



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

STUDY ON CONSTRUCTION AND MAINTENANCE OF  
TELECOMMUNICATION TOWER IN MALAYSIA

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

MOHAMAD RAFIZUL BIN ROSDI  
(2006699527)

APRIL 2008

## **ACKNOWLEDGEMENTS**

Alhamdulillah, by the name of Allah S.W.T, the most Gracious and the most Merciful, as definitely thankful that I have been given the strength and hope to complete these dissertation, as to fulfill the requirement of the Bachelor of Building Surveying (Hon), for Building Surveying Department, University Technology Mara (UiTM) Shah Alam.

Million infinite thanks express to En. Mohd. Syafiq Bin Salehudin as supervisor this bachelor project. Guidance and advice he give already help a lot in conducting and achieve this bachelor project. My gratitude also belongs to my family, for their love, warm support and faith in me; especially to my father, Rosdi Bin Yaacob, my beloved mother Wan Lijah Bt. Wan Majid, my brothers and sister for all guidance and love throughout my life.

Not forgotten also to all lecturers in Building Survey Department which has been many give coaching by education session. vote of thanks also targeted to En Kumar from TM office in Shah Alam, for giving many Knowledge and help and other classmate friends that much help and pay deep personal support in way to complete this project. Other than that, appreciation also given to all those directly involved or indirectly involved to achieve this bachelor project.

Mohd. Rafizul B. Rosdi  
Bachelor in Building surveying (Honours)  
University of Technology Mara (UiTM)  
April 2008

## **ABSTRACT**

In construction technology aspect, telecommunications tower is either important that the very structure to make sure effectiveness of communication process. Therefore, hence construction and maintenance aspect of telecommunications tower become more important. Maintenance works not made nicely can causing the cost repair jobs increase and comply contribute to the problem less satisfying coverage. A study of construction and maintenance telecommunications tower were carried out to study installation procedure telecommunications tower in a public place, study and identify damage to component tower that often occurs, identify damage causes stated and identify problems often face deep maintenance works. Interview and form questionnaire has been distributed to 3 case-study and just 37 respondent have responded which is 17 from first case-study, 10 from second case-study and 10 from the study third case. Data analysis using use index average method and from the study obtain, installation procedure tower in a public place is base agreement those made among land's owner and tenant. Tower component often damaged is parabolic disk, bolt and nuts and air traffic warning lamp. Main factors of damage are caused by bad climatic and weather factor and vandalism.

**TABLE OF CONTENT** **PAGE**

**ACKNOWLEDGEMENT** i

**ABSTRACT** ii

**LIST OF FIGURE** iv

**LIST OF TABLE/ SCHEDULE** vii

**LIST OF CHART** ix

**LIST OF SYMBOLS** x

**CHAPTER 1 INTRODUCTION**

1.1	Definition of the topic	1
1.2	The issue of the topic	2
	1.2.1 Maintenance issue	2
	1.2.2 High risk of fatal falls.	3
1.3	Objective	9
1.4	Case of study	9
1.5	Scope and limitation of research	10
	1.5.1 Scope of the research	10
	1.5.2 limitation of research	10
1.6	Summary of each chapter	11
1.7	Methodology of the research	13

## **CHAPTER 2 TELECOMMUNICATION TOWER IN MALAYSIA.**

2.1	Background	15
2.2	Types of Telecommunication Tower	17
2.2.1	Self supporting steel Tower	19
2.2.2	Monopoles Tower	25
2.2.3	guyed tower	27
2.3	Main component of Tower	30
2.3.1	Legged limbs	30
2.3.2	Main bracing	31
2.3.3	Secondary bracing	31
2.4	Tower Instruments	32
2.4.1	Aerial	32
2.4.2	Ladder	33
2.4.3	platform	33
2.4.4	wave controlling shelf	35
2.4.5	Thunder and lightning arrestor	35
2.4.6	Paints	36
2.4.7	Air Traffic warning Lamp	38
2.4.8	Site foundation	39
2.4.9	Bolts and nuts connection	39
2.5	Load process	41
2.6	Classification of Telecommunication Tower	42