



UNIVERSITI PUTRA MALAYSIA

***LEARNING FROM SOUTH SUMATRAN INDIGENOUS TECHNOLOGY
FOR SUSTAINABLE HOUSING CONSTRUCTION***

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**DOCTOR OF PHILOSOPHY
UNIVERSITI PUTRA MALAYSIA**

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**By
ARI SISWANTO**

**Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia
in Fulfilment of the Requirements for the Degree of Doctor of Philosophy**

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Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Doctor of Philosophy

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December 2013

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Faculty: Design and Architecture

Nowadays, much local knowledge about South Sumatran traditional architecture is gradually disappearing because of the way of thinking and cultural changes in society. The introduction of new technology and building materials in the housing construction industry has made it possible for problems to be solved almost instantly. As a result, there has been a tendency to discard the traditional construction techniques that have been in use for centuries.. However, for generations, local communities have used such traditional indigenous building construction technology in traditional houses that were adapted to Nature and have withstood natural disasters. It would be an enormous lost for the community and country if such traditional skills, expertise and problem solving strategies inherent in indigenous building construction were to be discarded and be lost forever.

The objective of this research is to show that there can be many aspects of building construction that can be learned and developed from the indigenous technology of South Sumatran traditional architecture for sustainable housing construction

This research uses a qualitative approach for its data collection through multiple-case study. The three strategies of analysis implemented in this research emphasise more description, comparison, and evaluation. The method used in this study comprised interviews, observation and visual documentation. Objects under study amounted to 13 traditional houses located in two cities and four regencies in a province of South Sumatra. Traditional houses were chosen based on previous research, information and field work. In addition, the determination of a traditional house is based on its geographical location and architectural style. The 29 respondents comprised owners or occupants of the houses studied, local leaders, community leaders, local builders and experts.

Indigenous technology shows how site selection, house layout, structure and local materials of traditional houses have the ability to be environmentally friendly and able to withstand natural disasters for generations. Traditional houses are also very durable in the face of natural disasters such as landslides, floods and earthquakes.

Proper understanding and interpretation of indigenous technology of traditional architecture that adapts to the environment can provide better housing solutions. Indigenous technology of South Sumatra's traditional architecture can be interpreted as a concept for sustainable housing construction that is imbued with a sense of aesthetics, is environmentally friendly, utilizes logical technology, and in line with cultural and economic needs.

Keywords: traditional architecture, sustainable construction, indigenous technology.



Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

PEMBELAJARAN DARIPADA TEKNOLOGI TEMPATAN SUMATERA SELATAN UNTUK PEMBINAAN PERUMAHAN MAMPAN

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Pada masa kini, banyak pengetahuan tempatan mengenai seni bina tradisional Selatan Sumatera secara beransur-ansur hilang kerana cara berfikir dan perubahan budaya dalam masyarakat. Pengenalan teknologi dan bahan baru dalam industri pembinaan perumahan telah membolehkan masalah yang perlu diselesaikan hampir serta-merta. Hasilnya, terdapat kecenderungan untuk membuang teknik pembinaan tradisional yang telah digunakan selama berabad-abad. Walau bagaimanapun, generasi, masyarakat tempatan telah menggunakan teknologi tempatan untuk pembinaan perumahan mampan rumah-rumah tradisional yang telah disesuaikan dengan alam dan telah bertahan daripada bencana alam. Ia akan menjadi kehilangan sangat besar untuk masyarakat dan negara jika kemahiran tradisional seperti kepakaran dan strategi penyelesaian masalah yang wujud dalam pembinaan bangunan pribumi akan dibuang dan hilang selama-lamanya.

Objektif kajian ini adalah untuk menunjukkan bahawa terdapat boleh banyak aspek pembinaan bangunan yang boleh dipelajari dan dibangunkan daripada teknologi asli seni bina tradisional Sumatera Selatan untuk pembinaan perumahan mampan.

Kajian ini menggunakan pendekatan kualitatif untuk pengumpulan data melalui kajian pelbagai kes. Ketiga strategi analisis dilaksanakan dalam kajian ini menekankan penerangan lanjut, perbandingan, dan penilaian. Kaedah yang digunakan dalam kajian ini merangkumi temu bual, pemerhatian dan dokumentasi visual. Objek di bawah kajian adalah sebanyak 13 buah rumah tradisional yang terletak di dua bandar dan empat kabupaten di wilayah Sumatera Selatan. Rumah-rumah tradisional telah dipilih berdasarkan kajian, maklumat dan penyelidikan sebelumnya. Di samping itu, penentuan sebuah rumah tradisional adalah berdasarkan kepada lokasi geografi dan gaya seni bina. Dua puluh sembilan responden adalah pemilik atau penghuni rumah-rumah yang dikaji, pemimpin tempatan, pemimpin masyarakat, pembina tempatan dan pakar.

Teknologi tempatan menunjukkan bagaimana pemilihan tapak, susun atur rumah, struktur dan bahan-bahan tempatan rumah tradisional mempunyai keupayaan untuk menjadi mesra alam dan mampu menahan bencana alam untuk beberapa generasi.

Rumah-rumah tradisional juga sangat tahan lama dalam menghadapi bencana alam seperti tanah runtuh, banjir dan gempa bumi.

Pemahaman yang betul dan tafsiran teknologi tempatan senibina tradisional yang menyesuaikan diri dengan alam sekitar boleh menyediakan penyelesaian perumahan yang lebih baik. Teknologi tempatan senibina tradisional Sumatera Selatan boleh ditafsirkan sebagai satu konsep untuk pembinaan perumahan mampan yang diwarnai dengan rasa estetika, mesra alam, menggunakan teknologi logik, dan selaras dengan keperluan budaya dan ekonomi.

Kata kunci: seni bina tradisional, pembinaan yang mampan, teknologi tempatan.



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