

Final Year Project In Fulfillment Of The
Requirement For The Award Of A
B.Eng.(Hons.)(Mechanical)

ENERGY AUDIT OF A TROPICAL BUILDING

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ABSTRACT

An Energy audit was done on a tall, commercial building in Subang Jaya, Malaysia. The building was designed to suit the tropical climate. The Mesiniaga building has been selected because the building has won numerous awards for the Bio-Climatic building. The Mesiniaga building was chosen of which the cooling load for the building was calculated and by studying the cooling strategies used recommendation are made based on the findings.

A simple audit was carried out involved a walkthrough survey, interviews, some measurements, observation, data collection and calculation of cooling loads manually and verified by using a computer software known as ACCAL.

It was found that the building architect had used skycourts, vertical landscaping, core orientation, round shape to minimise heat gain, solar shading, roof top swimming pool, and fluorescent lighting for thermal strategies. Meanwhile the cooling load of the building is 73.97 W/sqm or 141.78 tons by using the Carrier method done manually. The result by using ACCAL software is 73.43 W/sqm or 140.74 tons.

Lastly, the recommendations to improve the design of this building is attached in this report that can be used in the future to design and build this kind of so called the Bio-Climatic building.

CONTENTS

PAGE

ACKNOWLEDGEMENT i

ABSTRACT ii

LIST OF FIGURES iii

LIST OF TABLES iv

CHAPTER 1 ***INTRODUCTION***

1.0	Introduction	1
1.1	Energy In Buildings	1
1.1.1	Energy Efficiency	4
1.2	Energy Consumption In Malaysia	5
1.2.1	Tariff	8
1.3	The Mesiniaga Building, Subang Jaya, Malaysia	10
1.4	Objective	11

CHAPTER 2 ***ENERGY AUDIT***

2.0	Energy Audit	12
2.1	Types OF Energy Audits	13
2.1.1	Energy Survey Or Walkthrough Audit	13
2.1.2	Preliminary Energy Audit	14
2.1.3	Detailed Energy Audit	15
2.2	Selection Of Type Of Energy Audit	15
2.3	Who Should Do Energy Audits	16

PAGE

2.4	Frequency Of The Conduct Of Energy Audits	17
2.5	The Energy Report	17
2.6	Element Of A Building Energy Audit	18
2.6.1	Building System	19
2.6.2	Important Consideration	20
2.6.3	Cost Saving Opportunities	20
2.7	A Simple Audit	22

CHAPTER 3

THE COOLING LOAD

3.0	The Cooling Load In The Mesiniaga Building	23
3.1	Building Description	25
3.2	Building Characteristic	27
3.3	Calculation	35
3.4	Results Of Audits	36
3.4.1	Calculation By Manually	36
3.4.2	Calculation By Manually Using Carrier Method	49
3.4.3	Calculation By Using ACCAL Software	50
3.4.4	Calculation By Using ACCAL Software (retrofit)	51
3.4.5	Calculation By Using ACCAL Software (retrofit and changing orientation)	52
3.4.6	Comparison Of The Results	53