

**REUSE WATER TREATMENT SLUDGE AS  
PEDESTRIAN PAVEMENT**

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**B.Eng (Hons) (Civil)  
UNIVERSITI TEKNOLOGI MARA  
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By

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Report is submitted as  
the requirement for the degree of  
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## **DECLARATION**

I Khairulnizam Bin Md. Yasin, 2003194276 confirm that the work is my own and that appropriate credit has been given where reference has been made to work of others.

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( Khairulnizam Bin Md. Yasin )  
4 December 2006

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## **ABSTRACT**

Sludge that had removed to lagoon should be treated or reuse. It is because it also has a potential as a construction material. Consequence from this problem, water treatment sludge is recommended to use as a pavement. This will give a way to solve the problem in increasing demand for aggregates especially for use in civil engineering construction. However there are certain classification and specification in pavement construction to be considered. This study is to build a potential of sludge that has been taken from Perbadanan Bekalan Air Pulau Pinang, Batu Ferringhi. The sludge sample was collected at sedimentation pond, which contains alum sludge. The sample of sludge was mixed to a bitumen pavement as a comparing sample to unburned and burned sludge mix pavement. The bulk density, stability and stiffness of pavement sample have been obtained. The test that has done was Marshall Stability Test. All of the results were conducted in laboratory. The data has been analyzed by doing comparison between unburned and burned sludge mix pavement sample. The results that have been obtained shows that unburned sludge have a potential as a mix for pedestrian pavement. The Optimum Asphalt Content also, has been obtained from Marshall Stability test.