





Waste Engineering and Management

Proceeding



The 1st International Conference on Sustainable Infrastructure and Built Environment in Developing Countries

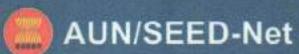
> SABUGA ITB, Bandung - Indonesia 2nd - 3rd November 2009

Published by Faculty of Civil and Environmental Engineering Institut Teknologi Bandung - Indonesia







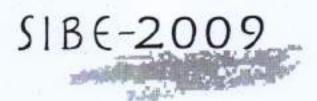






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SIBE 2009 published eight (8) volumes of proceeding as following:

Volume A: Structure and Material

Volume B: Transportation System and Engineering

Volume C: Water Engineering and Management

Volume D: Waste Engineering and Management

Volume E: Ocean Engineering

Volume F: Construction Management

Volume G: Geotechnical Engineering

Volume H: Environmental Protection and Management

PREFACE

The 1st International Conference on Sustainable Infrastructure and Built Environment in Developing Countries (SIBE) 2009 is aimed to provide a forum to discuss and disseminate recent advance in scientific research, technology, and management approach to obtain better environment quality.

Infrastructure that provides the basic need of a society and sustainable infrastructure system are essential for the survival, health and well-being of a society. In developing countries, civil and environmental engineers are at the epicenter in seeking means to enhance the quality of human life through modernization of infrastructure as evidenced by provision of shelters, water, and transport, amongst others. The current rate of urbanization and industrialization raises a number of environmental issues, often resulting in environmental mismanagement, especially in developing countries. The problems are further aggravated by environmental degradation such as soil erosion, depletion of water resources, etc. In order to meet these multifaceted challenges, proper planning followed by implementation and verification must be exercised, via an integrated, multi disciplinary and holistic approach.

The conference will provide an opportunity for professionals and researchers to learn, share and exchange about the latest development and research in civil and environmental engineering. The scope of the conference covers all aspect of civil and environmental engineering practices.

Participants of the conference include researchers, academic staffs, students, industries, public and local governments. The keynote presentations during the conference are as follows:

Keynote speakers:

- Indonesian Government Representative Minister of Public Works, Indonesia
- Dr. Puti Farida Marzuki
 Dean of the Faculty of Civil and Environmental Engineering, Institut Teknologi Bandung, Indonesia
- Dr. Tony Liu
 National Taiwan University, Taiwan
- Prof. Shunji Kanie Hokkaido University, Japan
- Prof. Syunsuke Ikeda
 Tokyo Institute of Technology (AUN/SEED-Net), Japan.

Invited speakers:

- Dr. Setiawan Wangsaatmaja
 Environmental Protection Agency of West Java Province, Indonesia
- Dr. Edwan Kardena
 Faculty of Civil and Environmental Engineering, Institut Teknologi Bandung, Indonesia
- Prof. Harianto Rahardjo, Ph.D.
 School of Civil and Environmental Engineering, Nanyang Technological University, Singapore
- · Prof. Ikuo Towhata

School of Engineering, University of Tokyo, Japan

- Prof. Dr. Seiichi Kagaya School of Engineering, Hokkaido University, Japan
- Prof. Jun Sasaki
 School of Engineering, Yokohama National University, Japan
- Prof. Carl Martin Larsen
 Norwegian University of Science and Technology, Norway

- Dr. George W. Annandale, D.Ing., P.E. Golder Associates Inc., USA
- David Woodward, D.Phil.
 University of Ulster, United Kingdom
- Dr. Delia Dimitriu
 Centre for Air Transport and the Environment (CATE), Manchester Metropolitan
 University, United Kingdom
- Prof. Tsunemi Watanabe
 Department of infrastructure Engineering, Kochi University of Technology, Japan

 Prof. Shyh-Jiann Hwang
- Department of Civil Engineering, National Taiwan University, Taiwan
- Prof. Kuo-Chun Chang
 Department of Civil Engineering, National Taiwan University, Taiwan

 Prof. Suprihauto Notodarmojo
- Faculty of Civil and Environmental Engineering, Institut Teknologi Bandung, Indonesia

 Masyhur Irsyam, Ph.D
- Faculty of Civil and Environmental Engineering, Institut Teknologi Bandung, Indonesia
 Prof. Nakasaki Kivohiko
- Tokyo Institute of Technology, Japan.

The objectives of this conference are:

- To provide a platform for exchange of ideas, information and experiences among academics, researchers, consultants, engineers, manufacturers and post graduate scholars in civil and environmental engineering.
- To discuss and evaluate the latest approaches, innovative technologies, policies and new directions in infrastructure development, pollution prevention and eco-friendly technologies adapted to developing countries.
- To promote cooperation and networking amongst practitioners and researchers involved in addressing infrastructure and built environment issues.

The oral and poster presentations are subdivided into 8 major sections, as following:

- A. Structure and material.
- B. Transportation system and engineering
- C. Water engineering and management
- D. Waste engineering and management
- E. Ocean engineering
- F. Construction management
- G. Geotechnical engineering
- Environmental protection and management.

There are 174 contributors in oral presentation and 36 contributors for poster presentation.

Finaly, the Organizing Committee wishes that this conference is able to provide beneficial scientific information to the participants and other concerned readers.

Bandung, November 2009 Organizing Committee



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