

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

# COMPARISON ON THE CONSTRUCTION AND MAINTENANCE OF FLYOVER

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

NOR HAFIZAH BT. MOHAMAD NAZRI (2007289176)

APRIL 2010

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

#### COMPARISON ON THE CONSTRUCTION AND MAINTENANCE OF FLYOVER

"I hereby declare that this academic project is the result of my own research except for the quotation and summary which have been acknowledged"

STUDENT'S NAME

: NOR HAFIZAH BT. MOHAMAD NAZRI

SIGNATURE

 UITM NO
 : 2007289176

 DATE
 : 24 MAY 2010

:

#### ABSTRACT

In its most general sense, a flyover is a relationship roads or public way for the passage vehicles and people. Flyover is being as an important facility for people in terms of transportation and relationship between destinations. For that reason, the government plays an important role to reduce a problem on flyover. Before start a flyover construction, a research should be implement about a suitable construction method with the area either in terms of area or land structure. Nowadays many of flyover facing a problem from a structure aspect that can not sustain a load. This problem must to take a serious to ensure an incident not occur again. This dissertation will describe about a manufacturer that produce a flyover products or a parts of flyover component. In Malaysia, normally a contractor will select a material for a flyover either an in-situ concrete or precast concrete from a factory. It have a few precast product that always use by a contractor like precast segmental and precast beam. Precast beam is divide into certain type such as I, M and T type. A selection of precast concrete based on a site project. A data collection that are use is on the interview with a contractors, manufacturers, maintenance operators, client, and consultant. An observation also have been make at a factory and site project. From a research, a summary that obtained are a manufacturers have own method of flyover product. Beside that, a contractor also have their own method for a flyover construction project and maintenance operator also using a method of maintenance works procedure. From the analysis that have been obtained, a conclusion that have been identify are, it have a differences among construction method of flyover product, construction method on site and maintenance method of highway from a manufacturers, contractors, and maintenance operators in Malaysia. Therefore in this study is extended to the comparison between cost, area, time, maintenance method and efficiency from cost versus time and manpower versus time. A result from this comparison are, it have a similarities and differences among that factors,

TABLE OF CONTENT

ABSTRACT	i
ACKNOWLWDGEMENT	ü
TABLE OF CONTENT	iii
LIST OF FIGURES	x
LIST OF CHARTS	xii
LIST PHOTOS	xiii
LIST OF TABLES	xviii

### **CHAPTER 1 - INTRODUCTION**

1.1	General	1
1.2	Issue of the Topic / Problems Statement	2
1.3	Objectives	3
1.4	Scope And Limitation of Study	4
1.5	Methodology of Study	5
1.6	Composition of Chapters	9

## **CHAPTER 2 - FLYOVER**

2.1	Introduction			
2.2	Type Of Flyover			
	2.2.1	Permanent big flyovers	13	
	2.2.2	Permanent Small Flyovers	16	
	2.2.3	Temporary fixed bridges	16	

		2.2.4	Movable flyovers	17	
	2.3	Motorway Flyover			
	2.4	Construction Method			
		2.4.1	Cast-in-Place Construction on Fixed Falsework	21	
		2.4.2	Cast-in-Place Span-by-Span by Use of Stepping Girder	24	
		2.4.3	Cast-in-Place in Stepping Formwork Carriage (Mushroom	27	
			Bridges)		
		2.4.4	Precast Segments placed in Balanced Cantilever	31	
			Construction		
		2.4.5	The Incremental Launching In Prestressed Concrete	33	
			Bridge		
			2.4.5.1 Preconditions for use of the method	35	
			2.4.5.2 Features Of The Incremental Launching	36	
Method					
	2.5	Fabric	cation Process Of Flyover	38	
		2.5.1	Span By Span - One Go Construction	39	
			2.5.1.1 Simply Supported Span	40	
			2.5.1.2 Erection of 'I' Girders Using	40	
			Overhead Launching Truss		
		2.5.2	Span By Span Segmental Construction	42	
			2.5.2.1 Simply Supported Spans	43	
			2.5.2.2 Erection of Precast Segments Using	45	