ABSTRACT

Analysis of Flood Control on Aria Putra Street Using Retention Pond

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The purpose of this study is to examine how retention ponds can be used to mitigate flooding on Jalan Aria Putra in Ciputat. This neighborhood frequently experiences flooding due to a number of causes, including heavy rainfall and a poorly designed drainage system. Waterlogging brought on by this issue affects neighborhood activities and erodes already-existing infrastructure. We employ data analysis techniques from earlier studies to comprehend the ways in which retention ponds can be used as a remedy for this issue. An overview of the efficiency of retention ponds in lowering the amount of precipitation that falls on roads and how that affects the likelihood of flooding is given by this research. According to the analysis's findings, there will be 16 mm of rain per hour at a 10-year return time. 18 mm are returned every hour for a 25-year period, and 20 mm are returned every hour for a 50-year period. The retention pond's volume is made with a capacity of 16,056 m3, an area of 5,352 m2, and a pond depth of 3 m as a result of careful planning. Rainwater can be greatly collected by retention ponds, which also help to avoid protracted flooding. additionally to use flood pumps to direct water from retention ponds into rivers. The flood pump modeling results are programmed to activate automatically when the Serua River's water level exceeds 2.5 meters and to switch off automatically when it reaches 2 meters. Pumped into the retention pond, the water discharge is.

Keywords: *Flood Control, Retention Ponds, Rainfall, Drainage Systems*