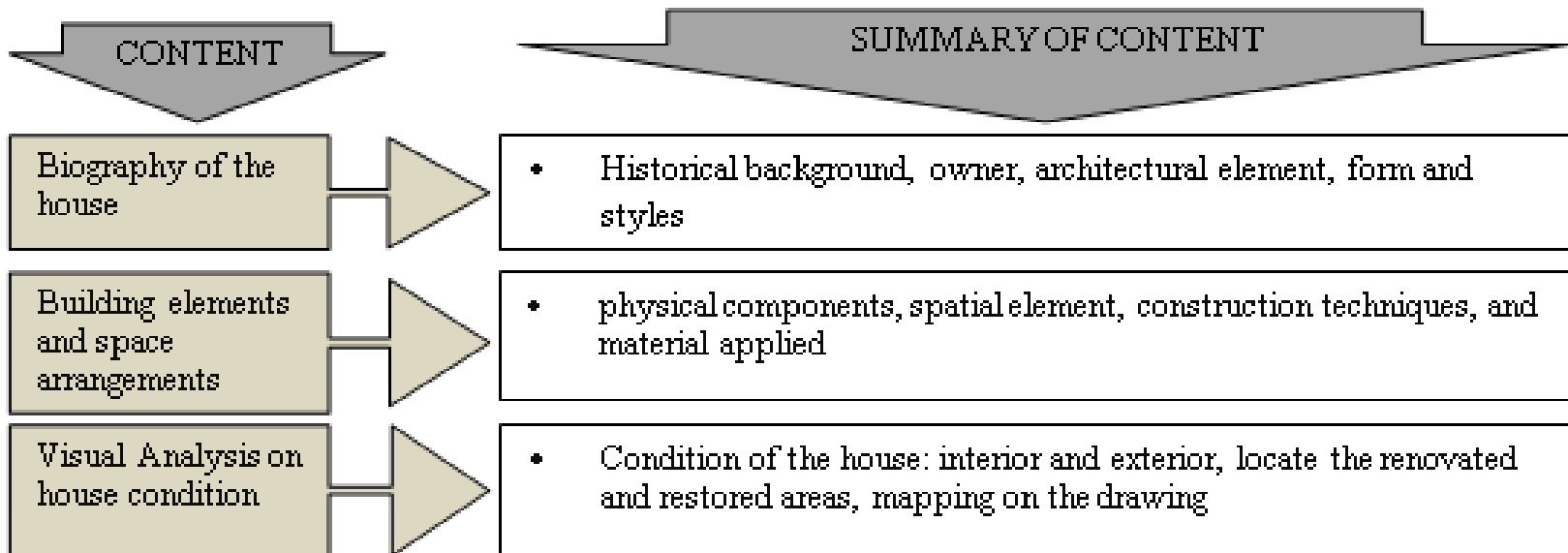


Figure 2: Summary of the content of the documentation of selected houses

3.1 DOCUMENTATION OF THE HOUSES

1. A total of 15 traditional houses found in Kuala Kangsar was selected for condition survey
2. The houses are mostly over 70 years old and they are categorized into *rumah kutai* and *rumah bumbung Perak*.
3. 4 units of *rumah kutai* and 11 units of *rumah bumbung Perak* were selected for the survey.
4. Many of the houses were neglected and demolished due to wood deterioration and decay leading to structural degradation.



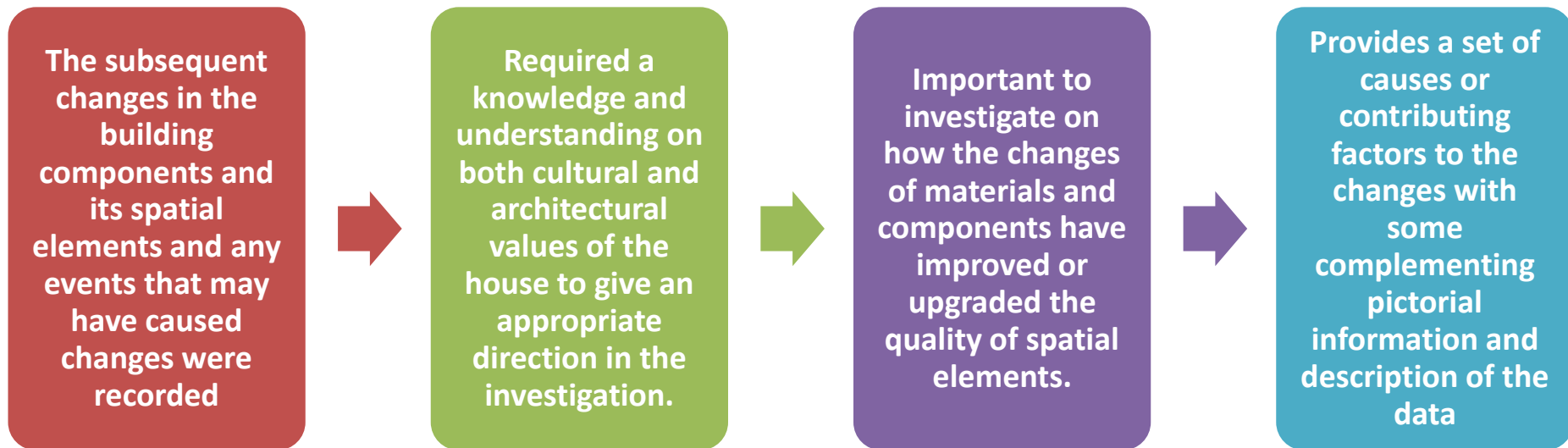
Type of House	Basic Characteristics of the house	Number of houses
<p><i>Rumah kutai</i> (Long-roof house)</p> 	<ul style="list-style-type: none"> • Single-ridged roof form and the house is elevated on stilts. The main structure is supported with 12 or 16 pillars. • It is characterized by a long and simple gable roof and gable end with decorative panels are usually found at the both ends. • The oldest and commonest house form and the simplest form (over a hundred years old) • Small-scale of basic living spaces like rumah ibu, rumah dapur and serambi. • Two staircase/steps, each is located at the front and rear sides of the house • It has a sophisticated addition system which allows extensions and additions of spaces 	4 units
<p><i>Rumah Bumbung Perak</i> (Five-ridged roof house)</p> 	<ul style="list-style-type: none"> • It is characterized by a gambrel roof and the house is elevated on stilts. • Also called as <i>bumbung potongan Belanda</i>. • Basic living spaces like rumah ibu, rumah dapur and serambi. • Two staircase/steps, each is located at the front and rear sides of the house • Influenced by colonial Dutch and British house form. • The use of zinc and other modern roofing materials also allows for more elaborate roof construction. 	8 units

Table 1: Two variations of the selected Perak traditional houses with their basic characteristics

3.2 CONDITION SURVEY

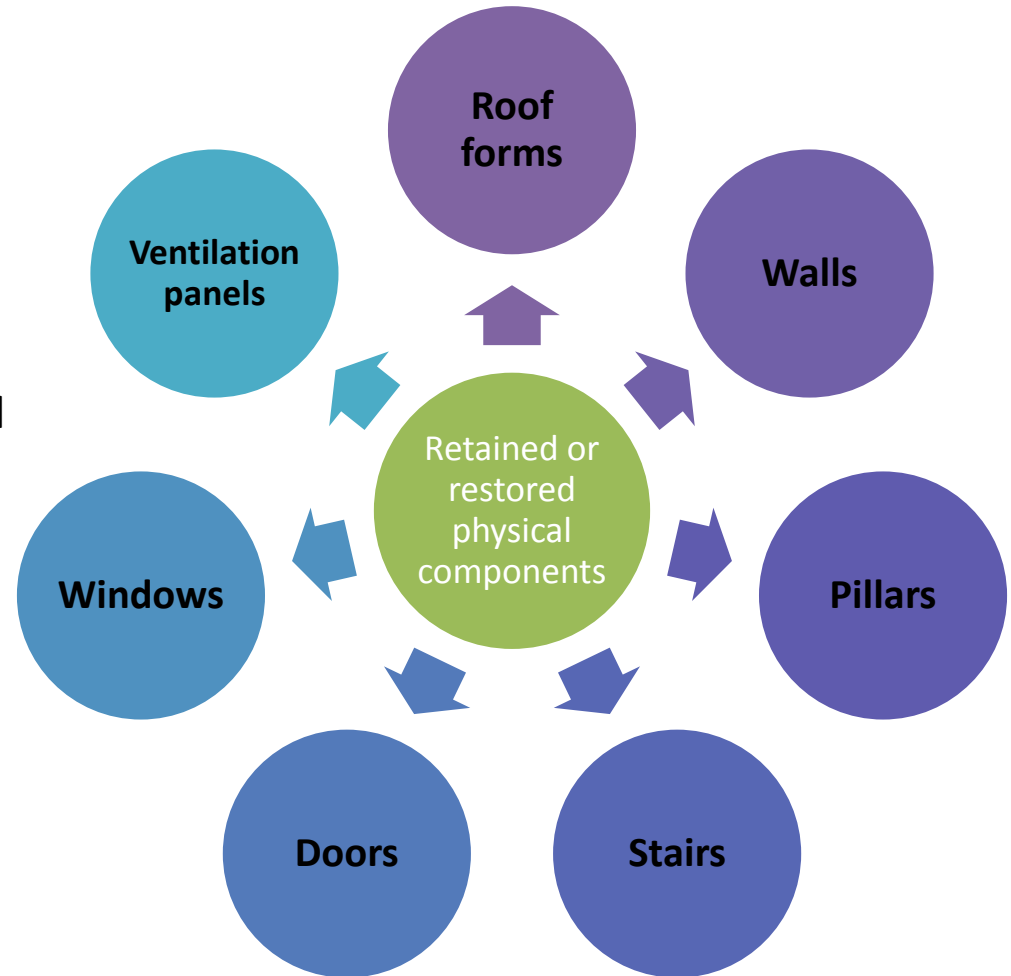
1. The condition survey describes the houses in its present state by identification of the nature and extent of changes made to the houses
2. This process involved:
 - Mapping the visible changes on the house fabric due to renovation
 - Photographs of the house were captured by using an appropriate high quality camera to record the changes



4.0 RESULTS AND FINDINGS

4.1 CONDITION STATUS OF COMPONENTS AND PHYSICAL COMPONENTS

1. Based on the condition survey, **the uniqueness of construction techniques applied by Malay builder from past generation is still visible at the interior and exterior fabrics of the selected houses**
2. The retained and restored components of the house are categorized as **structural elements and non-structural elements**



4.0 RESULTS AND FINDINGS

4.1 CONDITION STATUS OF COMPONENTS AND PHYSICAL COMPONENTS

- The results also show that many houses have experienced significant changes in term of its material, especially on the roof and wall materials.

Table 2: Summary of the condition status of spatial elements and physical components

House Components	SELECTED HOUSES														
	House 1	House 2	House 3	House 4	House 5	House 6	House 7	House 8	House 9	House 10	House 11	House 12	House 13	House 14	House 15
Rumah ibu	R	R	R	R	R	R	R	R	R	C	R	R	R	C	R
Rumah Dapur	D	R	C	C	C	R	C	R	C	D	R	C	C	D	C
Serambi/anjung	D	R	D	D	D	R	2	C	R	C	D	C	R	D	R
Selang	-	R	-	D	D	R	D	R	D	-	R	D	R	-	R
Roof	R	C	R	C	C	C	C	R	C	C	R	C	C	R	C
Walls	R	R	C	R	R	R	R	C	R	C	R	R	R	C	C
Pillars	R	C	R	R	R	R	R	R	R	R	R	R	R	R	R
Floors	R	R	C	R	R	R	C	C	R	R	R	R	R	C	R
Doors	R	R	C	C	R	R	R	R	R	C	R	R	R	C	R
Windows	R	R	C	C	R	R	R	R	R	C	R	R	R	C	R
Stairs/steps	D	C	D	R	D	R	D	R	R	D	R	C	R	D	R
Ventilation panels	R	C	R	D	R	R	R	R	R	C	R	R	R	C	R
Facia board	R	R	R	D	R	R	D	R	R	C	C	R	R	C	R

Condition status: Retained/restored (R), changed (C) and demolished (D)

4.0 RESULTS AND FINDINGS

4.1 CONDITION STATUS OF COMPONENTS AND PHYSICAL COMPONENTS

1. **Spatial element (*Rumah ibu*)** - retained and restored in most of the houses (13 out of 15 houses)
2. ***Serambi*** - as a focal point for the entrance and is functioned as a space to greet or welcome house guests was retained in 5 houses
3. ***Selang*** is a small space that connects the *rumah ibu* with *rumah dapur*-demolished and added with half concrete space which is located on the ground level.
4. ***Rumah dapur*** - changed into new look because already decay and nearly damaged and new kitchen is located on the ground level (easily accessible by elderly without a need to climb a stair)



H2 is retained because it is the largest area in the house where most activities including religious ceremonies and social gathering can be conducted here



A new kitchen was added directly under *Rumah dapur* of H6 the new kitchen is located on the ground level thus easily accessible by elderly without a need to climb a stair. However, most physical components and spatial elements are retained in its original aesthetic characteristics and architectural identity

4.0 RESULTS AND FINDINGS

4.2 THE NATURE AND EXTENT OF CHANGES MADE TO THE HOUSE FOR DISABLED REQUIREMENTS

1. Changes were done for three main reasons: 1) **structural stability**, 2) **safety**, and 3) **comfort living**.



Major changes done on Rumah Kutai (H3)

- Based on the interview with the resident of H3 who is the third generation descendant, the house has been inherited from the second owner for more than 5 years
- The house was renovated by providing living spaces at ground level to accommodate the need of old folks who has physical disability
- Another reason is related to structural stability and safety since the bricks used as the main material is more durable. Also it is lower maintenance as compared to timber materials.



Major Changes on Rumah Bumbung Limas (H9)

- H9 explained that the ground level spaces are required for women to give child birth and during their confinement period. The new spaces are living area, kitchen, and bed room which were added at the ground level whilst retaining *rumah ibu* in its original form at the upper level
- The new spaces become essential which are easily accessible by the disabled users. Hence, the main reason of the renovation are to provide comfort living for the disabled old folk who are entitled to the same right as all other residents of the house

4.0 RESULTS AND FINDINGS

4.2 THE NATURE AND EXTENT OF CHANGES MADE TO THE HOUSE FOR DISABLED REQUIREMENTS

Upgrading spaces of Malay traditional house

- The selected houses were **upgraded by adding new spaces on the ground level**- sophisticated system and flexibility which allows the addition of new spaces or further alteration on its structure

Residents of different generations

- The Malay traditional house was **transmitted from one generation of residents to another requires constant protection in sustaining its authenticity of the architectural identity** and its traditional craftsmanship

Distinctive features and universal design

- Sense of awareness on the standard of application, **disabled requirements and user friendly space arrangement** are practiced especially for the old folks with limitation of physical use and pregnant women

5.0 CONCLUSION & RECOMMENDATION

1. Detail study on the selected Malay traditional houses reveals that various physical components including roof forms, walls, pillars, stairs, doors, windows and ventilation panels remain intact at the interior and exterior fabrics of the houses.
2. Majority of the selected houses were upgraded by adding new spaces including kitchen, living area and bedrooms on the ground level.
3. The massive changes and elimination of traditional components from the present setting of the traditional houses would lead to a massive loss for the Malay society of Kuala Kangsar in particular and for Malaysia in general
4. The changes were made to sustain its existence and for three main reasons, namely structural stability, safety, and comfort living especially for the disabled residents
5. The findings would assist the local community to implement further management plan for preservation of the traditional houses which include renovation, restoration and replacement, whilst ensuring the continuous survival of the houses that reflect heritage value as well as the social value of the multi-generation residents.



THANK YOU