Dr. Quek & Associates An Accredited Training Provider for BEM CPD Program
Tel: 03-5882 2085 Fax: 03-5882 1602 Email: webmaster@msmam.com Website: http://msmam.com Forum: http://msmam.net

"MSMA 2- What Changes?"

Find out what changes in the Second Edition of MSMA will drastically affect your drainage design from now on…

Above Photos: Participants of our previous MSMA Seminars

2nd February, 2012

Dear Fellow Engineer,

Do you know the Department of Irrigation and Drainage (DID) will publish the Second Edition of ***MSMA*** this year?

MSMA (***M**anual **S**aliran **M**esra **A**lam Malaysia* or ***Urban Stormwater Management Manual***) is the drainage design procedure first published by the DID in 2001. It is required by law for all engineers in Malaysia to design drainage works to comply with the requirements of ***MSMA***. Ten years after its first publication, DID has completely revised the first edition of ***MSMA*** with the release of the Second Edition. There are many changes in the Second Edition including:

1. The design ARI for major and minor storms for many types of developments have increased, for example, from 50 to 100 years for major storm and from 5 to 10 years for minor storms.
2. The ARI for Major System is now fixed at 100 years from "up to 100 years" as stated in the first edition of the publication.
3. Areas greater than 40 hectares must be designed as a major system, while areas less than 40 hectares must be designed as a minor system.
4. Several chapters including those on On-Site Detention, detention ponds, rainwater harvesting and erosion and sediment control have been completely revised.
5. The design discharge for most types of land-use is estimated to increase by about 10%. This is expected to increase the cost of infrastructure.

The benefits of attending the Seminar are as follows:

1. You will find out about important changes in the Second Edition of ***MSMA***.
2. You will discover the new requirements in the Second Edition of ***MSMA***.
3. You will understand how much increase in cost using the Second Edition of ***MSMA***.
4. You will gain invaluable insight from a qualified expert with over 20 years of experience in the field.
5. You will gain CPD hours by BEM while learning about ***MSMA***.

Signup now for the Seminar by completing and faxing the attached registration form!

The brochure and registration form can also be downloaded from http://seminar.msmam.com. Call me now at 012-2812590 if you have any question about the seminar!

Major Topics Covered in the *MSMA 2* Seminar:

Topics	Morning Session	Afternoon Session
1	Important changes in ***MSMA 2*** affecting drainage design	Case study of a design example using ***MSMA 2***
2	New requirements in ***MSMA 2*** for drainage works	Rising rainfall intensities with ***MSMA 2***
3	Changes in design A.R.I. in ***MSMA 2*** for most structures	Increase in design discharge using ***MSMA 2***
4	Changes in definition of major/minor systems in ***MSMA 2***	Estimated increase in infra cost using ***MSMA 2***
5	Critical comparison of ***MSMA 2*** with ***MSMA*** (2000)	Changes in On-Site Detention design in ***MSMA 2***

Yours Sincerely,

Ir. Dr. Quek Keng Hong

"Attention: Engineers! Find out what changes in the Second Edition of *MSMA* will drastically affect your drainage design from now on…"

Attention: All Civil Engineers…

"MSMA 2- What Changes?"

Seminar on Important Changes in the Second Edition of *MSMA* that Affect You!

Date: 28 April, 2012 (Saturday), Time: 8:30 am- 5 pm.
Venue: C&S Lecture Room (2nd Floor), IEM, Petaling Jaya.

Do you know the Department of Irrigation and Drainage has completely revised the first edition of ***MSMA*** (D.I.D, 2000) and is planning to release the Second Edition (D.I.D, 2010- referred to herein after as ***MSMA 2***) early this year?

In case you don't know, ***MSMA*** (*Manual Saliran Mesra Alam Malaysia* or *Urban Stormwater Management Manual*) is the drainage design procedure first published by the D.I.D. in 2000. It is required by law for all engineers in Malaysia to design drainage works to comply with the requirements of ***MSMA***.

It has been 10 long years since the publication of the first edition. The industry is eagerly awaiting this latest update!

The first edition is not perfect- in fact it is fraught with many challenges- challenges in its applicability and challenges in the relevancy of some of the procedures and requirements.

It is for these reasons that the Department has undertaken a complete revision of the original publication.

The new ***MSMA 2*** publication is not just a simple update with bits of amendments here and there. It is a complete overhaul of the original document with complete rewrite of all the major topics – one to each chapter. This is unlike the previous publication where information about a certain topic may be scattered over several chapters! Below are some of the major changes in ***MSMA 2***:

1. Increase in the design A.R.I. for major and minor storms for many types of developments from 50 to 100 years for major storm and from 5 to 10 years for minor storms.
2. The A.R.I. for Major System has increased to 100 years from "up to 100 years" as stated in the first edition of the publication.
3. It is now required to design areas greater than 40 hectares as a major system and for those less than 40 hectares as a minor system.
4. Several chapters in ***MSMA*** including those on On-Site Detention, detention ponds, rainwater harvesting and erosion and sediment control have been completely revised.
5. Increase in the design discharge for most types of land-use by about 10%. This is expected to increase the cost of infrastructure.

Signup now by completing and faxing the attached registration form.

The brochure and registration form can also be downloaded from http://seminar.msmam.com.

Call Dr. Quek now at 012-2812590 if you have any question about the seminar! Details at http://msmam.com.

References:

- Drainage and Irrigation Department (2000). Urban Stormwater Management Manual for Malaysia (Manual Saliran Mesra Alam Malaysia).
- Drainage and Irrigation Department (2010). Urban Stormwater Management Manual for Malaysia (Manual Saliran Mesra Alam Malaysia), Second Edition, MSMA/MSMA Made Simple.

Seminar Conducted By: ***Dr. Quek & Associates***. Address: No. 12, Jalan Tempua 16, Bandar Puchong Jaya, 47100 Puchong, Malaysia.
Tel: 603-5882 2085, Fax: 603-58821602, email: webmaster@msmam.com, Website: http://www.msmam.com,

Content of the Seminar

- **Session 1- What are the major changes in *MSMA 2*?**
- **Session 2- Where are the important changes in *MSMA 2*?**
- **Session 3- How much are the changes in *MSMA 2*?**
- **Session 4- Why are the changes in *MSMA 2* necessary?**

1st Session (9:00 am- 10:30 am):	2nd Session (11:00 am-12:30 pm):	3rd Session (1:30 pm- 3:00 pm):	4th Session (3:30 pm- 5:00 pm):
A. What? This session looks at the major Changes in the drainage design procedure between the first (D.I.D., 2010) and the second edition (D.I.D., 2010). The main issues covered in this session are as follows: 1. Overall layout of the content in the second edition (***MSMA 2***). 2. Major differences between the first and second edition. 3. New requirements in ***MSMA 2***. The topics covered include: 1. Changes in major/minor design storm A.R.I. for various types of development. 2. Changes in design storm due to changing IDF coefficients. 3. Changes in design discharge using the Rational Method. 4. New definition of a major/minor system. 5. Changes in the design procedure for On-Site Detention. 6. New chapter on rainwater harvesting. 7. Changes in the chapter on Detention ponds. 8. Changes in the chapter on Erosion and sediment control. 9. New chapter on pavement drainage.	**B. Where?** This session looks at sections of ***MSMA 2*** which have changed significantly. The topics covered include the following: 1. Increase in major/minor design storm A.R.I. for various development types. 2. Changes in design storm due to changing IDF coefficients. 3. Changes in design discharge using the Rational Method- due to changes in the coefficient of runoff C. 4. Definition of a major/minor system based on whether the catchment area is above/below 40 hectares. 5. Changes in the design procedure for On-Site Detention (Chapter 5). 6. New chapter on rainwater harvesting (Chapter 6). 7. Changes in the chapter on Detention ponds (Chapter 7). 8. Changes in the chapter on Erosion and sediment control (Chapter 12). 9. New chapter on pavement drainage (Chapter 13).	**C. How?** The purpose of this session is to determine how much changes in key design parameters such as rainfall and discharge from the first to the second edition via case studies. **Case Study 1**: Design Storm A.R.I.- In this case study, the changes in the design storm A.R.I. on the rainfall and discharge is assessed. Assumptions: a typical mixed development comprising 50% medium density residential and 50% commercial centers. Using the design storm A.R.I. for the old and new procedures, the rainfall intensities and design discharges (Rational Method) for both minor and major systems are compared. The quantum of increase is assessed. **Case Study 2**: Design Storm Estimate- The design storm estimates are compared using the fitted IDF coefficients from the first and second edition for a major town in Malaysia. The objective is to determine the change in design rainfall due to changes in the IDF coefficients. **Case Study 3**: Design Discharge Estimate- The Rational Method for the second edition has changed from the first edition. For comparison, the method is applied to a typical catchment and the results compared. The changes in the design discharge due to changes in the runoff coefficient C is assessed.	**D. Why?** This session provides a critical comparison of ***MSMA 2*** with ***MSMA*** (2000). It addresses the following issues concerning ***MSMA 2***: 1. What are the major changes that concern engineers. 2. How much are these changes in approximate magnitude. 3. Why D.I.D. is making these changes. The session will cover the following changes with ***MSMA 2***: 1. Effect of increase in design storm A.R.I. on design rainfall and discharge. 2. Changes in the design rainfall due to changes in the IDF coefficients used. 3. Changes in the design discharge due to changes in the runoff coefficient C. 4. Changes in the chapters on On-Site Detention. 5. Changes in the chapter on detention ponds. 6. Changes in the chapter on erosion and sediment control. 7. New chapter on rainwater harvesting. 8. New chapter on pavement drainage. 9. Estimated increase in infra cost using ***MSMA 2***.

About the Seminar Speaker

Ir. Dr. Quek Keng Hong, a consulting engineer by practice, is the principal of ***Dr. Quek & Associates***. He is a corporate member of ***IEM*** and a professional engineer registered with the *Board of Engineers Malaysia* (***BEM***). Dr. Quek was the Chairman of the *Water Resources Technical Division* of ***IEM*** for two terms since 2003.

Throughout the 20 years he spent in consultancy, Dr. Quek has gained a lot of experience in the field of urban drainage design through his direct involvement in several major infrastructure projects in the country.

Dr. Quek was the reviewer representing ***IEM*** in the initial review of ***MSMA*** organised by ***D.I.D*** **.** in 2000. Since 2003 he has conducted 11 eight-day training workshops on ***MSMA***.

Dr. Quek has over 30 publications in various journals, seminars and conferences in urban drainage design.

Who Should Attend?

The Seminar focuses on changes to the Second Edition of the urban drainage design procedure ***MSMA***.

The Seminar is suitable for all engineers who are involved in drainage design, including those who work in consultants, contractors or government.

You will benefit greatly from this Seminar by understanding important changes to the Second Edition of ***MSMA***.

Seminar Time Table

- Registration: 8:30 am
- 1st Session: 9:00 am- 10:30 am
- Morning Tea Break: 10:30 am to 11 am
- 2nd Session: 11:00 am-12:30 pm
- Lunch: 12:30 pm to 1:30 pm
- 3rd Session: 1:30 pm- 3:00 pm
- Afternoon Tea Break: 3:00 pm to 3:30 pm
- 4th Session: 3:30 pm- 5:00 pm
- Seminar Finish: 5:00 pm

Details About Seminar

- Date: 28 April, 2012 (Saturday)
- Time: 8:30 am- 5 pm
- Venue: C&S Lecture Room (2nd Floor), IEM, Petaling Jaya. (Opposite the Pizza Hut)
- Park at the car parking station behind Pizza Hut and walk about 5 minute across the road via the overhead pedestrian bridge to the seminar venue.
- Two tea breaks and lunch provided.
- You may bring your notebook computer.

Testimonials from Participants

Here are some testimonials we received from participants of our previous seminar/workshops:

Testimonial 1:

Hi Dr. Quek.

I would like to thank you for the ***MSMA*** course which I attended in August. It really help me a lot. I have done a layout proposal on OSD based on ***MSMA*** to JPS Batang Padang and Kinta. The proposal is now approved. Thanks and best regards.

Ir. Chan Kean Chai

Testimonial 2:

Dear Dr. Quek,

I attended your recent lecture. Far from being "dry", I found your presentation very enlightening and lively. It was worth it! On the sideline, your motivational pep talk was inspiring - a "shot in the arm" that each one of us needs every now and then. Right now I can't wait to try out your free spreadsheet programmes.

Ramlee Hassan

Testimonial 3:

Dr Quek,

I attended your recent IEM talk and I must say that it was the most beneficial IEM talk I have ever attended so far. I hope that all the other talks could have been like yours. Thank you again.

A. Halim Abdullah

Testimonial 4:

Dear Dr Quek,

Thanks for the login ID and password. Thanks also for a well organised 4-days workshop. I have found it very interesting and gained an overview of the methods available at the disposal of the drainage engineer as well as basic hydrological concepts. I wish you all the best in your future workshops and undertakings.
Best Regards,

Paul Chia
Bandar Seri Begawan, Brunei Darussalam

Testimonial 5:

Dear Dr. Quek,

I was having a really great time during the workshops. Now i have confidence in my design!

Fadzillah

Testimonial 6:

Dear Dr. Quek,

Greetings from IEM Sabah!!! We would like to conduct a course/workshop on MSMA. We are seeking your expertise to be the speaker for this course/workshop. Appreciate if you would confirm us soon on the above. Thank you.

Wendy Wong (Administrator for IEM Sabah).

21 "Topic-Focused" Chapters in *MSMA 2:*

There are 21 chapters in the Second Edition of the *Urban Stormwater Management Manual* (DID, 2010). Each chapter covers a major topic or type of drainage structure as listed below. The organisation of material is more "focus" and less "scattered" compared to the earlier version (DID, 2000).

Chapter 1- Design Acceptance Criteria
Chapter 2- Quantity Design Fundamental
Chapter 3- Quality Design Fundamentals
Chapter 4- Roof and Property Drainage
Chapter 5- On-Site Detention
Chapter 6- Rainwater Harvesting
Chapter 7- Detention Pond
Chapter 8- Infiltration Facilities
Chapter 9- Bioretention System
Chapter 10- Gross Pollutant Traps
Chapter 11- Water Quality Ponds and Wetlands
Chapter 12- Erosion and Sediment Control
Chapter 13- Pavement Drainage
Chapter 14- Drains and Swales
Chapter 15- Pipe Drain
Chapter 16- Engineered Channel
Chapter 17- Bioengineered Channel
Chapter 18- Culvert
Chapter 19- Pump and Tidal Gate
Chapter 20- Hydraulic Structures
Chapter 21- Maintenance

New Definition of Major/Minor Systems Based on Catchment Area in *MSMA 2*

MSMA 2 defines major/minor systems differently compared to D.I.D. (2000). The minor and major systems are defined based on the size of the catchment area with 40 hectares as the dividing mark. For area less than 40 hectares, it shall be designed based on a minor system event, while for area more than 40 hectares, it shall be designed based on a major system event.

This change is likely to increase the design rainfall or discharges due to higher A.R.I. associated with a major system for catchment area exceeding 40 hectares. Previously there is no clear definition of a major or minor system and is subject to the interpretation of the engineer.

Major System A.R.I. Fixed at 100 Years in *MSMA 2:*

For Major System, the A.R.I. is fixed at 50 and 100 year A.R.I. in ***MSMA 2***, unlike the previous publication where the A.R.I. is defined as "up to 100 year". This gives less flexibility for the engineer to choose the A.R.I. for design of a structure based on risk analysis.

Increase Design A.R.I. for Residential Development in *MSMA 2:*

For residential development, the types of development (low, medium and high density) have been combined into two types (bungalow/Semi-D and link houses/apartment) with higher A.R.I. of 5/50 and 10/100 for minor/major system compared to 2/ "up to 100" and 5/ "up to 100" in the earlier publication.

This will increase the design rainfall and hence discharge associated with a higher design A.R.I. The cost is expected to increase correspondingly.

Higher Design A.R.I. for Minor System

In earlier publication, commercial, business and industrial are grouped according to whether these are located in CBD or non-CBD areas. But in the new publication, these are divided into: commercial and business centers, industry, and institutional building/complex with A.R.I. of 10 and 100 year for minor/major systems.

The minor system A.R.I. for non-CBD area has increased from 5 to 10 year in ***MSMA 2***.

Lower Design A.R.I. for Sport Fields

The term "open space" in the older publication has been replaced by "sport fields" in the new publication. The A.R.I. for major event has reduced from 100 to 10. Interestingly and for good reason, this is the only reduction in A.R.I. in the new publication.

Summary of Major Changes:

Summarised below are the major changes in ***MSMA 2***:

The design discharge for most types of landuse have increased by about 10%. It is expected therefore that the cost of infrastructure for developers will increase correspondingly.

There is less flexibility in the new procedure on the choice of A.R.I. for Major System as this is fixed at 100 years. In the older publication, the engineer is allowed to determine the A.R.I. as the magnitude is stated as "up to 100 years."

Another increase in the design discharge is the definition for minor and major systems as catchments with areas less than or more than 40 hectares, respectively. There is less flexibility for engineers to apply their professional judgement. This may also increase the cost of infrastructure.

There are changes in design procedures in the chapters on On-Site Detention, detention ponds, rainwater harvesting and erosion and sediment control.

REGISTRATION FORM (*MSMA* SEMINAR)

Form E120202W

Dr. Quek & Associates An Accredited Training Provider for BEM CPD Program.
No. 12, Jalan Tempua 16, Bandar Puchong Jaya, 47100 Puchong, Selangor D.E., Malaysia
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1. VENUES AND DATES:

- The 2012 ***MSMA*** Seminar Series will be held at the C&S Lecture Room (2nd Floor), IEM, Petaling Jaya.
- Participants can bring in their own laptop PC. Lunch and two teas provided. Parking available (only 5 minute walk).
- ***Final Seminar Details*** containing seminar timetable and map will be faxed and emailed to all participants 14 days before seminar.
- Please check our website http://msmam.com for important announcements about the seminar.

Seminar Date	**Time:**
28 April 2012 (Sat)	8:30 am - 5 pm

2. DETAILS OF PARTICIPANTS: Please fill up the participant details. **Please print clearly!**

Participant Name:	**Participant Email Address:**
Name (1):	
Name (2):	
Name (3):	
Name (4):	
Name (5):	

Company Name: _____

Company Address:_____

Telephone: _____ Fax: _____ Contact Person Email:_____

Contact Person: _____Signature:_____ Date: _____

3. SEMINAR FEES:

The fees (RM) are as shown below. We offer discount to companies for sending in more than one participants.

No. of Participants:	**1**	**2**	**3**	**4**	**5**
Seminar Fee[1]:	380	744.80	1105.80	1459.20	1805
Seminar Fee[2]:	400	784.	1164	1536	1900

[1]If the fee is paid for before 31-3-2012. [2]If the fee is paid for after 31-3-2012.

4. ENROLMENT:

To signup please follow the two simple steps below (Please fill this page and photocopy. Keep the original for your own record):

Step 1- Payment: Select one of the following three payment methods:

- **Method A- Sending Cheque:** ☐ Yes. Enclosed herewith Cheque No……..……...…for RM……..……payable to ***Dr. Quek & Associates***. Please mail/courier a photocopy of this form with payment to us within 7 days.
- **Method B- Direct Bank-In:** ☐ Yes. Bank in cash/cheque directly to: **Maybank Account No: 512343-542887** payable to: **Dr. Quek & Associates**. Please fill up this section: We have bank in cash/Cheque No …… for RM……..…… on …… Please fax this form back with the bank-in slip after making payment.
- **Method C- Other Payment Method:** ☐ Yes. If you wish to pay by government LO please send us an official letter stating so.

Step 2- Reserve Your Place: Complete this Form and fax it to 03-5882 1602 to reserve your place.

----------**OFFICE USE**----------

☐ We have received your fax booking on _____. Your place is reserved, **but will be confirmed only upon payment**.

☐ We have received the payment from you on _____. Your place is confirmed. Receipt will be issued at the Seminar.

☐ Please find attached the ***Final Seminar Details.*** Please fill up and fax us the **reply slip** below to confirm your attendance.

☐ Comment 1:_____

☐ Comment 2:_____

----------**REPLY SLIP (IMPORTANT: Participants must confirm their attendance by faxing this back to us)** ----------

☐ Yes, we hereby confirmed we have received the ***Final Seminar Details*** and our participants will be attending the Seminar.

Comment (if any): _____

Signed:_____ Stamp: _____ Date: _____

Payment and Refund Policy: Full payment must be received within 7 days after booking via fax. Money paid is not refundable, but substitution may be made at any time. Full refund if the Seminar is cancelled for whatever reasons. We will fax the ***Final Seminar Details*** two weeks before the Seminar date. Please make your flight and hotel booking only after you have received the ***Final Seminar Details*** from us. Visit our website http://msmam.com for update and details of the Seminar.