

CHAPTER 8

SWMM MODELLING OF AUTOMATED HYDRAULIC FLUSHING GATE AS A FLOW CONTROL STRUCTURE

G. T. Leong, C. H. J. Bong, F.Y. Teo and A. Ab Ghani



ABSTRACT

This study explores the concept of hydraulic flushing gate with an automated control system as a flow control structure of the urban storm water system. The research team has implemented a flush gate with the automated control system to the flow of the water in a drainage channel. The flow control structure was used to determine the effectiveness of such design by applying the concept of virtually on a real-world drainage system at Jalan Astana, Kuching. Computer representations of the existing drainage system and flow control structure were built using EPA SWMM 5.0 model. The series of flow control structure was proven to hold the runoff from 10-year storm. The modelling result shows that there is 25.9% of flow reduction at outlet node. As a modification of the existing drainage system in the urban area involves high construction cost, by installing a flow control structure in the drainage system is an innovative way to control the flow of the water.

Keywords: Control system; flow control; flushing gate; risk; runoff; SWMM model