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Sustainable Stormwater Management

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Introduction

- Enforcement part of MSMA only addresses the reduction of storm water flow rate out (run off) from the project site.
- However, the quality of water discharged has a significant issue in Malaysia. Impact to the environmental pollution in existing waterways/river and leads into the sea.
- In addition, the total quantity of storm water flow is not enforced. Leading to a higher risk of flash flood in a city scape (due to climate change).

Current Practice in Industry

- Implementation based on enforcement to reduce water flow rate going out from the site with emphasis for an ON-SITE DETENTION TANK/POND.
- Total water quantity discharged out of a site is not reduced. In fact often, increased due to the reduction of pervious area.
- Water Discharge Quality is not enforced.
- Water quality during construction period is not required to be tested and justified i.e BOD, TSS.

Lack of Enforcement in Storm Water Quality Control

- Rubbish from surface are washed into drains to rivers and seas.
- Turtles, seabirds, whales, and seals often misunderstood plastics bags as a jellyfish, which is a source of food.
  - This can cause internal organ failure, or a slow strangulation.
- Chemicals runoff to rivers may interfere with the establishment of aquatic plants, affecting the reproductive behaviour of fish and other animals, and deplete the water of dissolved oxygen as the wastes decompose.

Lack of Enforcement in Total Storm Water Quantity Control

- More water in our Rivers. More impervious surfaces in newly developed site.
- Climate Change, more extreme rain falls expected.
- Flooding Risk increased, especially downstream.
- Enforcement will force:
  - Design to infiltrate stormwater into ground via pervious materials.
  - Design soft landscape to absorb stormwater.
  - Reduces total volume of water in our Rivers.

Questions

- Is there a need to enforce stormwater *quality* control in Green Rated Buildings?
- Is there a need to enforce reduction of stormwater total discharge *quantity* in Green Rated Buildings?
- Is there a need to control the chemical used in buildings for a Green Rated Buildings?
- Is there a need to develop a software to link storm water run-off together with rainwater and grey water harvesting, to water use by the landscape and toilet flushing to show how effective a solution can be?
  - I.e. More pervious landscapes, rainwater harvesting tank, pervious drains, etc.
  - To document success of implementation with actual facts and numbers.