

1-Day Seminar on “How the Advent of New Storm Data Affect the Design of Drainage Structures including On-Site Detention (OSD) and the Application of Software for Impact Assessment?”

CIDB CCD Points & HRDC Claimable Programme Applied

Date : 10/1/2023

Time : 8:30 am – 5:30 pm

Venue : MBAM Training Centre

Speaker: Ir. Dr. Quek Keng Hong

SYNOPSIS

How the Advent of New Storm Data Affect the Design of Drainage Structures including On-Site Detention (OSD) and the Application of Software for Impact Assessment?

The Department of Irrigation and Drainage (JPS) released the second edition of **MSMA** (*Manual Saliran Mesra Alam Malaysia* or the *Urban Stormwater Management Manual*) in 2011. In 2018 and 2021, JPS released updates to the procedures for the estimation of design storm in Peninsular Malaysia (HP1) and for East Malaysia (HP26), respectively. The one-day seminar will cover the following key topics:

1. Impact of differences in design storms based on MSMA (2011), HP1 (2021) and HP26 (2018) on the design of drainage structures.
2. Problems of SSR (Site Storage Requirement) estimates based on the Approximate Swinburne Method in MSMA (2011) and how the application of the Exact Swinburne Method can result in the optimization of SSR estimate in the design of OSD?
3. Application of software for computing the design storm intensities based on MSMA (2011), HP1 (2021) and HP26 (2018) and for the design of OSD using the Approximate Swinburne Method in MSMA (2011) and the Exact Swinburne Method.

Firstly, the differences in design storms based on MSMA (2011), HP1 (2021) and HP26 (2018) are compared for selected stations. These storm intensities are used as input to the Rational Method and the Time-Area Method to estimate the peak discharges and flow hydrographs- and the differences assessed.

Secondly, the Approximate Swinburne Method in MSMA (2011) and the Exact Swinburne Method (Quek, 2017) are applied to estimate the SSR in the design of OSD. The latter was found to result in significant optimization of SSR estimate in the design of OSD. The differences are due fundamentally to the approximation of computational results in the Approximate Swinburne Method and the application of the Swinburne Method with available storm data in the Exact Swinburne Method. Design of OSD based on the Exact Swinburne Method can result in about 50% reduction in storage size of an OSD.

Lastly, the Seminar will cover the application of software for computing the design storm intensities based on MSMA (2011), HP1 (2021) and HP26 (2018) and for the design of OSD using the Approximate Swinburne Method in MSMA (2011) and the Exact Swinburne Method.

REFERENCES: Quek (2017). “Review of Changes in the Second Edition of MSMA- On-Site Detention Computation” The Monthly Bulletin of the Institution of Engineers, Malaysia, March 2017, Pg. 18-24.

BIODATA OF SPEAKER

Ir. Dr. Quek Keng Hong has a Bachelor, Master and PhD degrees in water resources from the University of NSW, Australia. He is a consulting engineer by practice and specialises in the field of urban drainage design and hydrology. He has conducted numerous training workshops and seminars on **MSMA** since 2000, and is the Developer of **MSMAware**- a software designed specifically for **MSMA**. Dr. Quek has about three decades of industrial experience and has published more than 30 papers in his field of specialisation.