

2nd INTERNATIONAL CONFERENCE **ON BUILT ENVIRONMENT IN DEVELOPING COUNTRIES 2008**

“Sustainable Built Environment: Bridging Theory and Practice”



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SCHOOL OF HOUSING, BUILDING & PLANNING, USM
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Message from the Vice Chancellor, Universiti Sains Malaysia

On behalf of the Organizing Committee and Universiti Sains Malaysia, it gives me tremendous pleasure and joy in welcoming all of you to the second International Conference on Built Environment in Developing Countries, ICBEDC 2008. This second international conference comes at a time when we seem to be facing a daunting task in overcoming the challenges of various global issues. The Built Environment has always been the gauge upon which we measure our accomplishments and progress, but alas, often at the expense of the depletion of our natural environment and resources.



We, as the caliphs of the world should heed the signs Mother Nature has begun to show us and there is no better time than the present to start taking pertinent steps in rectifying or even undoing the damage we have wrought on. As such, ICBEDC 2008 should be looked upon as an avenue for those in the Built Environment, either as practitioners or academicians, in bringing safe and sustainable approaches unto the undertakings of the construction industry. If the first ICBEDC was aimed at establishing ideas and notions of sustainable transformation, the theme this year, '*Sustainable Built Environment: Bridging Theory and Practice*' promises to take the next all important steps. Only by bringing all our concepts to practical fruition can we hope to achieve a built environment that will truly be sustainable for the generations to come.

We here at Universiti Sains Malaysia are proponents and advocates of a sustainable tomorrow. Our own transformation plan, which humbly began six years ago, has culminated in a comprehensive approach themed, '*Transforming Higher Education for a Sustainable Tomorrow*'. We firmly believe that through education and knowledge, we can indeed transform the world into a truly better place for all. Thus, this effort by our very own School of Housing, Building & Planning is a concrete leap forward in achieving this noble aim. To all our participants, either my fellow Malaysians or from abroad, I applaud each one of you for taking the effort in making ICBEDC 2008 a success and at the same time wish everyone a delightful and memorable academic sojourn here in Universiti Sains Malaysia and the wonderful island of Penang.

I offer you all my sincerest thanks and my heartfelt regards.

A handwritten signature in blue ink. The signature is stylized, starting with a large 'D' and ending with a flourish that resembles a 'Z' or 'R'.

Professor Tan Sri Dato' Dzulkifli Abdul Razak

Message from the Dean, School of Housing, Building & Planning Universiti Sains Malaysia

In the name of Allah, the Most Gracious and the Most Merciful.

First and foremost, allow me to convey my warmest welcome and greetings to all participants of the 2nd International Conference on Built Environment in Developing Countries, ICBEDC 2008. This second international conference comes at the heels of the successful inaugural conference last year and the theme of this year's ICBEDC 2008, '*Sustainable Built Environment: Bridging Theory and Practice*' can be seen as a continuum of sorts where the first conference left off. If we were initially trying to canvass ideas that can be utilized as seeds of a more sustainable approach to the Built Environment, this second conference aims to sow these seeds and reap a bountiful harvest of practical ways to embed sustainable development notions into our industry.



ICBEDC 2008 this year has managed to attract more than 150 working papers and this truly reflects the general consensus of the important actors within the Built Environment. The idea of sustainable development is no more a mere polemic argument in our minds but rather a valid and workable series of issues that we as a global community should face head on. The efforts of the School of Housing, Building & Planning coupled with the gallant efforts of Universiti Sains Malaysia in providing a strong foundation for a more sustainable tomorrow need a universal and concerted assistance from a global audience. In this vein, ICBEDC 2008 helps to bring together a group of like minded individuals, be them from the academia or from the industry, in congregating to bring about welcomed change to the Built Environment. My hope is that the 2nd ICBEDC 2008 will leave a lingering notion of change for all of us to imbue sustainable development approaches in our professional undertakings.

I truly believe all participants will definitely and actively ensure ICBEDC 2008 becomes a veritable success. I offer you my sincerest appreciation for your academic endeavours and hope your brief stay here will be a pleasant one. My cordial thanks to all those involved in enabling the School of Housing, Building & Planning to organize and host ICBEDC 2008. Your contribution and co-operation are of immeasurable value to us.

Thank you.

A handwritten signature in dark ink, featuring a large, stylized 'M' and 'R' that are connected and looped together.

Professor Ir. Mahyuddin Ramli

Message from the Conference Chairman, Organising Committee

Selamat datang, welcome to the 2nd International Conference on Built Environment in Developing Countries 2008 in Penang, Malaysia. This is the second time that an international gathering in the field of Built Environment is being held in Malaysia. After an overwhelming response to the first ICBEDC 2007 we are honoured to organize the second ICBEDC 2008.



The aim of this conference is to provide a platform for academics and researchers as well as practitioners to present and discuss papers regarding their research and to keep us abreast with the rapidly changing technology and challenges related to the built environment. More than 150 full papers will be presented and discussed. The introduction of refereed papers ensures that a high standard of papers is preserved for this conference. All papers will be edited and published as conference proceedings.

The theme of ICBEDC 2008 “Sustainable Built Environment: Bridging Theory and Practice”, is a reflection of what we here at the School of Housing, Building and Planning believe to be a relevant expression of the times that we live in. Sustainable development has become as late, a key cog in the daily grind of our lives. To paraphrase the United Nation’s Brundtland Commission, development and progress are certainly welcome and needed but never should they be at the expense of our children and the subsequent generations. Sustainable development may appear to be a vast and indistinct notion, but with the right approach and execution, it may soon become a norm that we may not be able to function effectively without.

We look forward to the excellent papers and active discussion of the key Built Environment issues in this conference. Finally, as chairman of the conference, I would like to express my sincere gratitude for all the cooperation given by the School of Housing, Building and Planning and the University and by those who have contributed to the successful planning and execution of this conference. We hope ICBEDC 2008 will continue to grow and contribute towards making this field recognized as a distinct body of knowledge.

Thank you.

A handwritten signature in black ink, consisting of stylized, overlapping loops and lines, positioned above a horizontal line.

Associate Professor Abu Hassan Abu Bakar

Message from the Conference Chief Editors

We would like to express our appreciation to the vice-chancellor, conference advisor, chairman and all members of the organising committee especially to their generous supports during the preparation and publication of this *Conference Programme and Abstracts*. The content of this book comprises conference full papers classified under four categories, which highlight interdisciplinary built environmental discussions and issues in the developing countries. These categories are Architecture and Urban Design (AR), Building Engineering (BE), Urban Planning, Tourism and Landscape (UP), and Construction Project Management (PM). Each category is managed by one editor specialised in his/her field. Assoc. Prof. Dr. Ahmad Sanusi Hassan (Head), Assoc. Prof. Ir. Dr. Abdul Naser Abdul Ghani, Assoc. Prof. Dr. Nurwati Badarulzaman and Assoc. Prof. Abdul Aziz Hussin are the chief editors who are responsible arranging all the related conference papers to the sub-themes for parallel sessions of the oral presentations in the conference programme and abstracts, and for compilation of the proceeding papers.

There are a total of 155 full papers in this conference. In Architecture and Urban Design category, it has 33 full papers. This category has 6 sub-themes which focus on urban design and studies, historic buildings and traditional architecture, and critical issues towards sustainable development. There are 27 papers to be presented and discussed in Building Engineering category. The focuses of the full papers are related to building construction and materials, sustainable technology, building safety and energy efficiency. The category of Urban Planning, Tourism and Landscape has 51 full papers. The discussions are focussed on housing, economy, urban governance, tourism, transportation, heritage revitalisation, landscape and sustainability, and place image and identity. Construction Project Management category has 44 full papers. The focuses of the discussions are on housing, professionalism, finance, economics, social issues and project management. In summary, there are more than 170 full papers submitted to the conference secretariat, but they are not included in the oral presentations either because of late submissions or due to not able to reach the standard of conference full papers.

All in all, we look forward to the excellent papers and active discussions from the participants presenting the built environmental issues at all of these categories in the parallel sessions. There are also ample opportunities to meet and network with colleagues and friends from many parts of the world throughout the conference.

Thank you

The Chief Editors