

NOVEL TEMPERATURE MEASUREMENT AND PROFILING
SYSTEM FOR BIOCLIMATIC BUILDING MATERIAL



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ABSTRACT

Energy in building has a lot of purpose. One of it is to condition the space for thermal comfort. For hot and humid country like Malaysia, the excess heat that is transferred into a building and increases the internal temperature causes much discomfort. In order to maintain the thermal comfort, this excess heat must be extracted out from the building space. Material for the building envelope plays a very important role to influence the rate of heat transfer. Understanding the thermal behavior will enable engineer to select suitable materials and to design the optimum dimension for building walls from energy efficient perspective. This research project is able to display the thermal behavior of building material under the influence of solar radiation. The temperature profile will display the thermal behavior of building material.

TABLE OF CONTENTS

Acknowledgement	i	
Abstract	ii	
Abstrak	iii	
List of figures	iv	
Table of content	vi	
CHAPTER 1	INTRODUCTION	
1.1	Overview	1
1.2	Energy In Buildings	3
1.3	Designing Low-Energy Buildings	4
1.4	Problem Statement And Project Objectives	5
1.5	Report Organization	5
1.6	Summary	6
CHAPTER 2	LITERATURE REVIEW	
2.1	Introduction	7
2.2	Review on Theory of Heat Flow	8
2.3	Thermal Mass	11
2.4	Conduction	14
2.5	Convection	16
2.6	Energy Efficiency in Buildings	17

2.7	Thermal Performance In Building	22
2.8	Solar Radiation Effect To Building Material	23
2.9	Summary	25

CHAPTER 3: EXPERIMENT AND SIMULATION

3.1	Introduction	27
3.2	Influence Of Solar Radiation On Typical Building Material	27
3.3	Thermal Simulation For Heat Transfer in a Building Material	28
3.4	Case Study On Thermal Behavior Phenomena	30
3.5	Comfort in a Naturally Ventilated Double Story	30
3.6	Summary	31

CHAPTER 4 RESULTS AND DISCUSSION

4.1	Introduction	32
4.2	Thermal Simulation Results	38
4.3	Typical Thermal Behavior of Building Materials	40
4.4	Dry Bulb Temperature for a Newly Built Double Story House with Proper Cross Ventilation Strategy	45

CHAPTER 5 CONCLUSION AND RECOMMENDATION

5.1	Conclusion	49
5.2	Recommendation and Further Work	
	Bibliography	50

CHAPTER 1

INTRODUCTION

1.1 Overview

Building industry is the symbol of development and civilization. Buildings evolve from not depending on energy to very dependant on energy. Building services like air conditioning, lighting, lift and fan uses energy, thus without energy most buildings cannot function and provide the comfort and quality living.

Buildings similar to KLCC Twin Tower, without enough energy will be inhabitable, while a traditional building (Figure 1.1) uses very minimum energy. If not enough effort to conserve energy and practice effective energy efficient strategies during design stage, the future generation may have to live in houses similar to the traditional building of the 19th century below.

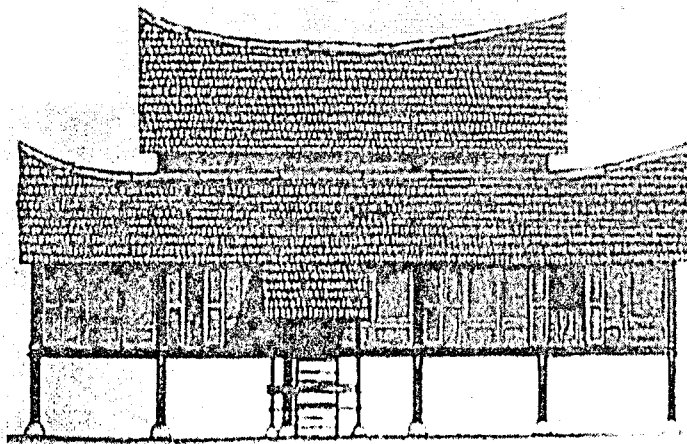


Figure 1.1: Typical Traditional Malay House in the 19th Century