



INTERNATIONAL CONFERENCE ON DAM SAFETY MANAGEMENT AND ENGINEERING (ICDSME 2019)

Resilient Dams for Safe Communities

19-21 November 2019

THE WEMBLEY HOTEL, PENANG, MALAYSIA

Greeting from Malaysian National Committee on Large Dams (MYCOLD)

The Malaysian National Committee on Large Dams (MYCOLD) is proud to host the first International Conference on Dam Safety Management and Engineering (ICDSME 2019). The conference with the theme “Resilient Dams for Safe Communities” is jointly organized by the Tenaga Nasional Berhad (TNB), Department of Irrigation and Drainage (DID) and Universiti Tenaga Nasional (UNITEN). It is also with great pleasure to announce that the principal keynote speakers of the conference include Michael F. Rogers (President of ICOLD), Datuk Seri Amir Hamzah (President/CEO of TNB), Datuk Ir. Abdullah Isnin (Director General DID Malaysia), Ir. James Ung Sing Kwong (CEO of SEB Power Sdn. Bhd), Tony Bennett (Director Dam Safety and Public Safety Ontario Power Generation), Devendra Kumar Sharma (President INCOLD), Dr. Dong Hoon Shin (Director of Infrastructure Safety Research Centre, K Water Institute, South Korea), and Prof. Pierre Y. Julien (Colorado State University, USA).



Penang, Malaysia

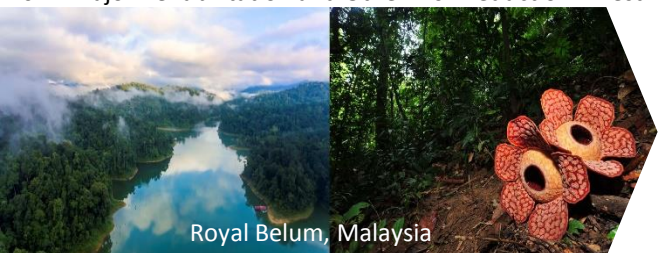
Penang is a state in northwest Malaysia comprising mainland Seberang Perai and Penang Island. On the island, the state capital of George Town is home landmarks such as colonial Fort Cornwallis, the ornate Chinese clan house Khoo Kongsi and the Kapitan Keling Mosque, all testament to centuries of foreign influence. To the west, a funicular ascend Penang Hill, with its trails, flower gardens and panoramic views.

The conference theme:

1. International Best Practices in Dam Safety Management and Governance
2. Sustainable Dam and Reservoir Management
3. Dam Health Monitoring, Data Acquisition and Processing
4. Operation, Maintenance and Emergency Management
5. Safety Reviews and Risk Assessment
6. Major Rehabilitation and Other Risk Reduction Investments



Temengor Dam, Malaysia



Royal Belum, Malaysia

We are also organising pre and post conference workshop:
Dam Safety Reviews: 18 November 2019
Flood Evaluation and Dam Safety: 18 November 2019
Asset Management Planning and: 18 November 2019
Sustainable Dam Management
Reservoir Sedimentation: 21 November 2019
Risk Inform Decision Making Assessment: 22 November 2019
Emergency Management for Dam Safety: 22 November 2019

TELUK BAHANG, AIR ITAM DAM AND PENANG UNESCO WORLD HERITAGE

Penang consists of 22 intriguing street art, mainly located along the streets of Chulia Street, Beach Street, Armenian Street and Weld Quay. Air Itam Dam is Penang Island’s highest water supply dam, serves an important component of Penang water supply Infrastructure.

Technical and Social Tour

HYDRO AND NATURE: TEMENGOR IN ROYAL BELUM AND BAKUN DAM

The Royal Belum is the upper part of the Belum – Temengor rainforest complex which can be reached by boat from Pulau Banding, Perak. Temengor Dam is the uppermost dam of a cascading Sg Perak Hydroelectric Scheme. Bakun Dam is located on the Batang Balui, Sarawak. Bakun Concrete Faced Rock-fill Dam is still the tallest and largest dam in South East Asia.

A

B

Please visit our website

<http://icdsme2019.mycold.mncold.org.my/> for updates, or email icdsme2019@mncold.org.my for further information. We look forward to hearing from you soon.

Organized by: Jointly Organized by:



Supported by:



Air Itam Dam, Malaysia



Bakun Dam, Malaysia

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Media Partner:





International Conference on Dam Safety

Management and Engineering

CONFERENCE WORKSHOP ON ICDSME 2019

18, 21 & 22 November
2019



VENUE:
THE WEMBLEY HOTEL,
PENANG, MALAYSIA

	Workshop	Date	Fee	Speaker
Pre-Conference	Dam Safety Review	18 November 2019	RM850	Mr. Tony Bennett & Clare Raska (Canadian Dam Association)
	Flood Evaluation and Dam Safety	18 November 2019	RM850	Datin Prof. Ir. Dr. Lariyah, Ir Hidayah & En. Rashidi (MYCOLD)
Post-Conference	Reservoir Sedimentation	21 November 2019	RM700	Prof. Pierre Y. Julien (Colorado State University)
	Risk Inform Decision Making Assessment	22 November 2019	RM850	Dr. Adrian Morales Torres (SPANCOLD)
	Emergency Management for Dam Safety	22 November 2019	RM850	Mr. Tony Bennett & Clare Raska (Canadian Dam Association)

Registration

<http://icdsme2019.mycold.mncold.org.my/>

Payment method

Direct deposit or direct transfer	Maybank: 562142419119 (YAYAYASAN CANSELOR UNIVERSITI TENAGA NASIONAL)
Cheque	Payable to "YAYASAN CANSELOR UNIVERSITI TENAGA NASIONAL"

MAIN ORGANIZER



TENTATIVE

Date: 18th November 2019

09:00 - 09:30 : Registration

09:30 - 10:45 : Introduction to Project

10:45 - 11:00 : Tea Break

11:00 - 01:00 : Introduction to Hydrology

- Hydrological Analysis
- Probable Maximum Precipitation (PMP) Estimation
- Exercises on PMP (Hershfield's & Hydrometeorological Method)
- Probable Maximum Flood (PMF) hydrological modelling using HEC-HMS

13:00 - 14:00 : Lunch Break

14.00 - 15.30 : Introduction to Hydrodynamic Model

- Introduction to MIKE 11 & MIKE 21
- Model application
- Input Data
- Reservoir Routing
- River & Flood Plain Routing
- Demo Modelling (Video)

SPEAKER



Datin Prof. Ir. Dr. Lariyah is a Co-President in Malaysian National Committee on Large Dams (MYCOLD) and she holds position as Head of Sustainable Technology and Environment Group (STEG), Institute of Energy Infrastructure (IEI), College of Engineering UNITEN. As an academician and practitioner, she has actively involved in numerous researches and consultancy services in the area of hydrology & water resources, dam safety, hydrodynamic modelling, dam break analysis, reservoir sedimentation and flood forecasting. Over the past 29 years she has involved in various research and consultancy work, mostly as project leader with a total funding of about RM 28 million. She is currently one of the Executive Committees of the Malaysian Hydrological Society.



Ir. Hidayah Basri is presently Lecturer in Civil Engineering Department, UNITEN. Her area of expertise are in Dam Break Analysis, Flood Risk Assessment, Stormwater Treatment Technology. Currently, she is Assistant Secretary for Malaysian National Committee on Large Dams (MYCOLD).



En Rahsidi Sabri Muda is a Principal Researcher, Head of Unit for Civil Engineering & Geoinformatics TNB Research Sdn. Bhd. Malaysia. He has 18 years of working experiences as Project Manager in R&D, project coordinator and supervising R&D projects, assist and guide junior researchers in the unit to advance their technical knowledge and skills and he is currently providing services in Civil Engineering & Geoinformatics to internal TNB and external parties. His research interest includes site assessment, numerical modelling and developing Emergency Response Plan (ERP) for dam break events. He also has conducted various trainings related to dam disaster risk reduction, for example master drill exercise, tabletop exercise on Emergency Response Plan (ERP) for dam safety, and stakeholder engagement program.



“FLOOD EVALUATION AND DAM SAFETY” WORKSHOP

IN CONJUNCTION WITH
***INTERNATIONAL CONFERENCE ON
DAM SAFETY
MANAGEMENT AND ENGINEERING
(ICDSME 2019)***

18 NOVEMBER 2019

The Wembley Hotel, PENANG

MAIN ORGANIZER

JOINT ORGANIZED BY



About Us

“Study on Probable Maximum Flood (PMF) and Development of Hazard Map for Hydro Stations” is a multi-discipline study which has involved inputs from various specialists on specific components. This course provides a detailed technical engineering training program prior to the detailed technical evaluations done on TNB Hydro Stations.

Objectives of the training course

1. To gain an awareness & understanding of the fundamental of hydrology
2. To learn the method in estimating PMP
3. To learn steps used in HEC-HMS for hydrological modelling
4. To learn steps used in MIKE 11 and MIKE 21 for hydrodynamic modelling to develop flood hazard maps
5. Get improvement feedback.

Upon completion of the course, the participants should be able to understand:

- Hydrological analysis
- Modeling using statistics and frequency distribution to calculate PMP, PMF and develop Flood Hazard Maps using MIKE 1D and MIKE2D
- Flood hazard maps produced from modeling



Workshop Introduction

Dams today are enormously designed under the assumption of stationarity using a static design value, known as **Probable Maximum Precipitation (PMP)**

The estimates of PMP are used for calculating the Probable Maximum Flood (PMF) for spillways of large dams where no risk of failure can be accepted. They may also be used to determine the extent of flood plain areas at risk in extreme flood conditions. **The main objective in designing spillways using the PMF is to avoid the loss of life and damage to property due to the overtopping and failure of the dam**

It is worthwhile to explore the impact/result of the PMF towards the dams by re-calculating the PMP values using currently recorded data and taking into account the effect of the climate. It is believable that such future changes in the meteorological thresholds, had they been known among the engineering community when PMPs were being designed, would have received the necessary attention regarding the future uncertainty of the stationary PMP values as a dam ages



For Registration please email us at:
<https://icdsme2019mycold.mncold.org.my>
Workshop Fee: RM 850.00

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SPEAKER



Clare Raska brings the perspective twenty years of experience as a senior engineer with BC Hydro, including development of an innovative dam safety management system which has become recognized as leading practice. Since 1995, Clare has been at the forefront of CDA initiatives to promote dam safety guidance for Canadian dam owners, consultants and regulators. She has served on the CDA Board of Directors, including a term as President.

"People knew it was a bad dam. People talked every spring that it was going to break. They just didn't know what the consequences would be."

- Richard Burkert

SPEAKER



Tony Bennett is a Director of Dam and Public Safety for Ontario Power Generation, responsible for the Dam Safety Program covering dam safety, emergency management and public safety around dams, for a portfolio of 66 hydropower stations and 241 dams. He is Chair of ICOLD's Committee on Public Safety Around Dams, and CDA's Working Groups on Emergency Management and Public Safety. Tony is past President of CDA and the Engineering Institute of Canada. He has served on the Province of Ontario's Advisory Panel on Dam Safety since 2002, and the CEATI Dam Safety Interest Group amongst other professional affiliations.

"Tragedy can break the heart but not the dam of the tearducts while schmaltz can dissolve the most hardened sophisticate."

- Cornelia Otis Skinner



"DAM SAFETY REVIEW" WORKSHOP
IN CONJUNCTION WITH
INTERNATIONAL CONFERENCE ON DAM SAFETY MANAGEMENT AND ENGINEERING (ICDSME 2019)

18 November 2019
The Wembley Hotel, PENANG

MAIN ORGANIZER

JOINT ORGANIZED BY



WORKSHOP DESCRIPTION

The Dam Safety Review Workshop is to provide an overview of the process presented in Technical Bulletin: Dam Safety Reviews (CDA 2016). Participants will gain an understanding of the roles and expectations of the Dam Owner and the Review Engineer, as well as the context of the Dam Safety Review within a dam safety program or management system.

The workshop outlines the steps that should be carried out by a Dam Owner in preparation for a Dam Safety Review, the activities undertaken by the Review Engineer during the process, and the need for follow-up by the Owner after the report has been delivered.

During the workshop, participants will use a fictional case study in group exercises to demonstrate:

- a) The level of effort required to scope a Dam Safety Review
- b) Type of information required to assess the safety of a dam
- c) A framework for considering hazards and failure modes
- d) The need for Dam Safety Review findings to support decision making.

PROGRAM

Time	Topic
8.30	Welcome and Logistics <ul style="list-style-type: none"> • Welcome • Logistics and plan for the day • Introduction of Presenters • Feedback form
8.35	Introduction to the Bulletin <ul style="list-style-type: none"> • Structure • Process diagram
8.45	Preparation by Dam Owner – Section 2 <ul style="list-style-type: none"> • 2.1 Initiate Dam Safety Review • 2.2 Gather Information • 2.3 Define Objectives and Scope • 2.4 Retain Review Engineer
9.10	Case Study Overview for Breakout Sessions
9.20	Breakout 1 – Scoping Exercise (in groups) Use the Available Information tool to scope the DSR <ul style="list-style-type: none"> • Give instructions (5 min) • Participants review case study (5 min) • Group discussions (30 min)
10.00	Refreshments
10.20	Breakout 1 – Report back
10.40	Work by Dam Safety Review Engineer – Section 3 <ul style="list-style-type: none"> • 3.1 Confirm Scope and Contract • 3.2 Review Information & Identify Gaps • 3.3 Understand Consequence • 3.4 Establish Safety Criteria • 3.5 Understand Physical Dam System • 3.6 Understand Dam Safety Management System • 3.7 Conduct Site Visit and Inspections • 3.8 Interview Staff • 3.9 Check Documentation and Records • 3.10 Confirm Functioning of Critical Equipment • 3.11 Evaluate Performance Based on Surveillance

11.20	Work by Dam Safety Review Engineer – Section 3 <ul style="list-style-type: none"> • 3.12 Analyze Dam Safety
12.00	Lunch
13.00	Breakout 2 – Analysis Exercise Use the Hazard and Failure Modes Matrix tool to do analysis <ul style="list-style-type: none"> • Give instructions (10 min) • Group discussions (30 min) • Report back (20 min)
14.00	Refreshments
14.30	Work by Dam Safety Review Engineer – Section 3 <ul style="list-style-type: none"> • 3.13 Identify Findings and Assess Safety of Dam System • 3.14 Recommend Actions and Priorities • 3.15 Prepare Dam Safety Review Report
15.00	Breakout 3 – Findings Exercise Reword, characterize and prioritize findings. Safety statement. <ul style="list-style-type: none"> • Give instructions (10 min) • Group discussions (30 min) • Report back (20 min)
16.00	Follow-up Action by Dam Owner <ul style="list-style-type: none"> • 4.1 Review and Communicate Findings • 4.2 Investigate, Analyze and Assess Options • 4.3 Make Decisions and Implement Improvements

Fee:

RM 850.00 per person

Registration:

<http://icdsme2019.mycold.mncold.org.my/>

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PROGRAM

Date: 21st November 2019

08:30 - 09:00 : Registration

09:00 – 9.30 : Introduction and welcome

9:30- 10.45 : Session1: Reservoir Sedimentation

- Sediment sources
- Dynamic watershed modeling
- Sediment yield
- Contaminant modeling
- Gravel mining

10.45 - 11:00 : Discussion and Q&A session

11.00 – 11.30 : Break

11:30 – 12.45 : Session 2: Sediment Management

- Sedimentation problems near dams
- Density currents in reservoirs
- Dam break impact
- Multi-objective dam operations
- Socio-economic consideration

12.45 – 1.00 : Discussion and Q&A session

1.00 – 1.15 : Group photo with the participants

Fee:

RM 700.00 per person

Registration:

<http://icdsme2019.mycold.mncold.org.my/>

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SPEAKER



Dr. Julien is Professor of Civil and Environmental Engineering at Colorado State University (CSU). He has 40 years of Professional Engineering experience in the field of hydraulic, sedimentation and river engineering. Dr Julien is a renowned expert in river engineering, sedimentation, hydrology and hydraulic. He authored 600+ scientific contributions including two textbook, 35 book chapters and manuals, 200 refereed journal articles including 120 full papers, and 250+ conference papers and presentations. He delivered 25 keynote addresses, taught 20 short courses, and as major professor, he guided 40 Ph.D. and 100+ master students to graduation.

WORKSHOP DESCRIPTION

This half-day workshop presents a basic analysis of sediment yield into reservoirs. It also presents recent advances on density currents in reservoirs and dam break simulations downstream of reservoirs. The half-day workshop divide into two parts which are reservoir sedimentation and sediment management. Participants will learn general guidelines regarding the management of sediment issues from sediment yield estimation, practical solutions to gravel mining problems, density currents, dam break, multi-objective decision process, and socio-economic considerations.



“MODELING & MANAGEMENT OF RESERVOIR SEDIMENTATION” WORKSHOP

IN CONJUNCTION WITH INTERNATIONAL CONFERENCE ON DAM SAFETY MANAGEMENT AND ENGINEERING (ICDSME 2019)

21 November 2019
The Wembley Hotel, PENANG

MAIN ORGANIZER

JOINT ORGANIZED BY



WORKSHOP DESCRIPTION

The Emergency Management for Dam Safety Workshop is a process to assist dam owners in preparing emergency preparedness and response plans, in order to serve the basic needs of the owner, community first responders, and those who regulate dam safety. The workshop provides an understanding roles and responsibilities of the dam owner and stakeholders, focusing on the importance of community engagement and the ways to promote community resilience.

PROGRAM

Time	Topic
8.30	Welcome and Introduction to CDA
8.45	Why Do We Need Emergency Management for Dams?
9.00	Introduction to Emergency Management <ul style="list-style-type: none"> Bulletin Section 1
9.15	Breakout 1 – Areas of Influence
9.35	Framework <ul style="list-style-type: none"> Bulletin Section 2
10.00	Refreshment Break
10.30	Risk Assessment and Controls <ul style="list-style-type: none"> Bulletin Section 3
11.05	Breakout 2 – Inundation Mapping
11.45	Maintain Readiness <ul style="list-style-type: none"> Bulletin Section 4
12.00	Lunch
12.45	Response <ul style="list-style-type: none"> Bulletin Section 5.1 to 5.6
13.20	Breakout 3 – Emergency Classification
14.00	Short Break
14.15	Recovery <ul style="list-style-type: none"> Bulletin Section 5.7 to 5.8, Section 6
14.30	Breakout 4 – Table Top Exercise
16.10	Conclusion <ul style="list-style-type: none"> Wrap-up of Workshop Completion of feedback form Bulletin available at www.cda.ca

SPEAKER



Tony Bennett is a Director of Dam and Public Safety for Ontario Power Generation, responsible for the Dam Safety Program covering dam safety, emergency management and public safety around dams, for a portfolio of 66 hydropower stations and 241 dams. He is Chair of ICOLD's Committee on Public Safety Around Dams, and CDA's Working Groups on Emergency Management and Public Safety. Tony is past President of CDA and the Engineering Institute of Canada. He has served on the Province of Ontario's Advisory Panel on Dam Safety since 2002, and the CEATI Dam Safety Interest Group amongst other professional affiliations.



Clare Raska brings the perspective twenty years of experience as a senior engineer with BC Hydro, including development of an innovative dam safety management system which has become recognized as leading practice. Since 1995, Clare has been at the forefront of CDA initiatives to promote dam safety guidance for Canadian dam owners, consultants and regulators. She has served on the CDA Board of Directors, including a term as President.

Fee:

RM 850.00 per person

Registration:

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“EMERGENCY MANAGEMENT FOR DAM SAFETY” WORKSHOP

IN CONJUNCTION WITH
INTERNATIONAL CONFERENCE ON DAM SAFETY MANAGEMENT AND ENGINEERING (ICDSME 2019)

22 November 2019
The Wembley Hotel,
Penang

MAIN ORGANIZER

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WORKSHOP DESCRIPTION

This course aims at providing basic concepts on the application of risk analysis techniques to dam safety management, presenting available tools for risk analysis and lessons learned from real cases in Spain, America, Asia and Europe. During the course, the benefits of risk-informed dam safety governance will be exposed and discussed, with especial emphasis on how risk results can be used to inform decision making. d responsibilities of the dam owner and stakeholders, focusing on the importance of community engagement and the ways to promote community resilience.

Some of the key concepts that will be explained will be:

- main concepts of risk assessment applied to dam safety,
- steps of risk analysis methodology,
- failure modes identification,
- building quantitative risk models and elaborating input data,
- risk reduction indicators, and prioritization of investments for dam safety governance.

All these concepts will be explained from an applied perspective, using examples from real cases to illustrate them.

Fee

RM 850.00 per person

Registration

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SPEAKER



Adrián Morales Torres holds a degree as Civil Engineer, a MSc in Hydraulic Engineering and Environment and a PhD in Civil Engineering from the Polytechnic University of Valencia (UPV, Spain). He has more than 10 years of experience in the field of dam safety management, working on the application of a risk analysis methodology for dam safety management for more than 60 dams at national and international levels, owned by public and private entities. In addition, he is responsible for software development at iPresas, and he has worked on developing other Decision Support Tools for water infrastructures. He is author or co-author of more than 60 publications, including indexed journal papers, books, chapters, conference papers and guidelines for dam safety and sustainable water management.

PROGRAM

Time	Topic
9.00 - 10.15	Risk assessment main concept applied to dam safety
10.15 - 10.30	Tea break
10.30 - 11.30	Risk analysis methodology
11.30 - 1.00	Failure modes identification
1.00 - 2.00	Lunch
2.00 - 3.00	Quantitative risk models
3.00 - 3.30	Risk reduction indicators
3.30 - 3.45	Tea break
3.45 - 4.30	Prioritization of investments for dam safety governance



“RISK INFORMED DECISION MAKING ASSESSMENT” WORKSHOP

IN CONJUNCTION WITH
**INTERNATIONAL CONFERENCE
ON DAM SAFETY
MANAGEMENT AND
ENGINEERING
(ICDSME 2019)**

22 November 2019
**THE WEMBLEY HOTEL,
PENANG**

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International Conference on Dam Safety Management and Engineering

TECHNICAL VISITS DURING CDSME 2019

21 – 24 November
2019



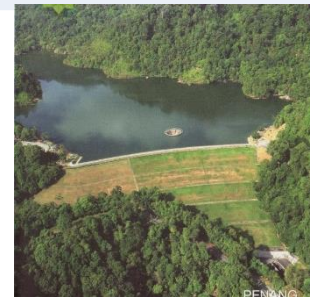
VENUE:

1. Air Itam Dam, Penang
2. Ahning Dam, Kedah
3. Temengor and Royal Belum, Perak
4. Bakun Dam, Sarawak

Registration

<http://icdsme2019.mycold.mncold.org.my/>

Technical Visit		Pax
21 st Nov 2019	Half day visit to Air Itam Dam and Penang City Tour	20 pax only
22 nd to 23 rd Nov 2019	2D 1N Hydro and Nature: Royal Belum & Temengor Dam (accommodation in boathouse)	20 pax only
23 rd Nov 2019	Full day visit: Ahning dam and Agrotourism	30 pax only
22 nd to 24 th Nov 2019	3D 2N: Fascinating Borneo and Bakun Dam (participants must arrange their own flight from Penang to Bintulu via Kuching / Accommodation in Bakun & Murum residential house)	12 pax only



Payment method

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Cheque

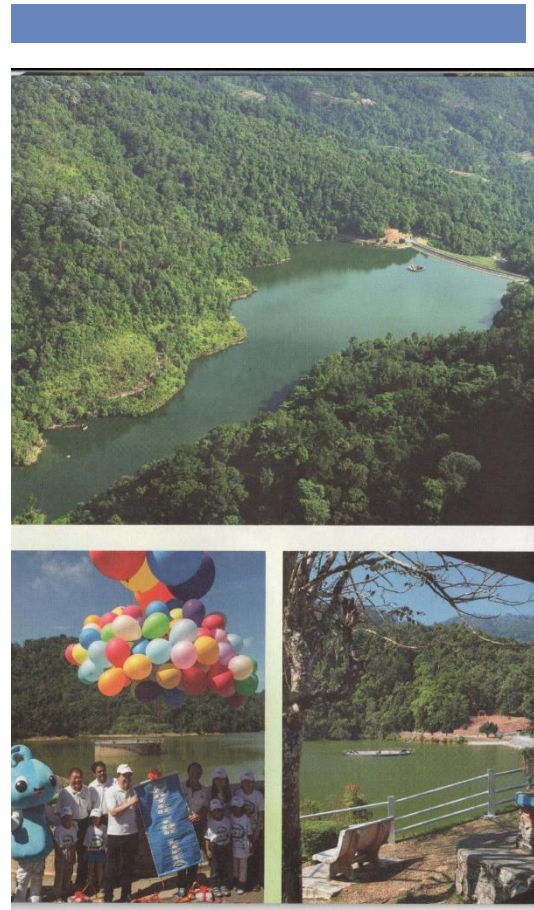
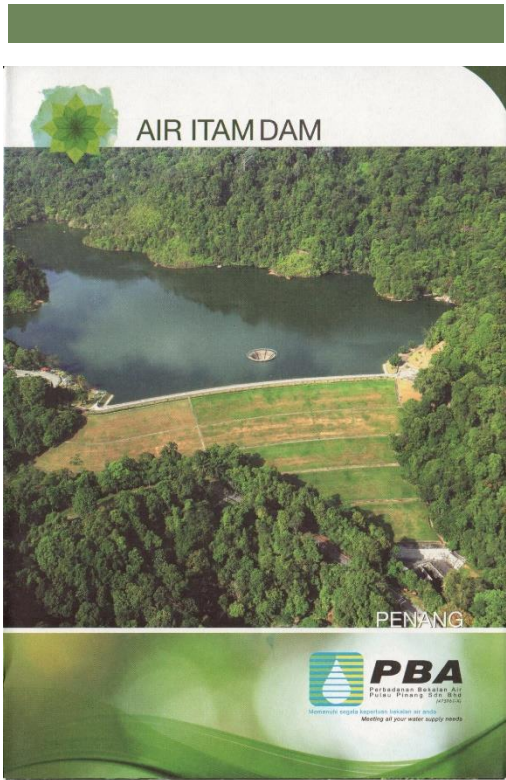
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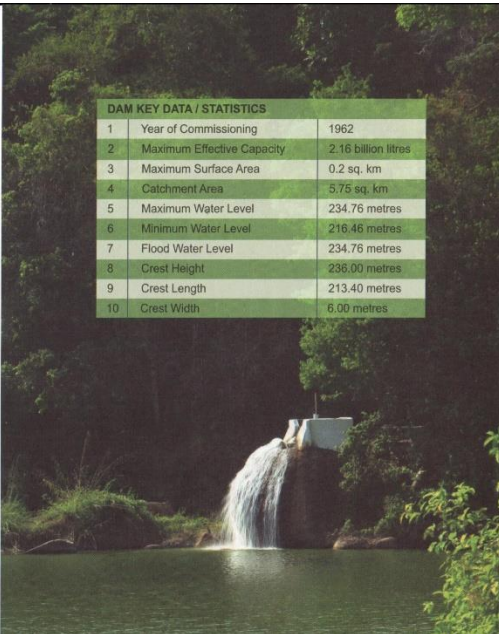


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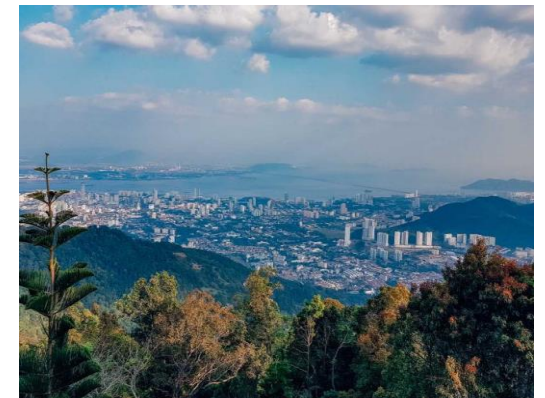
Air Itam Dam is Penang Island's highest water supply dam, serves as important component of Penang's water supply infrastructure. It has the capacity of 2.16 billion m³, serving Air Itam township and nearby highland areas in Penang Island. The view from the top is breathtaking.



Air Itam Dam and Penang UNESCO World Heritage



Teluk Bahang Dam



Breath-taking view of Penang



Penang City Art Murals

There are at least 22 intriguing street art, mainly located along the streets of Chulia Street, Beach Street (Lebuh Pantai), Armenian Street (Lebuh Armenian) and Weld Quay (Pengkalan Weld).



- 2.30pm: Pick up from KOMTAR
- 2.39 – 4.00pm: Visit to Air Itam dam (in collaboration with PBA)
- 4:30pm – 6:30pm :
 - Penang food Trail,
 - Art Wall of Penang,
 - Little India,
 - Anglican Church,
 - Goddess of Mercy Temple,
 - Kapitan Keling Mosque
- 6.30pm – 7pm: Return to hotel



Further information:

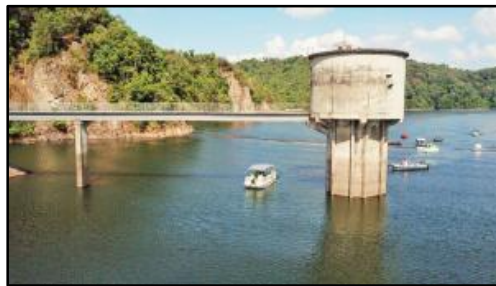
Please contact ICDSME 2019 Secretariat

Registered name of the traveller must be corresponding with photograph documentation (Example: Passport). Tour operators reserve the right to reject if registered traveller fails to provide photographed documentation of their own.

Fees per pax: RM 100 per pax

Itinerary for 21.11.2019: half day visit:

- 2.00pm: Pick up from KOMTAR / Hotel
- 2.30 – 4.00pm: Visit to Air Itam dam (in collaboration with PBA)
- 4:30pm – 6:30pm :
 - Penang food Trail,
 - Art Wall of Penang,
 - Little India,
 - Anglican Church,
 - Goddess of Mercy Temple,
 - Kapitan Keling Mosque
- 6.30pm – 7pm: Return to hotel



MADA manages three (3) dams namely Pedu, Muda and Ahning Dam.

The schemes were built for paddy irrigation in Muda area and to increase rice yield for the Malaysia.

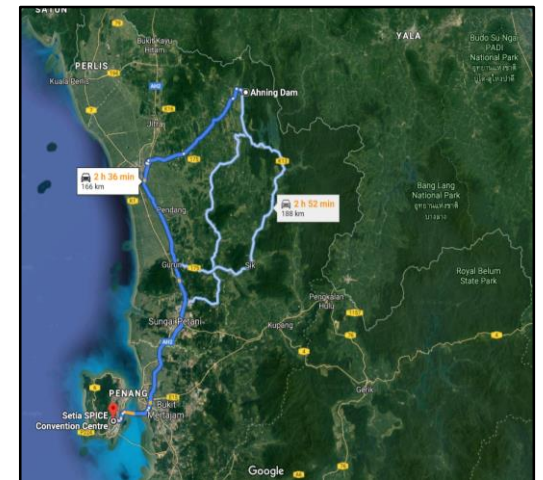
Water is also used for domestic and industrial water supply in the Northern Kedah, Southern Perlis and Langkawi Island areas.

To ensure the sustainability and sustainability of the dam water resources, it is MADA's responsibility to manage the lake and catchment area more efficiently.

Ahning Dam and Agro-tourism Adventure



Ahning Dam



Ahning dam's location. About 166km from Penang



MADA also involves actively in supporting the agro tourism based industry in the northern region of Peninsular Malaysia.

Through this visit, participants can view paddy field, and visit the Fragrant Rice Production Factory in Kuala Nerang by the local entrepreneur. The visit will conduct by Department Of Agriculture - DOA



The visit will include a short visit to a House of Honey which produce high quality honey called Madu Tualang. The visit will conduct by (Federal Agricultural Marketing Authority - FAMA) which will also include short trip to this production area.



Further information:

Please contact ICDSME 2019 Secretariat

RashidMR@tnb.com.my

shahrulbazli@mada.gov.my

Registered name of the traveller must be corresponding with photograph documentation (Example : Passport).

Tour operators reserve the right to reject if registered traveller fails to provide photographed documentation of their own.

Fees per pax: RM 350 per pax

Itinerary for 23.11.2019: 1 day visit:

0800 – 1130 : Road trip from Penang to Ahning Dam.

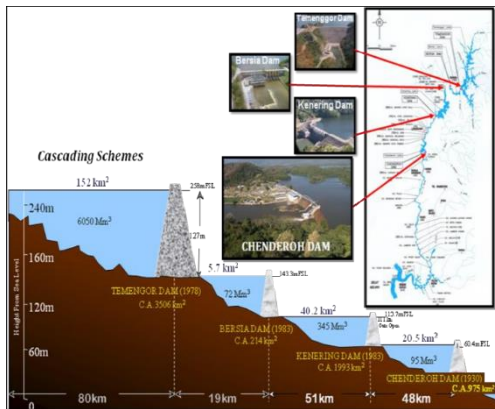
1130 – 1300 : Visit to Ahning dam and Lunch.

1300 – 1500 : Visit to Beras Wangi (Fragrant Rice) factory.

1500 – 1600 : Visit to Honey Factory

1600 – 1900 : Road trip back to Penang.

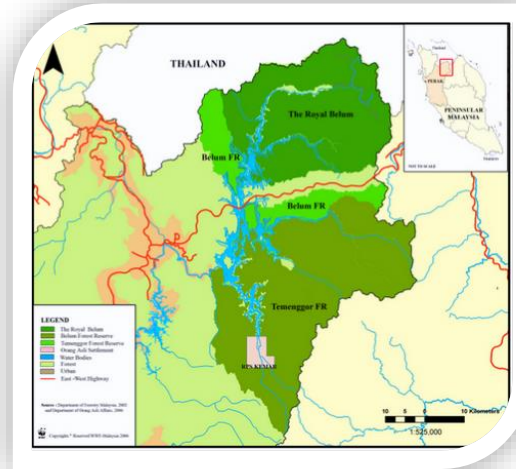
ROYAL BELUM



Your adventure will start from Pulau Banding Jetty, on 30minute boat ride to Rafflesia X Trail spot, while enjoying spectacular view of nature. Along the way to Sg Papan salt lick, amaze yourself viewing Orang Asli village and their tribes carrying out their day-to-day activities.

Spend your afternoon trekking in nature, before heading out on boat ride to Kg Sg Tiang Waterfall Fish Sanctuary. Spend a night camping under the star in small hut built by the local Orang Asli tribe to enjoy night scene in Belum Rainforest.

The next day, hop on the speedboat ride to Pulau Banding Jetty and stop by to visit the majestic Temenggor dam and Sg Perak Hydroelectric Scheme Control Centre in Bersia.



The Royal Belum is the upper part of the Belum - Temenggor rainforest complex which can be reached by boat from Pulau Banding. With limited human activities, it offers breathtaking sceneries and personalised experience with nature, through boating and jungle trekking to one of the oldest tropical forest reserve.,



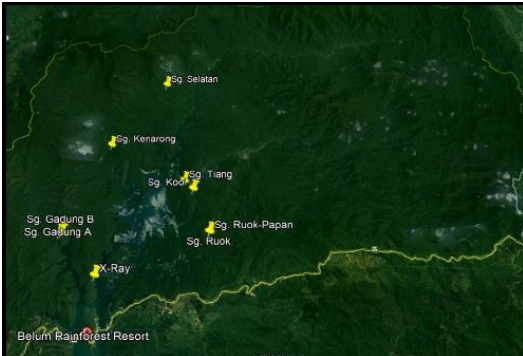
Hydro and Nature: Temenggor in Royal Belum



Temenggor Dam is the uppermost dam of a cascading Sg Perak Hydroelectric Scheme. The dam and its reservoir shares multiple function for hydropower generation, flood protection, water supply, aquaculture, ecotourism and fishing as well being home to abundant of wildlife, forest reserve and home to local tribe.



Rafflesia X Trail



Rafflesia - one of the World's largest flowers – grows in different parts of the forest of Belum Temengor. This species is a seasonal parasite and blooms cyclically through the year – with a bit of luck it's possible to spot in this area. There is a boardwalk full of information on rafflesia. Along the way, enjoy viewing migratory birds find rest in the lake islands.

Sg Papan Salt Lick

World's most threatened species, such as Malayan tiger, Asian elephant, Malaysian sun bear, and tapir call Royal Belum as their home. Get a glimpse of their life by trekking along the Sg Papan trail to see one of the salt licks, a naturally-occurring mineral deposit visited by elephants and deer. Along the way, your guide will point out animal tracks and droppings



Further information:

Please contact ICDSME 2019 / MYCOLD Secretariat:

Azwin.razad@tnb.com.my

RashidMR@tnb.com.my

Registered name of the traveller must be corresponding with photograph documentation.

Tour operators reserve the right to reject if registered traveller fails to provide photographed documentation of their own.

Fees per pax: RM 500

Tentative Schedule for 2d night trip:

22.11.2019: Day 1:

0800 – 1200: Road trip to Grik from Penang
2.00PM: Arrival of Guest at Jeti Awam Pulau Banding & Check In

- Introduction Royal Belum Forest Reserve and Safety Briefing
- **Welcoming Drink**

3.00 PM Cruise to Royal Belum Forest Reserve
4.00 PM Visit to Kampung Orang Asli - transfer via speedboat

6.00 PM Water activities while watching sunset
8.00 PM **BBQ Dinner & Karaoke Session**

23.11.2019 Day 2:

8.00AM **Breakfast**

9.00AM Enjoying waterfall at Sanctuary Kelah & Tengas or Jungle trekking to Sungai Papan's Salt Lick - transfer via speedboat

11.00AM Lunch

12.00PM Check Out

1.00PM Visit to Temengor Dam and Bersia Group Control Centre

Bakun HEP is the largest power generation in Sarawak, and supports the Sarawak Corridor of Renewal Energy (SCORE) initiative in Samalaju Industry Park for energy-intensive heavy industries.



Bakun HEP Concrete Faced Rock-fill Dam is the tallest and largest dam in South East Asia, standing at 205m high with a rock fill volume of 16.93 million m³. The CFRD holds up a large reservoir with a surface area of 695km² and a catchment area of 14,750km².



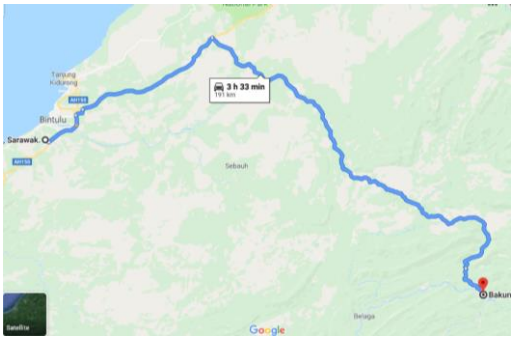
To ensure the dam integrity, a gated Spillway structure with two chutes and flip buckets was constructed, with a capability of discharging 15,000m³ of Probable Maximum Flood (PMF) event safely downstream.

Fascinating Borneo: Bakun and Murum HEPs



The Bakun HEP is located on the Batang Balui, at the upper course of the Rajang River, approximately 37km upstream of Belaga town. It comprises of a CFRD dam, a conventional Spillway, a Intake structure, eight Water Tunnels connected to a hydroelectric power plant with an installed generation capacity of 2,400MW (firm energy of 1,771MW) and a power transmission system to integrate with the existing 275kV / 500kV transmission networks in Sarawak.

The Bakun HEP has been operational since Year 2011, and have been injecting generation ranging from 1,700MW to 2,200MW depending on the grid demands.



Murum HEP is located on the Murum River at the upper Rajang River basin, 200 km from Bintulu. It is designed to produce 635 MW (firm energy) with installed capacity of 944 MW, from a 2,750 km² catchment area feeding a 270 km² reservoir. Murum Dam is a Roller Compacted Concrete (RCC) type, with an integrated world's tallest stepped chute spillway which aerates overflow water through its steps reducing its kinetic energy. Another unique feature of the dam is the standalone 7.5 MW ecological power station that supplies power to the nearby resettlement areas and also conserves as a back feed power to the 13 km stretch away main powerhouse. In addition, the dam was redesigned to preserve the Batu Tungun rock formation "Stairway to Heaven", sacred to the local Penan community

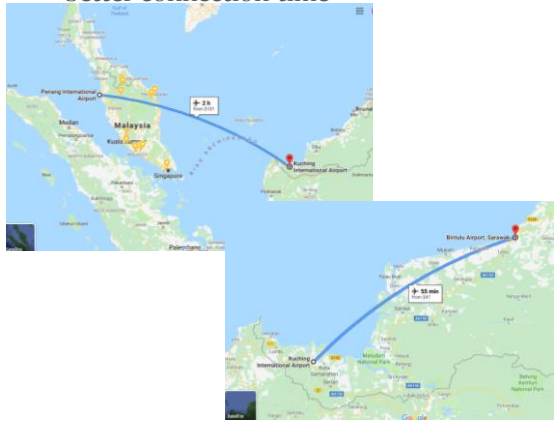
Date	Time	Description
22 nd Nov 2019	700 am	Penang to Kuching Airport Flight depart 7.00 am, Arrive 9.00 am
	1110 am	Kuching to Bintulu Airport Flight depart 11.10 am, Arrive 12.05 pm
	12.30 pm	Lunch
	2.00pm	Depart to Bakun
	5.000pm	Arrive at Bakun
	7.00pm	Meet and Greet & BBQ Dinner
23 rd Nov 2019	830 am	Breakfast & Safety briefing
	930 am	Visit to Bakun Dam, power house and appurtenant structures
	1130 am	Boat trip to Murum powerhouse
	1230 pm	Lunch at Murum
	130 pm	Visit to Murum intake
	330pm	Depart to Bintulu
	700 pm	Dinner and check in Bintulu Hotel
24 th Nov 2019	Morning	Check out and Depart from Bintulu Airport



Further information:

Please contact ICDSME 2019 / MYCOLD Secretariat:

- Azwin.razad@tnb.com.my
- then@seb.gov.my
- Registered name of the traveller must be corresponding with photograph documentation.
- Tour operators reserve the right to reject if registered traveller fails to provide photographed documentation of their own.
- **Fees per pax: RM 1300 (without air ticket and accommodation in Bintulu which have to be arranged separately)**
- **Participants must arrange their own flight from Penang to Bintulu via Kuching as per tentative**
- **Participants must also arrange their flight from Bintulu to their preferred destination after the visit**
- Best option is AirAsia from Penang – Kuching – Bintulu. Reason is the connection from Kuching Bintulu has better connection time



INTERNATIONAL CONFERENCE ON DAM SAFETY MANAGEMENT AND ENGINEERING

"Resilient Dams for Safe Communities"

19 - 21
NOV. 2019

THE WEMBLEY HOTEL,
PENANG, MALAYSIA

INTERNATIONAL CONFERENCE ON DAM SAFETY MANAGEMENT AND ENGINEERING 2019

19-21 NOVEMBER 2019

THE WEMBLEY HOTEL, PENANG, MALAYSIA.

Website: <http://icdsme2019.mycold.mncold.org.my/>

WORKSHOP & TECHNICAL TOUR'S REGISTRATION FORM

Title (Please tick) : Prof. Assoc. Prof. Dr. Mr. Ms.

Full Name (as per IC/Passport) : _____

IC / passport no. : _____

Age (by year) : < 35 years old 35-50 years old >50 years old

University/Organization: _____

Mailing Address : _____

City : _____ State/Province: _____

Zip/Postal Code: _____ Country : _____

Telephone : () _____ Fax: () _____

Email : _____

Emergency Contact Number : () _____

Food (Please tick) : Non-vegetarian Vegetarian

WORKSHOP Registration (Please tick the appropriate WORKSHOP --Max 30 Pax in each workshop)

PRE-CONFERENCE
<input type="radio"/> Dam Safety Review (RM850) on 18 Nov 2019
<input type="radio"/> Flood Evaluation and Dam Safety (RM850) on 18 Nov 2019

INTERNATIONAL CONFERENCE ON DAM SAFETY MANAGEMENT AND ENGINEERING

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POST-CONFERENCE

- Reservoir Sedimentation (**RM700**) on 21 Nov 2019
- Risk Inform Decision Making Assessment (**RM850**) on 22 Nov 2019
- Emergency Management for Dam Safety (**RM850**) on 22 Nov 2019

TECHNICAL TOUR Registration (Please tick the appropriate TOUR)

- Ahning Dam and Agro-tourism Adventure (**RM350**) on 23 Nov 2019 - Max 30 pax
- Air Itam Dam and Penang UNESCO World Heritage (**RM100**) on 21 Nov 2019-Max 20 pax
- Hydro and Nature: Temengor in Royal Belum (**RM500**) on 22&23 Nov2019(2D1N)-Max 20 pax
- Fascinating Borneo and Bakun Dam, Sarawak (**RM1500 without air ticket**) on 22 to 24 Nov 2019 (3D2N)-Max 12 pax

* **First come first serve basis**

PAYMENT METHOD (Please tick appropriate box)

- cheque ATM Deposit Online-Banking Letter of Undertaking (LOU)

- If you choose payment option by **cheque**, kindly made payable to “**YAYASAN CANSOLOR UNIVERSITI TENAGA NASIONAL**”
- If you choose payment option by **ATM direct deposit or Online-Banking**, (**MAYBANK A/C 562142419119**) please attach the transaction slip or bank slip with the completed registration form and e-mail to the committee.
- If you choose payment option by Letter of Understanding (LOU), please attach the LOU and email to the committee.

Please completed the registration form with **PROOF OF PAYMENT**

If you have any queries and problem, please email to :

1. info@icdsme.mncold.mycold.org.my
2. secretariat@mncold.org.my
3. mkchai@uniten.edu.my