

BRIDGE MAINTENANCE STRATEGIES FOR PENANG BRIDGE IN MALAYSIA AND EFFECTS ON LIFETIME ENGINEERING

By Dr. Michael William King (UEM BUILDERS BHD)
Ir. Abd. Rahman Hassan (PENANG BRIDGE SDN BHD)

ABSTRACT:

Penang Bridge was completed in 1985 as the main linkway between mainland Peninsular Malaysia and the island of Penang. The 13.5km long bridge consists of 533 spans of simply supported RC girders and a 225m main span cable-stayed concrete box girder bridge at the navigational channel area. This paper will focus on the maintenance strategies that have been implemented for this bridge to ensure that serviceability needs are met. However, the traffic volume at the present moment has already exceeded the serviceability needs and is at saturated conditions during peak traffic hours. In line with extending the lifetime needs of this bridge, various measures have been taken to ensure that bridge is maintained properly. Furthermore, in order to meet the increased traffic volumes, the bridge is currently being widened to ensure that the serviceability needs are met in the long term. This paper will also look at recommendations from the view point of lifetime engineering to ensure that investments that are made are able to cater towards future requirements in line with lifetime performance requirements.

KEYWORDS: Penang Bridge, maintenance, serviceability, lifetime performance