COMPARATIVE ANALYSIS OF ENERGY PERFORMANCE OF AN INSULATED DEMONSTRATING BUILDING

By

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ABSTRACT

COMPARATIVE ANALYSIS OF ENERGY PERFORMANCE OF AN INSULATED DEMONSTRATED BUILDING IN RESIDENTIAL-HOUR COOLING

The aim of this study is to evaluate the benefit of installing insulation at roof pitch and on the ceiling of the building. This is appraisal by the cooling load savings for cooling in residential hour. Two test cells were build named as Test Cell A and Test Cell B, located at UiTM Shah Alam. Test Cell A act as a control unit and Test Cell B was installed with insulation. The study was divided into two parts. Part 1 is the insulation was installed in the roof pitch of Test Cell B. Part 2 is the insulation was installed on the ceiling of Test Cell B after removing the insulation from the roof pitch. Energy meter was used to determine the energy consumption of the cooling system. In part 1, the logging period is 5 days while in part 2 the logging period is 10 days. The result show in Part 1 is when the insulation was placed at the roof of the building, there is no saving achieved. The consumption of the energy in the insulated building is higher compare than the building without the insulation. The penalty of the energy is in the range of 8.29% to 11.25%.The Result for Part 2 is when the insulation was placed at the ceiling of the building, there is saving on the energy. The consumption of the energy in the insulated building is lower compare than the building without the insulation. The saving is in the range of 0.30% to 6.30%.

TABLE OF CONTENT

	Page
ACKNOWLEDGEMENTS	**ii**
TABLE OF CONTENTS	**iii**
LIST OF TABLES	**v**
LIST OF FIGURES	**vi**
LIST OF ABBREVIATIONS	**viii**
ABSTRACT	**ix**
ABSTRAK	**x**

CHAPTER 1

1.0 Introduction 1

1.1 Problem Statement 2

1.2 Objective 2

1.3 Significance of Study 3

1.4 Scope of Research 3

CHAPTER 2

LITERATURE RIVIEW

2.0 Introduction 4

2.1 The Climate 4

2.2 Malaysia Climate 8

2.2.1 Types of Insulation 9

2.3 Thermo Physical Properties 11

2.4 Thermal Comfort 14

2.5 Energy 15