

# **CCOP-JMG-BGS Workshop on Urban Geology**

## **26 – 28 February 2019, Putrajaya, Malaysia**

### **A. Background and Objective:**

Urbanization is one of the greatest social and physical transformations on the planet. Under an uncertain climatic future, rapid urban population growth presents a set of major challenges for many countries, in particular the coordination of city and regional planning, support for the provision and maintenance of appropriate and resilient infrastructure, management of natural resources and the limitation of environmental degradation. These challenges are encompassed within many of the UN's Sustainable Development Goals, including SDG 9 (industry, innovation and infrastructure) and SDG 11 (sustainable cities and communities). Asia is one of the most rapidly urbanizing regions with 48% of the population currently residing in urban areas; by 2050 this is expected to reach 64% with India and China accounting for much of this increase (UN, 2014).

Geoscientists working on issues in the urban environment face particular challenges, for instance in separating natural geological processes from anthropogenic change and in understanding how geology affects the cultural, social and built fabric of the city. Conversely the wealth of detailed data that can be accessed in cities from geotechnical studies offers the geologist unique opportunities to understand, model and visualize the sub-surface.

A two day workshop has been organized by CCOP with the support from Department of Mineral and Geoscience Malaysia and the British Geological Survey to introduce participants to the concept of urban geology as a discipline, and to provide an opportunity to share experience by examining case studies. The workshop will include sessions on data field and laboratory techniques used in an urban environment, with a focus on planning an urban geological study. The workshop's second day will focus on the development of 3D urban geology models, applied urban ground models (engineering, hydrogeology), with UK case studies and thematic mapping and data delivery. The workshop will conclude with a discussion of how data and models can be effectively communicated to partners from a city management or planning background. After the workshop, on the 28<sup>th</sup> of February there will be opportunity to take part in a field excursion, during which we will visit sites of particular relevance to the understanding of the role of geology in Kuala Lumpur's development.

### **B. Participants and Resource persons:**

1. CCOP Member Countries
2. Resources persons from British Geological Survey

**C. Venue and Date:** Everly Hotel Putrajaya, Malaysia, 26-28 February 2019

### **D. Implementing/coordinating organizations:**

1. Department of Mineral and Geoscience Malaysia (JMG)
2. British Geological Survey
3. CCOP Technical Secretariat (CCOPTS)

## **E. Program**

<b>Day 1 26<sup>th</sup> Feb 2019 (Tuesday)</b>		
<b>Time</b>	<b>Session</b>	<b>Format</b>
08:00-08:30	Registration	
08:30-09:30	Opening Ceremony	
09:30-10:00	Workshop Outline: aims, objectives, introductions	Introductory talk
10:00-11:00	Introduction to urban geology: science, drivers, policy, case studies	Lecture
11:00-11:30	Break	
11:30-12:00	Activity - Local challenges and opportunities for future urban development: participants share their experiences	Interactive session
12:00-13:00	Field techniques for mapping urban geology	Lecture
13:00-14:00	LUNCH	
14:00-15:30	Lab techniques for characterisation of urban deposits, using Singapore Case study	Lecture
15:30-16:00	Break	
16:00-17:00	Activity - Designing an urban field campaign	Practical session
17:00-17:30	Summary learning from day 1	Summary discussion

**Welcoming dinner** (host by CCOP)

<b>Day 2 27<sup>th</sup> Feb 2019 (Wednesday)</b>		
<b>Time</b>	<b>Session</b>	<b>Format</b>
08:30-09:00	3D KL (challenges and way forward) by JMG Selangor	Technical talk
09:00-09:30	Recap of day 1 and objectives for day 2	Introductory talk
09:30-10:30	Development of 3D urban geology models	Lecture
11:00-11:30	Break	
11:30-12:30	Applied urban ground models (engineering, hydrogeology), with UK case study	Lecture
12:30-13:00	Introduction to Anthropogenic process and impacts	Lecture
13:00-14:00	LUNCH	
14:00-14:30	Thematic mapping using urban geology: data, applications and delivery	Lecture
14:30-15:00	Application of geology information for urban planning: case studies	Interactive session
15:00-15:30	Break	
15:30-17:00	Activity: a) Thematic maps and models b) Policy and partners for effective implementation	Practical session
17:00-17:15	Summary of workshop	Summary discussion
17:15-17:45	Closing Ceremony	

**Farewell dinner** (host by JMG)

<b>Day 3 28<sup>th</sup> Feb 2019 (Thursday)</b>		
	Optional urban geology field excursion in KL (TBC, maybe Batu caves, KL SMART tunnel, Land instability)	Field trip