

Tropical stormwater floods: a sustainable solution

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Stormwater management is one of the most difficult problem of urban and suburban area. The urban runoff volume related to rain intensity and surfaces properties can lead to flood. Thereby, urban flooding creates considerable infrastructure problem, economics and human damages. In tropical countries, burgeoning human population coupled with unplanned urbanization altered the natural drainage. Consequently, classical intense rain around 100 cm/h produces frequent street flooding.

In our case, we study the management of intense tropical rain, by using a network of individual rain storage tanks. The study area is economical and industrial zone installed in a coastal plain, with seventy per cent of impermeable surface (roads, parking lots, building roof, ...) and thirty per cent of wetland (mangrove, ...). Our solution is to delay the routes and parking lots runoff to the roof one. We propose sustainable individual water storage and a real time dynamical management, which permit to control the roof water arrival in the stormwater culvert. During the remaining time, the stored rainwater can be used for domestic activities instead of the use of drinking water.