Building Surveyors Conference 2009

5 September 2009 (Saturday)

Building a Green and Sustainable Future

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15th anniversary

THE HONG KONG INSTITUTE OF SURVEYORS
香港測量師學會
Building Surveying Division

CONFERENCE OBJECTIVE

Hong Kong Institute of Surveyors is one of the leading professional bodies in property development, construction, building maintenance and property management in Hong Kong and our members contribute our professional knowledge and expertise throughout the cycle of building development.

Nowadays, one of the important mission in exercising our professionalism is to inject Green elements into the planning, design ,construction, maintenance and management of building. The theme of Building Surveyors Conference 2009 – Building a Green and Sustainable Future has underlined our vision and mission to construct a green & enhanced living environment in Hong Kong.

MESSAGE FROM THE CHAIRMAN OF BUILDING SURVEYING DIVISION

Dear Fellow Members,

After the economic boom in Hong Kong in last century, terms like Green Buildings, Sustainable Development, Carbon Emission, Energy Audit are gaining popularity in the media. People in Hong Kong become more environmental conscientious. The Government has taken the lead to make Hong Kong Green and more sustainable through measures like publication of Building Energy Code and subsidization scheme to promote energy saving initiatives through subsidizing Energy-cum-carbon Audits and Energy Efficiency Improvement Projects. Moreover, negotiation with power companies is on going in order to reduce the carbon emission. Nowadays, the term 'Green' no longer merely means green colour or more plants and vegetation. Building Green and Sustainable means less carbon footprint in design and construction stage, less energy consumption during operation and less non-recyclable waste during disposal. Moreover, Green and Sustainable Building can now be graded through an assessment system which may involve environmental features to aid natural ventilation and lighting with less energy consumption and carbon footprint, better planning of estates with differential building heights and profile to prevent shielding effect to the neighbouring sites.

As Building Surveyor is one of the leading building professionals involved in development and maintenance of buildings, we have to acquire up to date knowledge on environmental aspects as these knowledge will become an integral part of our life and career.

The title of this years Building Surveyors' Conference is "Building a Green and Sustainable Future". We are pleased to have the Under Secretary for the Environment to be our keynote speaker, other Government Officials like the Assistant Director from the Electrical and Mechanical Services Department, Assistant Director for the Director of Environmental Protection who will share with us about the Government's initiatives on Building Energy Codes and related legislatures; Chairman of the Professional Green Building Council will compare the popular grading systems of Green Buildings; Professor Jim from the University of Hong Kong who is an expert in tree and landscape management will tell us his views and experience; Director of Ove Arup & Partners will share with us about his experience in building green in mainland China, Business Manager from China Light and Power will inform us how to minimize energy consumption in existing buildings. Last but not the least, our fellow member, Dr M.W. Chan will tell us his effort in building green during planning stage of new development.

I am sure after attending this year Building Surveyors' Conference, members could attain better understanding on building green and sustainable future and widen your scope on environmental aspects related to construction industry so that you can be better equipped to tackle the coming challenges.

Kenneth YUN
Chairman of Building Surveying Division
The Hong Kong Institute of Surveyors

PROGRAMME

Time	Topics of Speech	Speakers
0830-0900	Registration	
0900-0905	Welcome Speech	**Mr. Francis Leung** President, The Hong Kong Institute of Surveyors
0905-0935	Keynote Remarks	**Dr. Kitty Poon** Under Secretary for the Environment, Environment Bureau, HKSAR
0935-1005	Proposal on the Mandatory Implementation of the Building Energy Codes	**Mr. Alfred W.H. Sit** Assistant Director, Electrical and Mechanical Services Department, HKSAR
1005-1035	Break	
1035-1105	BEAM or LEED? Green or Greed?	**Mr. K.S. Wong** Chairman, Professional Green Building Council
1105-1135	Build Green – the Hong Kong Challenge	**Mr. C.W. Tse** Assistant Director (Environmental Assessment) for Director of Environmental Protection
1135-1205	Greening Roofs for Sustainable Development of Compact Tropical Cities	**Prof. C.Y. Jim, PhD, JP** Chair Professor, Department of Geography, The University of Hong Kong
1205-1220	Q & A	
1220-1400	Lunch	
1400-1430	Planning for Sustainability – a Project Stakeholder's Perspective	**Dr. M.W. Chan** Vice President, Projects and Facilities, Hong Kong Science and Technology Parks Corporation
1430-1500	Case Studies of Green Building Projects in China	**Dr. Raymond Yau** Director, Ove Arup & Partners Hong Kong Ltd.
1500-1530	Break	
1530-1600	Implementation of Energy Saving measures in Existing Buildings	**Ir. Ian Y. L. Lee** Business Development Manager, Energy Services, CLP Engineering Ltd.
1600-1630	Q & A	
1630-1635	Closing Remarks	**Mr. Kenneth Yun** Chairman, Building Surveying Division, The Hong Kong Institute of Surveyors
1635	End of Conference	

KEYNOTE SPEAKER

Dr. Kitty Poon

Under Secretary for the Environment, Environment Bureau, HKSAR

Dr. Kitty Poon holds a Bachelor of Arts Degree from Rutgers University, a Master Degree in International Affairs from the Columbia University and a Ph.D. in Government and Public Administration from the Chinese University of Hong Kong. Before joining the Government of the Hong Kong Special Administrative Region, Dr. Poon had been the Assistant Professor of the Department of Applied Social Sciences in the Hong Kong Polytechnic University.

SPEAKERS

Mr. Alfred W.H. Sit

Assistant Director, Electrical and Mechanical Services Department, HKSAR

Mr. Alfred W. H. Sit is an Assistant Director of the Electrical & Mechanical Services Department (EMSD) of the HKSAR Government and now serves as the head of its Energy Efficiency Office which is responsible for planning and implementation of the energy efficiency and conservation programme of the Government.

Mr. Sit has been working in the electrical and mechanical engineering field for more than 25 years. Before he took up his current post at the Energy Efficiency Office in 2007, he has served in various government positions and has been responsible for the design, operation and maintenance of various government facilities as well as drafting and enforcement of legislation.

He is active in the activities of the learned societies. He has served as the President of the Hong Kong Institute of Facility Management (HKIFM), the Chairman of the Biomedical Division and the Honorary Secretary of the Nuclear Division of the Hong Kong Institution of Engineers (HKIE). He is now a Fellow member of the HKIE and HKIFM.

Proposal on the Mandatory Implementation of the Building Energy Codes

The Hong Kong SAR Government has put forward many initiatives in promoting energy efficiency and conservation in Hong Kong. Among these initiatives, the proposed mandatory implementation of the building energy codes has its focus on promoting energy efficiency in buildings, which alone consumed 89 % of the total electricity consumed in the Hong Kong territory. At the public consultation which concluded in 2008, the proposed mandatory scheme received strong public support. The Government is now drafting the legislation and plans to introduce the proposed legislation to the Legislative Council by end 2009.

The speech will cover the background of the proposed scheme, the types of buildings and engineering installations to be controlled by the proposed legislation and its expected benefits to the community.

Mr. K.S. Wong
Chairman, Professional Green Building Council

Mr. K. S. Wong, an architect, chairs the Professional Green Building Council (PGBC). He is a founding council member of PGBC as well as the founding chairman of the Committee on Environment & Sustainable Development, the Hong Kong Institute of Architects (HKIA). With more than 20-year experience in architecture, Mr. Wong is now Director & Director of Sustainable Design in Ronald Lu & Partners (Hong Kong) Ltd., integrating the principles of sustainable design in master planning, new construction, alteration & addition works as well as research projects. Recent projects include the sustainability master planning study for Hong Kong Science Park Phase 3, Centre for Healthy Life in Tuen Mun Hospital, Transformation of Jockey Club Environmental Building in Kowloon Tong, and Consultancy Study for Buildings Department on building design that supports sustainable urban living space in Hong Kong (currently under public engagement led by the Council for Sustainable Development). Mr. Wong also teaches in various local universities on an adjunct basis. Besides PGBC, Mr. Wong is Vice-President of HKIA, Exco Member of BEAM Society, and founding committee member of the forthcoming Hong Kong Green Building Council.

BEAM or LEED? Green or Greed?

BEAM, BREEAM, CASBEE, GREEN MARK, GREEN STAR, LEED and the like are buzzwords nowadays. Why are they important? What do they really mean? How can they really help transform our mainstream practice and market towards sustainability? When facing our critical environmental challenges locally and globally, buildings are problems as well as potential solutions. In Hong Kong, the Development Bureau and the Environment Bureau jointly issued a recent technical circular on 23 April 2009 about "Green Government Buildings", setting out *"all new government buildings with construction floor area of more than 10,000 square metres should aim to obtain the second highest grade or above under an internationally or locally recognised building environmental assessment system such as the Leadership in Energy and Environmental Design Green Building Rating System (LEED) or Hong Kong Building Environmental Assessment Method (BEAM), and in due course the assessment system to be developed by the Hong Kong Green Building Council which will soon be established."* What is the real meaning and significance of this government circular? Building professionals have the pivotal role in this critical turning point. First of all, we have to transform ourselves – through understanding about these why, what and how of green buildings. Green buildings are about people and less is more. Is it a matter of green or greed?

SPEAKERS

Mr. C.W. Tse

Assistant Director (Environmental Assessment) for Director of Environmental Protection

Mr. Tse has 30 years of experience in protecting the environment. He started his career in 1979 with the Air Pollution Control Division of the Labour Department of the Hong Kong Government, dealing with pollution from various local industries. He latter joined the Environmental Protection Department in 1986. With EPD, he has taken up a number of posts and obtained experiences in a wide range of responsibilities including enforcement of pollution control laws, environmental modelling, EIA management, environmental planning as well as preparation of various legislative and policy proposals. While managing the air quality programme, he participated in the setting up of the joint air quality monitoring network and the development of the first regional air quality management plan with Guangdong. He is now an assistant director of the Environmental Protection Department managing the EIA and Noise programmes.

Build Green – the Hong Kong Challenge

The environment issue started with controlling nuisances and pollution caused by industrial activities. It has evolved to achieve a broader objective of protecting the environment and maintaining a balanced ecology in which we all live. Nowadays the world is moving towards a new concept of sustainable development, which is the goal of ensuring that our future generations will continue to survive and to survive well in terms of living quality and in good harmony with our mother earth.

Given the goal of sustainable development, building a green and sustainable future is the common challenge for all cities. More green space, efficient use of energy, low carbon development, reduced waste generation as well as use of recycled and green materials have been identified to be the immediate tasks. Many cities are taking up the challenge and working on deriving the required measures and solutions. Among the world cities, Hong Kong stands out due to our unmatchable density as well as rate of development and redevelopment. Given our unique feature, many measures and solutions adopted in other cities may not work in here. The annoying traffic noise problem is a case in point. It is necessary for Hong Kong, and the professionals in this city, to develop our own solutions and standards.

Prof. C.Y. Jim, PhD, JP
Chair Professor, Department of Geography, The University of Hong Kong

Professor Jim obtained his BA degree with First Class Honours in geography and geology from the University of Hong Kong, and PhD in agricultural soil science from the University of Reading under the aegis of a Commonwealth Scholarship. He then studied at the US Geological Survey in Golden (Colorado) for a Certificate in Hydrology. He is the Chair Professor in Geography at the University of Hong Kong, and served in the past as Head of Department of Geography and Dean of Faculty of Arts. His core research areas include urban forestry, urban greening, urban ecology, soil science, and urban environmental planning and management with an interdisciplinary approach, an emphasis on compact and south cities, and a geographical focus on Hong Kong and other Chinese cities. Thus far he has accumulated 28 years of teaching and research experience, with a major focus on the conceptual and applied studies of urban greening in Hong Kong and other south China cities. He has published over 200 scientific papers and books, and is recognized both internationally and locally as a leading researcher and advocate in urban ecology and urban forestry. Besides scholarly work, Professor Jim is active in community services, taking up chairmanship and membership of a number of government advisory bodies and NGOs. Besides teaching and research, he has relentlessly promoted urban greening in Hong Kong, including tree planting and conservation, green roof and vertical greening.

Greening Roofs for Sustainable Development of Compact Tropical Cities

As an exceptionally compact city, Hong Kong attempts to adopt the sustainable development mode. Urban greening offers a feasible way to attain environmental sustainability. With seven million population concentrated largely in 200 km^2 of land, the urban public open space provision at merely 3 m^2/person is usually low. High-rise buildings with barren flat rooftops and facades are seldom employed to introduce nature into the vertical dimension. Numerous hardly serve any useful purpose. Besides providing outdoor amenity and recreational spaces, green roofs can bring significant cooling and amelioration of the urban heat island effect especially for the tropical city. The scientific aspects of establishment and the environmental benefits need to be ascertained in the context of the humid-tropical regime. An extensive green roof was retrofitted on a four-storey building at the University of Hong Kong in 2006, denoting the first research green roof in the city. It covers 240 m^2 of four plots planted respectively with turfgrass (Zoysia tenuifolia, Korean Velvet Grass), groundcover vine (Arachis pintoi, Perennial Peanut) and shrub (Duranta repens, Golden Dewdrops), plus a barren control plot. Environmental monitoring equipments with data loggers were installed at the plots. The objectives of the study were to evaluate: (1) growth performance of the three vegetation growth forms at the rooftop habitat; (2) evaporative cooling of air temperature; (3) surface temperature reduction; (4) thermal insulation effect; and (5) heat flux to the indoor space below the roof. Significant reduction in surface and below green roof temperatures and energy conservation were recorded, with about 15°C drop at summer midday for turfgrass and groundcover, and more so for shrub. Top floor indoor temperature was reduced by about 2°C under the vegetated plots. The research offered valuable findings and practical experience to establish and maintain extensive green roofs using different vegetation types.

Keywords: green roof; environmental monitoring; environmental benefits; urban heat island effect, compact city; Hong Kong.

SPEAKERS

Dr. M.W. Chan

Vice President, Projects and Facilities, Hong Kong Science and Technology Parks Corporation

Dr. Chan Man Wai is currently Vice President (Projects & Facilities) of the Hong Kong Science & Technology Parks Corporation (HKSTP). He oversees the overall infra-structure development and facility management of the 22ha Science Park of Hong Kong as well as 3 industrial estates at Tai Po, Yuen Long and Tseung Kwan O (totaling 218 ha). He is also the Director of InnoCentre, another important asset of HKSTP. Dr. Chan has extensive experience in project and facility management in Hong Kong, Mainland and overseas. His project and facility management portfolio include university campuses, hospitals, laboratories, as well as industrial, residential and commercial premises. Dr. Chan is professionally qualified in building surveying, quantity surveying and facility management. Academically, he holds a BSc in Building Surveying, MSc. in Construction Project Management, MIPA in international and public affairs and a PhD in project finance. He is a council member of the Professional Green Building Council (PGBC) and the founding president of the Hong Kong Institute of Facility Management (HKIFM).

Planning for Sustainability – a Project Stakeholder's Perspective

"Going for green" or sustainability in building projects implementation is a global trend that no current project stakeholders can ignore. Whether this is a pure slogan or a genuine corporate social responsibility response can be debatable but this cultural and technological sea change can have immense implication for generations to come. The presentation will survey the real impact of sustainable design and its implementation in construction project. The Hong Kong Science Park sustainability initiative is used as a case study for illustrating project stakeholder's perspective on this macro mission.

Dr. Raymond Yau

Director, Ove Arup & Partners Hong Kong Ltd.

Raymond Yau, PhD, CEng, FCIBSE, MIMechE, MASHRAE, LEED™ AP, FHKIE, RPE, is Arup Fellow, Director of Arup Hong Kong. He is a building services engineer and building physicist who specializes in integrated design of sustainable and environmental responsive buildings.

He was one of the pioneers in the UK in mid eighties who adopted the use of Computational Fluid Dynamics and Dynamic Thermal Modelling techniques in built environment applications. He then pioneered the use of such advanced simulation techniques to Hong Kong in early nineties in complex indoor environment and lately developed advanced turbulence modeling for external air ventilation assessment for high rise and high density urban environment.

He was Arup's project director responsible for leading several pivotal sustainable consulting studies for the HKSAR Government, which have had a strong influence on the development of sustainability in Hong Kong and put Arup in the lead on formulating the roadmap for the local sustainability agenda. These projects include drafting a Comprehensive Environmental Performance Assessment Scheme (CEPAS) for buildings in Hong Kong, similar to the BREEAM in the UK and LEED™ in the USA, and establishing the life-cycle assessment and database model for building construction in Hong Kong. He is Core Co-investigator of HKSAR Government Study on Urban Climatic Map and Standard for Air Ventilation Assessment.

He led the China's Hangzhou Xihu Tiandi Phase 2 Development to obtain the world's first pre-certified LEED – Core & Shell green building label ever at the highest platinum level of performance. He was leading the sustainable development and energy supply strategies for the Shanghai Dongtan Eco-City Demonstrator project.

Many of his projects have won Green Building Awards or Sustainability Recognition such as MTR Disney Resort Line Sunny Bay Station, Hong Kong Public Housing on Microclimate Research and LCA/LCC Sustainable Tools for Buildings in Hong Kong.

He is currently Regional Vice-Chair on Technology Transfer of ASHRAE Region XIII. He is Adjunct Associate Professor at Department of Architecture, The Chinese University of Hong Kong. He frequently lectures to students at universities on Sustainable Architecture and Buildings.

Case Studies of Green Building Projects in China

The success of the design and construction of sustainable green buildings will depend on the vision, commitment and contribution of all the stakeholders including the developer; design professionals – architects, engineers and other specialists, the builders and finally the end users of buildings. Lacking participation of anyone of them in the entire design, construction and operation stages will make the pathway to sustainability difficult, if not unachievable. Designers will go beyond their usual bounds and professions and understand other professionals' real concern and design issues, aiming to develop an inter-disciplinary and integrated design product.

One remarkable building in China that has embraced such unique characteristics and engaged the design and construction processes in an integrated manner to a different extent is the Parkview Green project currently under construction in Beijing.

The speaker will share about the integrated design approach of Beijing Parkview Green project. In particular, the presentation will focus on how the sustainability agenda was addressed, and adopted at the outset, throughout the design stages and finally delivered at the construction stage on site. Details of sustainable features of the project will be highlighted. Furthermore, the roles and contribution of all the stakeholders in the project will be discussed.

SPEAKERS

Ir. Ian Y. L. Lee

Business Development Manager, Energy Services, CLP Engineering Ltd.

Ir. Ian Lee graduated from the Hong Kong Polytechnic University in 1990 and joined the Building Services Consultant firm, Parsons Brinckerhoff (Asia) Ltd., for 13 years. During which Ir. Lee has been involved in many major E&M projects including the Hong Kong Science and Technology Park, the Chinese University of Hong Kong, the University of Hong Kong, the Kwong Wah Hospital, the Haven of Hope Hospital, as well as many energy projects for the Government and various universities like the Wanchai Towers, the Hong Kong Polytechnic University, etc. Ir. Lee got his MBA in 1996 and joined CLP Power in 2002. Recently he joined the CLP Engineering Ltd and started the energy services business both in Hong Kong and southern China. Ir. Lee is also actively participating in the learning society activities and he is the Social Secretary of the Chartered Institution of the Building Services Engineering (CIBSE). During his own time, Ir. Lee also helps the young generation as mentors of the IVE, and part-time lecturer of the Hong Kong Polytechnic University, the Victoria University and the Chinese University of Hong Kong - School of Continuous Studies.

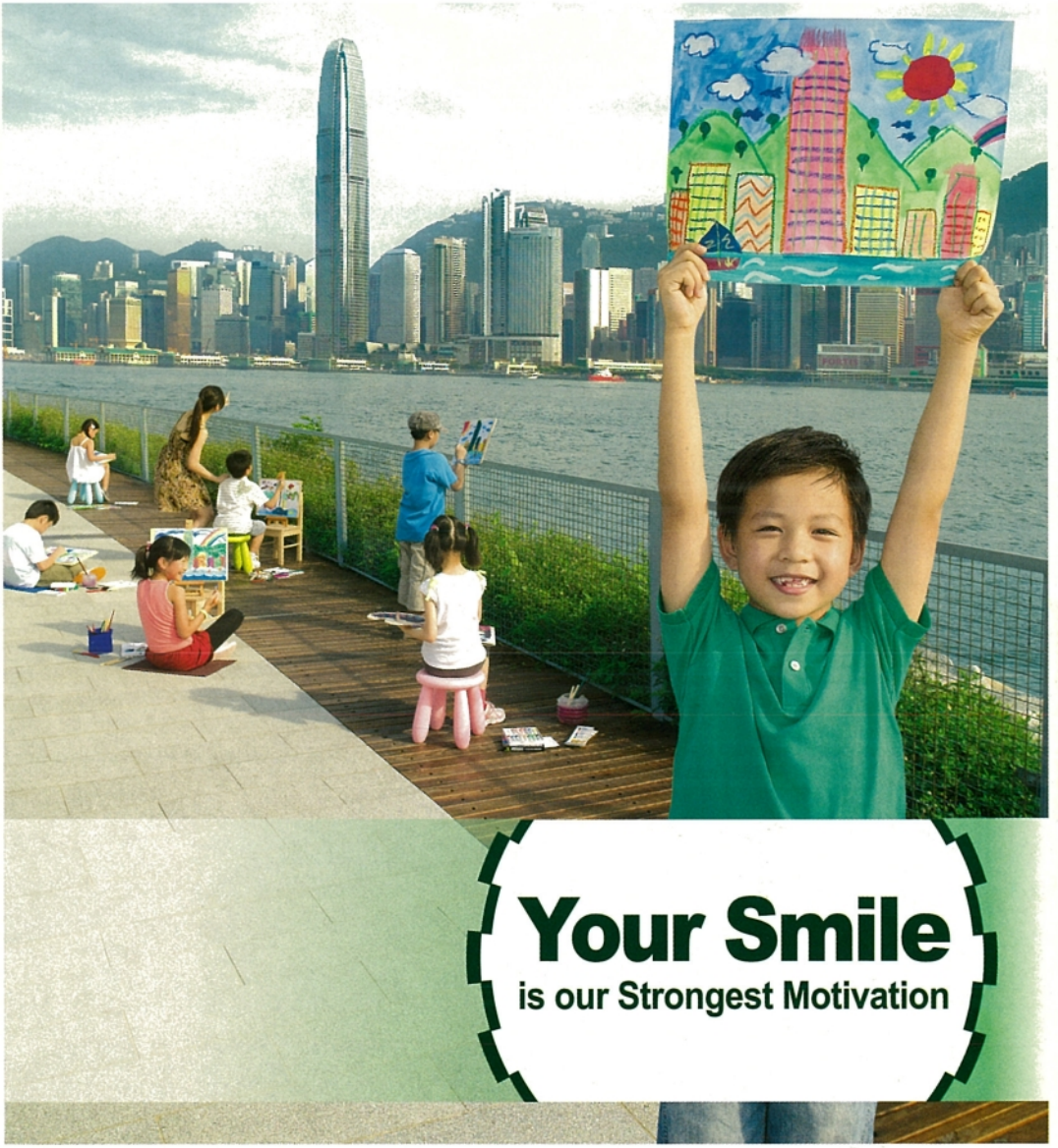
Implementation of Energy Saving measures in Existing Buildings

Nowadays, building owners, operators, consultants and contractors are well aware of energy services. As energy cost becoming higher and higher, they strive to save energy in their involved buildings. Unlike the past, they are no longer concentrated only on housekeeping and easy-to-do energy savings items like switching off of AC and lighting manually or replacing fluorescent tubes. With the help of new technology, they are able to choose from a range of Energy Management Opportunities (EMOs) which could bring along significant savings of 20 to 40% normally.

Among those EMOs, the most popular ones that are welcomed by them are Heat Pumps, Chiller Replacement, lighting retrofit, induction cooking, and solar hot water system.

Government and utilities are also helping the public to carry out energy and carbon audits. The building energy funds offered by the Government, the free energy audits and energy efficiency free-interest loan scheme are examples on that. They are now more concerned on where the energy goes and hence they would ask for energy audit and carbon audit so that they could understand how much they are spending and how they are affecting the environment.

As renewable energy and sustainability design becomes a hot topic nowadays, more and more pilot projects on wind power, solar power, thermal storage, green roof, green wall, high efficiency chillers and heat pumps, etc have also been carried out.



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