



“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

29th April, 2012

Dear Fellow Engineer,

Do you know the Department of Irrigation and Drainage (DID) has officially released the second edition of **MSMA**?

MSMA (*Manual Saliran Mesra Alam Malaysia* or *Urban Stormwater Management Manual*) is the drainage design procedure first published by the DID in 2000. It is required by law for all engineers in Malaysia to design drainage works to comply with the requirements of **MSMA**. Eleven 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 “up to 100 years” to 100 years for major systems and from 5 to 10 years for minor systems.
2. Examples of changes include: new IDF curves formula, new coefficient of runoff in the Rational Method, new method for design of OSD, new sediment basin design procedure, new USLE Soil Loss Equation and new water quality criteria.
3. Most chapters including those on detention ponds and erosion and sediment control have been completely revised. A new chapter on rainwater harvesting is introduced.

Based on my case studies for Kuala Lumpur, the following changes were determined between the first and second edition:

1. The storm intensity has increased by up to 133% for a design A.R.I increase from 50 to 100 years.
2. The design rainfall has increased by up to 126% for 10 out of the 14 stations in Kuala Lumpur.
3. The design discharge using the Rational Method has gone up by up to 131% for commercial and city area.
4. The Site Storage Requirement for OSD for a factory site in Kuala Lumpur has increased by up to 190%, and
5. The volume of a wet sediment basin has increased by up to 165%.

The benefits of attending the Seminar are as follows:

1. You will find out about important changes and new requirements in the second edition of **MSMA**.
2. You will understand how much increase in your design using the second edition of **MSMA**.
3. You will gain invaluable insight from a qualified expert with over 20 years of experience in the field.
4. You will gain 6 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!

Major Topics Covered in the **MSMA 2** Seminar:

Topics	Morning Session	Afternoon Session
1	Important changes in MSMA 2 from the first edition.	Case study of change in IDF formula in MSMA 2 .
2	New water quantity design criteria in MSMA 2 .	Case study involving Rational Method in MSMA 2
3	New water quality design criteria in MSMA 2 .	Case study involving OSD design in MSMA 2 .
4	Case study of change in design A.R.I in MSMA 2 .	Case study in sediment basin design in MSMA 2 .

Yours Sincerely,

Ir. Dr. Quek Keng Hong

“Attention: Engineers! 124 attended our first seminar. Due to overwhelming response, we are announcing our second seminar on 30 June, 2012 at IEM.

Attention: All Civil Engineers...

“MSMA 2- What Changes?”

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

Date: 30 June, 2012 (Saturday), Time: 8:30 am- 5 pm.

Venue: Auditorium (3rd Floor), Wisma IEM, IEM, Petaling Jaya.

Included Free: Each participant will receive licenses for 4 spreadsheets on MSMA2 design procedures worth RM200:

These spreadsheets were used in the case studies: (1) IDF computation, (2) Rational Method computation, (3) OSD design computation and (4) Wet and dry sediment basins design. You can use these spreadsheets in your work! No need to reprogram yourself!

Do you know the Department of Irrigation and Drainage (D.I.D) has completely revised the first edition of *MSMA* (D.I.D, 2000) and has officially released the second edition (D.I.D, 2011- referred to hereinafter as *MSMA 2*)?

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 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 11 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. The general consensus of the industry is that it is difficult to use and some of the requirements are difficult to comply. 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 major changes in many topics. Each chapter covers a major topic. This is unlike the previous publication where information about a certain topic may be scattered over several chapters!

Based on case studies for Kuala Lumpur, the following changes were determined between the first and second edition:

1. The storm intensity has increased by up to 133% for a design A.R.I increase from 50 to 100 years.
2. The design rainfall has increased by up to 126% for 10 out of the 14 stations in Kuala Lumpur.
3. The design discharge using the Rational Method has gone up by up to 131% for commercial and city area.
4. The Site Storage Requirement for OSD for a factory site in Kuala Lumpur has increased by up to 190%, and
5. The volume of a wet sediment basin has increased by up to 165%.

Signup now by completing and faxing the attached registration form. The brochure and registration form can also be downloaded from <http://seminar.msmam.com>. 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*

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?**

1 st Session (9:00 am- 10:30 am):	2 nd Session (11:00 am-12:30 pm):	3 rd Session (1:30 pm- 3:00 pm):	4 th Session (3:30 pm- 5:00 pm):
<p>A. What?</p> <p>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., 2011).</p> <p>The main issues covered in this session are as follows:</p> <ol style="list-style-type: none"> 1. Overall layout of the content in the second edition (<i>MSMA 2</i>). 2. Major differences between the first and second edition. 3. New requirements in <i>MSMA 2</i>. <p>The topics covered include:</p> <ol style="list-style-type: none"> 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. 	<p>B. Where?</p> <p>This session looks at sections of <i>MSMA 2</i> which have changed significantly.</p> <p>The topics covered include the following:</p> <ol style="list-style-type: none"> 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. Changes in the design procedure for On-Site Detention (Chapter 5). 5. New chapter on rainwater harvesting (Chapter 6). 6. Changes in the chapter on Detention ponds (Chapter 7). 7. Changes in the chapter on Erosion and sediment control (Chapter 12). 8. New chapter on pavement drainage (Chapter 13). 9. Changes in the water quantity design criteria. 10. Changes in the water quality design criteria. 	<p>C. How?</p> <p>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 five different case studies.</p> <p>Case Study 1: Design A.R.I.- In this case study, the changes in the design A.R.I. on the rainfall and discharge is assessed. Using the design A.R.I. for the old and new procedures, the design storm for both minor and major systems are compared and the differences assessed.</p> <p>Case Study 2: Design Storm Estimate- The design storm estimates are compared using the IDF formulas from the first and second editions. The objective is to determine the change in design rainfall due to changes in the IDF formula.</p> <p>Case Study 3: Design Discharge Estimate- The Rational Method in the second edition has changed. For comparison, the method is applied to a typical catchment. The change in the design discharge due to changes in the runoff coefficient C is assessed.</p> <p>Case Study 4: Change in the design procedure for OSD. The Site Storage Requirements from the two editions are compared and the differences assessed.</p> <p>Case Study 5: Change in Sediment Basin volumes. The storage volume estimates from the two editions are compared and the differences assessed.</p>	<p>D. Why?</p> <p>This session provides a critical comparison of <i>MSMA 2</i> with <i>MSMA</i> (2000).</p> <p>It addresses the following issues concerning <i>MSMA 2</i>:</p> <ol style="list-style-type: none"> 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. <p>The session will cover the following changes with <i>MSMA 2</i>:</p> <ol style="list-style-type: none"> 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 <i>MSMA 2</i>.

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: 30 June, 2012 (Saturday)
- Time: 8:30 am- 5 pm
- Venue: Auditorium, 3rd Floor, Wisma IEM, IEM, Petaling Jaya.
- 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.

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).

20 “Topic-Focused” Chapters in MSMA 2:

There are 20 chapters in the Second Edition of the *Urban Stormwater Management Manual* (DID, 2011). 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

Changes in Water Quantity Design Criteria

The water quantity design criteria has changed in *MSMA 2* with regards to the design A.R.I for major systems.

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

For Major System, the A.R.I is fixed at 100 year A.R.I for major system 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.

Design Storm Increase By 133% for A.R.I Increase from 50 to 100 years

The effect of an increase in design A.R.I from 50 to 100 years is assessed. It was found that the storm intensity will increase by up to 133% for a design A.R.I increase from 50 to 100 years between the first and second edition of *MSMA*.

Design Storm Increase By 126%

Using the new IDF formula, the design rainfall has increased by up to 126% for 10 out of the 14 stations in Kuala Lumpur between the first and second edition of *MSMA*.

Design Discharge Using Rational Method Increased By 131%

The Rational Method from the first and second edition was applied to compute the peak discharges from a site in a commercial and city area. It was found that the design discharge using the Rational Method has gone up by up to 131% .

OSD Storage Volume Increased By up to 190%

The Site Storage Requirement for OSD for a factory site in Kuala Lumpur was computed using the procedures in the first and second edition of *MSMA*. It was found that the volume has increased by up to 190%.

Storage Volume for Wet Sediment Basin Increased By 165%

The storage volume of a wet sediment basin was designed using the procedures in the first and second edition of *MSMA*. It was found that the volume has increased by up to 165%.

New Chapters on Rainwater Harvesting

MSMA2 includes a new chapter on rainwater harvesting which includes procedure for sizing of storage tank for different towns in Malaysia.

Changes in Water Quality Design Criteria in MSMA2

MSMA 2 includes major changes in water quality design criteria. There is a change of approach in *MSMA2* where temporary or permanent BMPs are designed based on 50 or 40 mm of rainfall on the catchment, compared to the first edition where these were based on 3 or 6 month A.R.I storm for dry ponds and 75th or 80th percentile 5 day storm for wet ponds.

Changes in Erosion and Sediment Control Chapter in MSMA2

MSMA 2 includes the Universal Soil Loss Equation (USLE) and the Modified Universal Soil Loss Equation (MUSLE) which was not provided in the first edition.

New Pollutant Removal Targets in MSMA2

MSMA 2 includes new pollutant removal targets for some major pollutants. The TSS removal efficiency is now 80%.



Dr. Quek & Associates An Accredited Training Provider for BEM CPD Program.

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Tel: 03-5882 2085, Fax: 03-5882 1602, Email: webmaster@msmam.com, Website: http://msmam.com

1. VENUES AND DATES:

- The 2012 **MSMA** Seminar Series will be held at the Auditorium, Wisma IEM, IEM, Petaling Jaya.
- Seminar notes provided. 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:
30 June 2012 (Sat)	9:00 am - 5 pm

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

Participant Name:	Participant Email Address:
Name (1):	
Name (2):	
Name (3):	
Name (4):	
Name (5):	
Name (6):	
Name (7):	

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 attractive discount to organisations for sending in more than one participant.

No. of Participants:	1	2	3	4	5	6	7
Seminar Fee ¹ :	580	1137	1670	2181	2668	3132	3573
Seminar Fee ² :	600	1176	1728	2256	2760	3240	3696

¹If the fee is paid for before 1-6-2012. ²If the fee is paid for on or after 1-6-2012.

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.