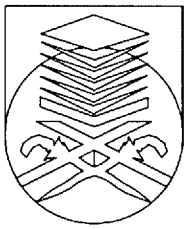


DEPARTMENT OF BUILDING SURVEYING
FACULTY OF ARCHITECTURE, PLANNING AND SURVEYING
UNIVERSITI TEKNOLOGI MARA

COMPARISON GAS DISTRICT COOLING SYSTEM WITH CONVENTIONAL SYSTEM

This academic project is submitted in partial fulfillment of the requirement for the Bachelor Of Building Surveying (Hons.)

MOHD RED ZUAN BIN ABDUL HALIM
(2006699493)

APRIL 2009

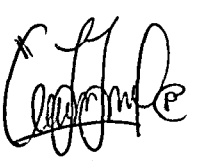
DEPARTMENT OF BUILDING SURVEYING
FACULTY OF ARCHITECTURE, PLANNING AND SURVEYING
UNIVERSITI TEKNOLOGI MARA

UNIVERSITI TEKNOLOGI MARA

ACADEMIC PROJECT
BSB 608 & BSB 658

COMFIRMATION OF ACADEMIC PROJECT AMENDMENTS

This is to confirm that the student has amended his academic project as directed and therefore allowed to compiles

Student Signature : 

Student name : Mohd Redzuan Bin Abdul Halim

UiTM No : 2006699493

Topic : Comparison Gas District Cooling System with Conventional System

Signature : 

Supervisor's Name : Mr. Zulkifli Bin Sapeciay

Date : 27 March 2009

ACKNOWLEDGEMENT

With high gratitude to Allah S.W.T who give me the ideas and physical strength in preparing this final project. Completion of a project of this nature requires more than just the efforts of the author. I wish to express my gratitude to the persons and all parties who responded to the survey and also offered their invaluable contributions in carrying out this final project.

First of all, I would like to express my appreciation and acknowledgement to my supervisor Mr. Zulkifli Bin Sapeciay who has given me guidance and unfailing support and contribution of ideas in preparing this final project. Also a special thanks for his insightful supervision, encouragement, thoughtful criticisms throughout the research and his creative suggestions.

My gratitude also goes to all those who agreed to be interviewed, formally and informally and gave me the benefit of their knowledge, views and experience:

1, Encik Mohd Shahril Ahmat
Head of Operation
GDC (KLIA) Sdn Bhd.
Sepang, Selangor.

2. Encik Che Alias Che Salleh
Head of Maintenance
GDC (KLIA) Sdn Bhd.
Sepang, Selangor.

ABSTRACT

An airport is a major facility in which there are number of buildings which require electrical power, and either chilled water or heat for air-conditioning systems. There fore, major savings to be made in the plant space required in each building by centralizing the plant for the production of heat or cool.

As international airports become complicated, diversified, and magnified, the infrastructure should be reliable. Therefore, utilities to airports have to be of good quality with high reliability. The concept of District Cooling and Heating system has been employed for more than 20 years for airports in Europe. In United State, since air transportation is essential, District Cooling and Heating system is identified as one of the indispensable facility in the airport. Several of the airports utilizing natural gas for air conditioning are adopting absorption chillers.

Recently, many international airports tend to change diversified energy sources rather than depending only on electricity. This is because of energy security as well as energy conservation. In Malaysia, Petronas with its subsidiary company Gas District Cooling (M) Sdn Bhd. is the pioneer for the Gas District Cooling System. A Gas District Cooling System is centralized energy plant generating chilled water for air-conditioning requirements of several buildings within a district.

The construction of a centralized chilled water plant offers the potential for substantial efficiency gains through the generation of a secondary energy source from the waste heat from the primary process.

CONTENT

	DESCRIPTION	PAGE
Abstract		i
Acknowledgements		ii-iii
List of abbreviation		iv-vi
List of chart		vii
List of table		viii
List of figure		ix-x
List of photo		xi-xiv
CHAPTER 1:	**INTRODUCTION**	
1.0	Introduction	1-2
1.1	Issue of the Topic / Problems Statement	3
1.2	Objective the study	4
1.3	Scope of the study	4
1.4	Limitation of study	4
1.5	Methodology of study	5
CHAPTER 2:	**LITERATURE REVIEW**	
2.0	Introduction	6
2.1	Method of system operation	7-28
2.2	Air conditioning applications	29-31
2.3	Selection consideration	32-34
CHAPTER 3:	**GAS DISTRICT COOLING SYSTEM**	
3.0	Introduction	35-37
3.1	The development of natural gas district cooling system	38-39
3.2	Gas	40