Criteria and Determinants for Assessing the Sustainability of Conservation Management and Process of Malay Vernacular House

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ABSTRACT
The need for new criteria and determinants for the assessment of conservation management has been identified as a priority by many international organisations. The purpose of this working paper is to identify the criteria for conservation management and process of Malay Vernacular House. The trends in designing and construction methods of modern home in Malaysia does not make Malay Vernacular House as the main option. During the time Malaysia was colonised, the main thing to be considered in designing of building is the appropriateness of the current tropical climate which is practiced by the Malay community. The presence of modern building materials and methods has made the originality of Malay Vernacular House are now been challenged and ignored. This paper reviews the management practice and process of the types of Malay vernacular house in the Northern Peninsular Malaysia namely Pulau Pinang, Kedah, Perlis, Perak, Kelantan and Terengganu. This article will also discuss on the consideration of determining site selection and other factors that is often expressed as the comfort level determinants of Malay vernacular house for a modern community. The study are based on information or evidence obtained from secondary sources such as reports, books, monographs and measured drawings that has been documented by reliable sources. The documentation of these information is very important as an excellent model for today's designers in understanding climatic and environmental design, building systems, and design flexibility.

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INTRODUCTION

The traditional Malay house, which is an autonomous housing process using self-help and mutual-help approaches, can throw some light on the development of a modern autonomous housing model which is based on the needs and aspirations of its users, rather than being imposed by others on the users [1]. A study of the history, role and experience of the Malay house can be of great value to people and policy-makers in other countries [2]. This is because such a study can reveal the value of traditional house forms, the relevance of traditional housing as a vital component of national housing policy, as well as the contemporary problems faced by users, builders and advocates of such traditional housing. Hence, to prolong a historic timber building, it is important to understand the techniques available and best practice with the principles of conservation management in securing for optimal conservation works.

A traditional Malay house is built by local Malay craftsmen who involves in design and construct the entire house by using local timber as building material. This traditional Malay house serves the housing needs of the majority of people living in rural areas of Malaysia. Nowadays, most of the modern Malay houses are built with modern building materials such as concrete, masonry and others [3]. This will led to the traditional Malay house building skills to become fast dying and on the verge of extinct. Thus, it is extremely important to document and conserve the dying profession of vernacular Malay house building in various aspects such as; the management, process, skills and other knowledge of building vernacular Malay houses in different regions in Malaysia before it’s too late.

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This article reviews the management practice and process of Malay vernacular house and the types of vernacular Malay house in the Northern Peninsular Malaysia namely Pulau Pinang, Kedah, Perlis, Perak, Kelantan and Terengganu. Generally, the traditional Malay house manifests the creative and aesthetic skills of the Malays as it is designed and built by local villagers themselves. The need for new criteria and determinants for the assessment of conservation management has been identified as a priority by many international organisations. The purpose of this working paper is to identify the criteria for conservation management and process of Malay Vernacular House. This article will also discuss on the consideration of determining site selection and other factors that is often expressed as the comfort level determinants of Malay vernacular house for a modern community. The study are based on information or evidence obtained from secondary sources such as reports, books, monographs and measured drawings that has been documented by reliable sources. The documentation of these information is very important as an excellent model for today's designers in understanding climatic and environmental design, building systems, and design flexibility. [4]& [5] found that the very peculiar criteria and determinants for the assessment of conservation management are the design and lay out, concept and technology; climatic design; construction process; project management; craftsmanship, tools and equipment.

**Basic Design and layout:**

The traditional Malay house is a timber house raised on stilts. It is basically a post-and-lintel structure with wooden or bamboo walls and a thatched roof. Windows are plentiful, lining the walls and providing good ventilation and views for the house. This quality of openness is also reflected by the large open interior spaces with minimal partitions. Common spaces in Traditional Malay Houses are Anjung, Serambi, RumahIbu, Selang and Dapur[6].

**Construction concept and technology:**

Basically, most of the Malay Vernacular house must consist of Plan is uniquely design to suit local need; Modular floor plan system, eg 10’x10’ or 12’x12’; Pitch roof; Double pitch roof; AtapNipah; Wide eve; Flexible Louvres window; Strong timber join system with no nails used. However, each state in Malaysia has their own type of traditional house. In Peninsular Malaysia, the traditional houses are basically classified by their roof shapes such as bambungpanjang, bambungperak, bambung lima and bambunglimas. Most of the Malay Vernacular House utilise the external environment that are the main component in building a house [7].

**Climatic Design of the Traditional Malay House:**

The main characteristics of a Malay Vernacular house is designed to 1) allow adequate ventilation for cooling and reduction of humidity; 2) use building materials with low thermal capacity so that little heat is transmitted into the house; 3) control direct solar radiation; 4) control glare from the open skies and surroundings; 5) protect against rain; and 6) ensure adequate natural vegetation in the surroundings to provide for a cooler micro-climate.

In order to achieve this standard the design is almost typical [8] by: (1) raised-on-stilts lightweight construction (with open under floor space) using low thermal conductivity materials such as timber and thatch; (2) having full-height operable windows, upper ventilation grilles and minimal internal partitions for adequate cross ventilation; (3) having large roof eaves and low walls to control direct solar radiation and protect against rain; and (4) arranged sparsely with adequate natural vegetation in the surroundings for shade and a cooler microclimate.

**Construction Process:**

The process of constructing a Malay vernacular house is highly autonomous, largely controlled by the owner. Constructed by building traditional and the village carpenter, the owner-builder designs a house that is uniquely suited to the family's socioeconomic and cultural situation. Different regions in Malaysia have their own distinctive style of vernacular architecture [9]. The materials used in traditional Malay houses are usually those found locally in the forest. Woods are collected and it was one of the main job in the village. The basic building materials are usually timber or bamboo, in which timber usually became the main structures while the bamboo is used for the walls and thatched roof. These materials actually promote coolness in the house due to its low thermal capacity. As for the structure wise, Malay house uses the post and lintel structures. Below is a rough sketch of the basic construction of traditional Malay house. Usually, certain components are first made on the ground before assembling them on site.

**The Management of Traditional Malay House:**

There is no written plan in the construction of a traditional Malay house [10]. The house is not professionally designed but has evolved over a period of time using readily available local materials, which suited the local climatic and environmental conditions. The house is built by a carpenter who is usually given a
set of verbal requirement by the owner of the house [11]. The carpenter then precuts all the components required to make up the house. The carpenter also been assisted by several villages to assemble all the components which make up the framework.

At the construction stage, the owner can intervene to issuing any instruction or suggestion as owner needed, while the house is taking shape. To build the traditional Malay house, human body, such as foot and head was used as a basic concept in term of balancing a house design which represents as pillar, wall, floor and roof. There are various measures systems to build up a traditional Malay house such as fathom, cubit, span, finger and knock. That measurement usage is different between each house and it is referring to ‘rumahibu’ measurement. Tray usage is closely related with the space function as celebration space. By using tray as basic measurement system, number of guests could be loaded into that space can be organized during construction of a house.

Apart from tray, also found traditional Malay house which use ‘Nipah’ roof as basic measurement system. ‘Nipah’ roof production is uniform (about 5 foot) and the usage of those materials as basic measurement system could avoid cutting during the construction. Moreover, the material selection was the most important element in growing and transformable house application. Material selection is one of very crucial element because through the material selection, growing and transformable house flexibility can be decided [12].

The utmost important factor, is the skills and experience of the carpenter, which is a valuable intangible resource to ensure the project done successfully. One carpenter is assisted by 4 to 5 semi skill workers.

Craftsmanship, Tools, Equipment and Elements:

The general lack of appreciation of the traditional Malay house by the younger generation and the lack of rural labour are additional factors causing the erosion of the traditional Malay house. The carpenters, woodcarvers, attap weavers and other artisans involved in the building of the traditional Malay houses are a dying breed [13]. This trend is caused by the diminishing popularity of the houses, inappropriate legislation and the lack of interest among the young people in continuing in the trade.

The role of the carpentry team was to produce and to fabricate the building components comprising of three major types: floor, roof and wall. The floor structure is made up of posts, beams, planks and bracings. The posts are also part of the roof framework with structural members including beams, trusses, ridge beams, gables, and battens joined to them. And, finally, the wall structure comprised of frame, bracings and planks. All these components were fabricated from medium hardwood species, kapur (Dryobalanopsaromatica), which is one of the most common timber species for house building in Malaysia [14]. The carpentry workers are concerned with making parts straight, square and parallel. The principle of parallelism is basic in laying out and cutting the timber members (stock). The workers need to have two types of knowledge; property of timber and woodworking using cutting, driving boring and shaping tools. The former includes the knowledge of selecting timber boards with the least defects that is recognizing the defects including crooks, cups, checks, knots, twists, and bows.

A physical element is the smallest whole component that is recognised as an integral part of a house. In the Malaysia house, elements range from the structural frame is made up pf plinths, columns, beams and roof.

Summary:

The management and process of constructing a vernacular Malay house are complex and unique due to its depends on the experience, knowledge and skills of traditional timber architecture or a traditional Malay carpenter. For best conservation practice it is necessary to determine appropriate techniques available in protecting a cultural heritage. The importance of this housing solution is reflected in its ability to solve the housing problems of especially the poor in a manner that is most appropriate to their socio-economic and cultural needs. This people-centred approach to housing, without the intervention of the state, professionals, contractors and developers could be used as an important input into solving the massive housing problems of the poor in the Third World.

REFERENCES


