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DEFECT MAINTENANCE OF PENANG BRIDGE

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ABSTRACT

Bridge form a vital link in any road/rail network. A bridge is meant for carrying vehicular traffic across rivers, structures for interchange including underpasses and flyovers across the highways/railways. Bridge deteriorating and consequent bridge failure can be considered both a technical and social problem and its needed maintenance to ensure that bridge is safe to use and well function. The maintenance work start from in the first stage of design of bridge which is to avoid defect may appear due to fault in design. There have many incidents that happened on bridge due to lack of maintenance on bridge which poor maintenance management because bridges are easier exposed to get defect due to the stresses on a bridge caused by traffic, weather, and construction can resulting cracks in structures of bridges. The objectives of this research are to identify on common and major defect of bridge, investigate the causes of defect on bridge, study the management and maintenance system of bridge, and recommend the best procedure and technique of maintenance and management for bridge defects. The objective of this study was achieved through research from various sources such as textbooks, journals, and etc that related to this research and this research was supported by closed observation, using photo that been taken and formal interviews. From the investigation and research that has been made, the common and major defect can be determined such as concrete. It occurred due to poor design and details, material specifications, construction and environment. Through by best procedure and technique of maintenance and management for bridge defects can ensure the bridge always well-maintain and function.

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CHAPTER 1

INTRODUCTION

1.1 OVERVIEW

Bridge is a structure spanning and providing passage to across a gap or barrier, such as a river, roadway, water or valley. The term of bridge also include all structure facilitating a communication route to cross at higher level, a valley with water or a deep valley without water such as viaduct (Mallet, 1994).

The building and construction industry encompasses housing, commercial, and infrastructure development. Bridge construction is under the transportation infrastructure development. Infrastructure development can be dividing into two types which are hard infrastructure and soft infrastructure. Bridge construction is under the hard infrastructure which is referring to the large physical.

Bridge can be divided into two major parts which is superstructure and substructure. The comparison of the structural system for bridge with single storey building which is the superstructure of a bridge is analogous to a building floor and the substructure is analogous to the wall, columns and foundation supporting it.