

Stormwater Pollutant Removal Using Retention Pond (Wetpond, Detention Pond & Wetland)

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by

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Bio-Ecological Drainage System (BIOECODS) is a Malaysian Pilot Project was developed at Engineering Campus, Universiti Sains Malaysia. Follows the approach of Sustainable Urban Drainage System (SUDS) which combines quantity control, quality control and amenity and concept of control-at-sources, BIOECODS is exhibiting SUDS in Malaysia. Those approach really appropriate in order to solve Malaysian problems such as flash flood, water shortage and water pollution. In this research, only ecological ponds (wetpond, detention pond and wetland) of the BIOECODS system have been studied. It found that ecological ponds are capable to treat stormwater runoff which flows from the study area. Percentages of pollutants removal for all parameters are in the range of 7 % to 94 % for all studied rainfall events. The finding of the research shows that the final discharge from the system is well-treated and is categorized as Class II B according to the National Water Quality Standard, Malaysia. Water balance in constructed wetland which is one of the ecological ponds' components also found capable to supply water for survival of planted wetland macrophytes. New ecosystem also form in constructed wetland area and based on Pearson correlation (R^2) analysis it shows that outflow and wetland storage is well fit with value of 0.99.