

UNIVERSITI TEKNOLOGI MARA

2003

FINAL REPORT OF DIPLOMA PROJECT

FACULTY OF MECHANICAL ENGINEERING



DESIGN PROPOSAL OF AIR
CONDITIONING SYSTEM FOR
BLOCK A UiTM ARAU

MOHD IZHAM MOHD IDRIS

MUHD RIDZO FADZLY ROSELY



**Universiti
Teknologi
MARA**

CAWANGAN PERLIS

Rujukan : 100-UiTMCPs (HEA – 30/7B)
Tarikh : 4 September 2003

Bahagian Hal Ehwal Akademik
"*walau sedikit tetap membantu*"

KEPADA SESIAPA YANG BERKENAAN

Tuan/Puan,

PENGESAHAN SEBAGAI PELAJAR UiTM

TAJUK PROJEK : COOLING TOWER
PROGRAM : DIPLOMA KEJURUTERAAN MEKANIKAL
KOD PROGRAM : EM110

Dengan ini disahkan bahawa nama-nama seperti senarai di bawah adalah pelajar Universiti Teknologi MARA Cawangan Perlis, Kampus Arau.

<u>BIL.</u>	<u>NAMA</u>	<u>NO. PELAJAR</u>
1.	MUHD RIDZO FADZLY B ROSELY	2000112813
2.	MOHD IZHAM B MOHD IDRIS	2000162081

Sebagai memenuhi keperluan program, sebelum dianugerahkan Ijazah, pelajar diperlukan menyediakan kertas projek. Untuk membolehkan pelajar menyiapkan kertas projek tersebut, pelajar memerlukan maklumat atau bahan dari pihak tuan/puan.

Sehubungan dengan itu, sukacita kami sekiranya pihak tuan/puan dapat membekalkan apa-apa maklumat atau bahan yang diperlukan oleh pelajar seperti brosur, risalah dan sebagainya. Sekiranya bahan yang diperlukan oleh pelajar itu merupakan dokumen penting pejabat, ianya bolehlah dibuat salinan fotostat dan kosnya ditanggung oleh pelajar. Maklumat atau bahan yang diperolehi akan digunakan semata-mata untuk tujuan akademik.

Kerjasama pihak tuan/puan dalam hal ini sangat-sangat kami hargai dan didahului dengan ucapan terima kasih. Sekian.

Yang benar,

SALWA BT MOHAMAD
Pegawai Eksekutif Kanan
b/p Pengarah Kampus

02600 ARAU
PERLIS

Tel : 04 - 9874214
Fax : 04 - 9874225
E-Mail : kzaman@rocketmail.com

ACKNOWLEDGEMENT

In the name of Allah, The Most Gracious, The Most Merciful.

Alhamdulillah, for His bestowed patient, courage and blessing, finally we have succeeded in completing our final project as one of the requirements before being granted a Diploma of Mechanical Engineering. We would like to convey our deepest appreciation thank and regards to Mr. Abdul Rahman Hemdi, our supervisor who helped us with his guidance and advises in order for us to complete this project right from beginning, planning periods, construction and provided sharing his information regarding this project. We also like to take this opportunity to give our sincere appreciation for the encouragement and full support given to us by varies parties for instance, Mr. Ir. Hj. Zulkifli Rasid and the officers at UiTM Arau Campus for their undivided support in helping us gathering the necessary information. Finally, our list appreciation goes to our friends and to those who have contributed valuable ideas and constructive whether directly or indirectly during our study research.

Objective

Air conditioning is one of many ways to cold the hot air. Either natural or mechanical. But in this project we specific to the mechanical ways and the cooling tower chiller system is a system that we use. We want to show what is the cooling tower really are and what is the purpose that we choose this type of air conditioning system. In this book, we also show our propose project at the block A at University Technology MARA, Arau Campus.

TABLE OF CONTENTS

Chapter 1: Introduction

- 1.1 Introduction of the project 1
- 1.2 Introduction of cooling tower 2
- 1.3 Human comfort 3
- 1.4 Air-conditioning system 4
 - 1.4.1 Advantages of an air-conditioning system 5
 - 1.4.2 The factor of choosing types of system 5
- 1.5 Classification of air-conditioning unit 6

Chapter 2: Cooling tower

- 2.1 Introductions 8
- 2.2 Main component 8
 - 2.2.1 Cooling tower 8
 - 2.2.2 Compressor 10
 - 2.2.3 Chiller 11
 - 2.2.4 Evaporator 12
 - 2.2.5 Expansion valve 13
 - 2.2.6 Condenser 13
 - 2.2.7 Ducting 14
- 2.3 Chiller control 15