

ISBN 978-967-394-070-7

ICSAUD

ICWSAUD

icsaud2012.hbp.usm.my

3RD - 5TH MARCH

organised by

hbp
School of Housing, Building & Planning
School of Housing Building and Planning
Universiti Sains Malaysia, 11800, USM,
Penang, MALAYSIA

20  12
UNIVERSITI SAINS MALAYSIA

venue

BERJAYA PENANG
HOTEL MALAYSIA
Berjaya Penang Hotel - Malaysia
1-Stop Midlands Park, Burmah Road
10350 Georgetown, Penang, MALAYSIA

2nd INTERNATIONAL CONFERENCE-WORKSHOP ON SUSTAINABLE ARCHITECTURE AND URBAN DESIGN

"INTERVENTION: REACHING OUT TO THE BOTTOM BILLION"

PROGRAMME AND ABSTRACTS

PROCEEDINGS OF 2nd INTERNATIONAL CONFERENCE-WORKSHOP ON
**SUSTAINABLE ARCHITECTURE
AND URBAN DESIGN 2012**

“Intervention: Reaching Out for the Bottom Billion”



SCHOOL OF HOUSING, BUILDING AND PLANNING, USM
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Includes bibliographical references

Publisher: **SCHOOL OF HOUSING, BUILDING AND PLANNING, USM**
<http://www.hbp.usm.my>

Printed and bound in Malaysia by: Sinaran Bros. Sdn. Bhd.
Cover book Design by: Mohd Najib Mohd Salleh

ISBN:978-967-394-070-7

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**WELCOME MESSAGE FROM THE VICE CHANCELLOR
UNIVERSITI SAINS MALAYSIA**

It gives me the utmost pleasure in welcoming all of you to the 2nd International Conference-Workshop on Sustainable Architecture and Urban Design (ICWSAUD) 2012. The second edition of this bi-annual series of conferences comes at the heels of a truly successful pioneering endeavour in 2010, where the first conference had managed to congregate design professionals from the world over to address head on issues afflicting us as a global society. It is therefore heartening to see that this year's conference still begets the same diverse participation, interest and attention accorded to that maiden event.



The theme this year, '*Intervention: Reaching Out to the Bottom Billion*' is perhaps a true reflection of what our world is in dire need of, especially in these challenging times. There is supposedly an old Chinese curse that chides the condemned to '*live in interesting times*', and that time can be clearly seen to be at hand. Our world at present is facing numerous exigent obstacles, brought on by a global economic crisis that transcends race, religion or politics. One inevitable consequence of this prevalent predicament is the growing disparity between the haves and have-nots; the developed and the stagnant; or simply, those who are wealthy and those who are in poverty. As the world becomes a borderless melting pot, it is pertinent that a global solution be found, to mitigate and manage this problem before it escalates into an insurmountable task. There is a clear need to assist this 'bottom billion' and an effective intervention to halt this malady must certainly take place immediately.

Reaching out to this large group of indigent communities can be done in a number of ways. One of which, is through conferences and discourses such as this, as professionals and academics in the field of Architecture and Urban Design are best suited to offer practical and feasible solutions that may then be utilized as well as adopted on a global scale. By focusing on design and urban issues that centre on the disadvantaged, a more holistic and sustainable approach could be brokered in alleviating a majority of the problems faced by these communities. Universiti Sains Malaysia has long been a proponent and advocate of addressing the needs of the 'bottom billion' and therefore, this effort to organize this conference by the School of Housing, Building and Planning is no less than an underpinning attestation to our collective pursuit.

I applaud each of you for your part in making this conference a success and at the same time, wish everyone a delightful and memorable experience here in the beautiful island of Penang.

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

Thank you.

Professor Dato' Dr. Omar Osman

**MESSAGE FROM THE DEAN, SCHOOL OF HOUSING, BUILDING AND PLANNING
UNIVERSITI SAINS MALAYSIA**

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

Greetings to all participants of the 2nd International Conference-Workshop on Sustainable Architecture and Urban Design (ICWSAUD) 2012. As your gracious hosts, we are delighted to have all of you once again here in Penang to be part of a noble and altruistic attempt to exchange knowledge, experiences and ideas in sustainable architecture and urban design; all with the common aim of elevating our built environment to greater heights. The theme, *'Intervention: Reaching Out to the Bottom Billion'*, sets the tone of this conference as we seek to accommodate and aid those who are less fortunate.



It has been almost five years since Paul Collier first coined the now famous expression, 'the bottom billion'. Since then, the world population has reached 7 billion; 1 billion more than when Collier authored his book. Although certain measures were taken to remedy the affliction faced by this impoverished bottom billion, recent studies have shown that in fact, the world's poor now stands at 1.3 billion, with a geographic distribution in both middle income and low income countries. This only goes to show that poverty is not merely a problem for a specific group of nations, but rather it is a global endemic issue that needs all of our focus and attention. The School of Housing, Building and Planning in line with Universiti Sains Malaysia's commitment in serving the needs of the bottom billion as one of its key thrusts, has always encouraged research and academic endeavours that are immersed with the intent of aiding the deprived.

It is with this intent in mind that this conference is organized, as an avenue for researchers, academics and professionals within the corresponding fields to actively partake in discussions and debates with the ultimate objective of seeking to lessen the burden of our fellow man. Issues in architecture as well as urban aspects affect our societies and the populace at large in every facet of their lives and it is only befitting that these issues be given the due consideration they warrant. As evident by the number as well as the diversity of the accepted working papers in this conference, I humbly believe that we here are not alone in this journey towards ensuring a more balanced and universal provision of wealth, resources and facilities.

Participants of this conference have the chance to be involved in a truly gallant exercise to chart the way the built environment can be remodelled for the better, and I truly believe all of you will definitely strive to ensure ICWSAUD 2012 becomes a veritable success. I offer you my sincerest appreciation for all your commitment 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 and Planning to organize and host ICWSAUD 2012. Your contribution and co-operation are of immeasurable value to us.

Thank you

Professor Ir. Dr. Mahyuddin Ramli

MESSAGE FROM THE CONFERENCE CHAIRMAN

“*Selamat Datang!*” which means “Welcome!” to the 2nd International Conference-Workshop on Sustainable Architecture and Urban Design held from 3 to 5th March 2012 at Berjaya Hotel. We are happy to host you this conference in the city of George Town, Penang, a place which has marked as one of the important places in history of Malaysia. The city of George Town has been listed on the UNESCO World Heritage List since 2008. This city has developed over 500 years of trading and cultural exchanges between East and West in the Straits of Malacca. The influences of Asia and Europe have endowed this town with a multicultural heritage that is both tangible and intangible.



The conference addresses the theme “Sustainable Architecture and Urban Design Intervention: Reaching Out to the Bottom Billion”. Globalisation with all its positive effects however, has left the bottom billion behind. The United Nation Millennium Goal of eradicating poverty by halve; fights hunger and disease; and provision of basic amenities to the poor by 2015 requires aggressive and collaborative efforts from the world community for it to be successfully achieved. The conference showcases trends and practices in the development of sustainable architecture and urban design and set a platform for the fraternity to take up the moral challenges in addressing the bottom billion. The conference intends to highlight new ideas and fresh approaches to enhance the living standards of the bottom billion and find ways to articulate effective strategies to narrow the gap between the rich and the poor.

It is of major importance today to share professional and academic knowledge and expertise across the world working to improve the quality of process and physical place for the use of the urban and rural poor for a sustainable future. We are very pleased by the high quality of papers submitted by the conference presenters from all over the world which will be addressed in the oral presentations. Through these presentations, we hope to share our research interests and development, and to invite participations from researchers at other universities and institutions, and stakeholders interested in architecture and urban design to support our efforts in these contextual issues. The introduction of refereed full papers ensures that a high standard of full papers is preserved for this conference.

I would like to thank to our Advisory Committee, Organising Committee and Reviewers for their generous efforts and supports in making the 2nd ICWSAUD2012 a success. I also would like to extend my sincere gratitude for all the cooperation given by the School of Housing, Building and Planning and the University.

Thank you.

Assoc. Prof. Dr. Ahmad Sanusi Hassan

MESSAGE FROM THE CONFERENCE EDITORS

In the Name of Allah the Most Gracious and the Most Merciful. On behalf of the editorial committee, our warmest greetings and welcome to contributors and participants of the 2nd International Conference-Workshop on Sustainable Architecture and Urban Design, ICWSAUD2012. We pray the conference be successful as a platform for us to showcase trends and practices on the most up-to-date achievements from both academia and professionals, gathered under the tenet-umbrella of sustainability and the bottom billion.

The conference invites presenters to share their researches and experiences in orchestrating the environment to reach out to the urban and rural poor. Issues on the bottom billion should be our main concern and agenda apart from issues on climate change and global warming presented and discussed during our 1st conference in 2010. It is the conference's objective to alleviate the negative interaction between architecture and urban design with affordability, accessibility and comfort of the poor. The role of architecture and urban design should be finely tune to create an all-inclusive built environment. The contents of the conference highlight sensitivity and empathy among academia and professionals in the built environment towards the status of the bottom billion. Reflections on our past neglects in our pursuit for power and profits, on issues of the bottom billion should motivate us to contribute more. We should review the tangible role of design especially in countries with developing economy on grounds of thrifty financial constraints and a result of rapid growth of population. All these factors contribute towards the core principle of sustainable development expanding the design horizon to balance economic growth, social progress and environmental stewardship. ICWSAUD2012 will highlight and accentuate the role of architecture and urban design in addressing these issues. In line with the conference title, proceeding's abstracts are classified into two categories namely architecture and urban design. Each category is divided into themes, comprises articles pertaining issues relevant to the title of the category. We compiled all the accepted full papers from the two categories into a softcopy proceeding to provide you full access to the papers contributed in the conference. Quality written papers will be selected for journal publication.

Finally, we wish to extend our gratitude to the School of Housing, Building and Planning, HBP, and Universiti Sains Malaysia, USM for the full support in making the conference-workshop a success. We also wish all of us have a wonderful time during the conference with hopes to implement the delivered knowledge into action.

Thank you.

Wan Mariah Wan Harun
Chief Editor

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