SCAL Environment Sustainability Conference 2015
“Going Green, What Does It Mean”
27 October 2015  8:30am - 4:45pm

The Singapore Contractors Association and SCAL Academy are pleased to organize a One-day Conference on Environment Sustainability with the theme, “Going Green, What Does it Mean”. The conference will highlight topics on green building recent developments, the roles of contractors to create a smart and green building, fire safety in green construction and on sustainable designs and practices to improve energy efficiency. The conference will end with a guided tour of NTU’s new learning hub @ The Hive.

**Objective**
To Promote Awareness and Encourage Contractors and Industry Players to go for Sustainable Construction to Minimise Environment Impacts and Increase Economic Sustainability of Businesses.

**Target Audience**
All Construction Practitioners

**Topics**

**Smart and Green Buildings - The Role of Contractors**
by Prof Sekhar Kondepudi, Associate Professor
Smart Buildings & Smart Cities, Department of Buildings, School of Design & Environment, National University of Singapore

**Life Cycle Cost Analysis Model for Sustainable Buildings**
by Prof Tiong Lee Kong, Robert, Associate Professor, School of Civil and Environmental Engineering, Deputy Director, Centre for Infrastructure Systems, Nanyang Technological University and Dr Mehgdad Attarzadeh, Research Fellow, School of Civil and Environmental Engineering, Centre for Infrastructure Systems, Nanyang Technological University

**How Sustainability Contributes to Resilient and Smart Cities : A QS Perspective**
by Mr Seah Hsu-Min, Eugene, Country Head & City Executive, Arcadis Singapore & Group Managing Director, Langdon & Seah Singapore Pte Ltd

**Going Green with Sustainable Construction via Green Mark**
by Mr Low Giau Leong, Senior Manager, Centre for Sustainable Buildings & Construction, Building and Construction Authority

**Going Green means Going Safe Too!**
by Mr Chan Yew Kwong, Director (Occupational Safety & Health Inspectorate), Occupational Safety & Health Division, Ministry of Manpower

**Green Mark Champion (Sharing on Sustainable Practices and Success Story on NTU Learning Hub)**
by Er. Tong Kok Kwang, Project Director and Principal Mechanical Engineer, Office of Development & Facilities Management, Nanyang Technological University

**HIGHLIGHTS**

**Guided Tour of The Hive**
Singapore’s Latest Architectural Icon
27 October 2015
8:30am - 4:45pm
Nanyang Technological University
School of Humanities and Social Science Auditorium
Nanyang Drive
Singapore 637332

**Fees (Inclusive of GST):**
SCAL Members — S$107.00
CIJC Members — S$181.90
Non-Members — S$214.00
Students — S$53.50

Enquiries:
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weixuan@scal.com.sg
elene@scal.com.sg

**Organised by:**
The Singapore Contractors Association Ltd
SCAL Academy Pte Ltd

Venue Sponsored By:
## SCAL Environment Sustainability Conference 2015

**“Going Green, What Does It Mean”**

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<table>
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<tr>
<th>Time</th>
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<tr>
<td>8.30am</td>
<td>Registration</td>
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<tr>
<td>9.20am</td>
<td><strong>Welcome Address</strong> by Mr Kenneth Loo, President, SCAL</td>
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| 9.30am     | **Keynote Address**  
*by Guest of Honour*                                                   |
| 9.40am     | **Smart and Green Buildings - The Role of Contractors**  
*by Prof Sekhar Kondepudi, Associate Professor - Smart Buildings & Smart Cities, Department of Buildings, School of Design & Environment, National University of Singapore* |
| 10.15am    | **Tea Break**                                                          |
| 10.45am    | **Life Cycle Cost Analysis Model for Sustainable Buildings**  
*by Prof Tiong Lee Kong, Robert, Associate Professor, School of Civil and Environmental Engineering, Deputy Director, Centre for Infrastructure Systems, Nanyang Technological University  
and Dr Meghdad Attarzadeh, Research Fellow, School of Civil and Environmental Engineering, Centre for Infrastructure Systems, Nanyang Technological University* |
| 11.15am    | **How Sustainability Contributes to Resilient and Smart Cities : A QS Perspective**  
*by Mr Seah Hsiao-Min, Eugene, Country Head & City Executive, Arcadis Singapore & Group Managing Director, Langdon & Seah Singapore Pte Ltd* |
| 11.45am    | **Question & Answer**                                                  |
| 12.30am    | **Lunch**                                                              |
| 1.30pm     | **Going Green with Sustainable Construction via Green Mark**  
*by Mr Low Giou Leong, Senior Manager, Centre for Sustainable Buildings & Construction, Building and Construction Authority* |
| 2.00pm     | **Going Green means Going Safe too!**  
*by Mr Chan Yew Kwong, Director (Occupational Safety & Health Inspectorate), Occupational Safety & Health Division . Ministry of Manpower* |
| 2.30pm     | **Tea Break**                                                          |
| 3.00pm     | **Green Mark Champion (Sharing on Sustainable Practices and Success Story on NTU learning hub @ The Hive)**  
*by Er. Tong Kok Kwang, Project Director and Principal Mechanical Engineer, Office of Development & Facilities Management, Nanyang Technological University* |
| 3.30pm     | **Question & Answer**                                                  |
| 4.15pm     | **Guided Site Tour to NTU new learning hub @ The Hive**                |
| 4.45pm     | **End**                                                                |
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Synopsis and Speaker’s Profile:

**Smart and Green Buildings - The Role of Contractors**
The trends for sustainability, energy efficiency and data in building sector will be presented, followed by a discussion of the typical “traditional” systems in a building. The need for a “smart” building and its relationship to green and sustainability will be presented along with are the things to consider when building “Smart and Green”. Finally a wrap up looking at future / next generation technologies.

**Prof Sekhar Kondepudi**  
Associate Professor - Smart Buildings & Smart Cities, Department of Buildings, School of Design & Environment, National University of Singapore

Dr. Kondepudi has 25+ years of global business and product experience in a variety of technology verticals including Smart Cities, Smart Buildings and Internet of Things (IoT). Currently an Associate Professor of Smart Buildings and Smart Cities at the National University of Singapore, he directs the Smart Cities, Smart Buildings and IoT Lab @ NUS. He is active in providing strategic advisory and consulting services to both public (BCA, NEA, ICCS in Singapore) and private sectors (Fortune 500 to Start-Ups) related to Smart Cities, Internet of Things (IoT) and Energy Efficiency. He is also a Vice-Chair for the Focus Group on Smart Sustainable Cities at the International Telecommunications Union (ITU), a specialized agency of the United Nations.

**Life Cycle Cost Analysis Model for Sustainable Buildings**
Generally, construction cost is the main cost factor in buildings development and is often set to the minimum, which does not necessarily improve the life cycle performance of buildings. However, a higher construction cost might decrease total life cycle cost (LCC). It is important, therefore, to show in the early stage of design phase the relationship between design choices/options and the resulting life cycle cost. Clearly, there are significant differences between sustainable and non-sustainable buildings from the life cycle perspective. The main differences are the life of a building and the lack of industrialisation/automation in the building process, especially during construction. These factors make calculating LCC for a building difficult early in the design process. LCC analysis is used for sustainable buildings construction to optimize overall life cycle cost. This talk presents a LCC analysis model for sustainable buildings. It offers a framework of economic/financial methods for LCC analysis, the primary data which are required to carry out a LCC analysis and discusses the risks and uncertainties modelling and evaluation and also the pros and cons in the application of life cycle costing.

**Prof Tiong Lee Kong, Robert**  
Associate Professor, School of Civil and Environmental Engineering, Deputy Director, Centre for Infrastructure Systems, Nanyang Technological University

Dr Robert graduated in 1981 from University of Glasgow with First Class Honours in Civil Engineering with specialization in management. He obtained his M.Eng on Construction Engineering & Management, from University of California, Berkeley in 1987 and his PhD in Civil Engineering in 1994 from NTU. He is a Professional Engineer in Singapore since 1990 and a Council member of the Singapore branch of the London-based International Project Finance Association and he is also a member of the BCA pro-tem Committee for BIM Centre of Excellence.

Dr Robert has published extensively including being the co-author of book chapter “Productivity through Management Control – Case: The UOB Plaza” in the Singapore Productivity Case Book, a joint publication between NTU and the former National Productivity Board, Singapore. His Research interests have focussed on Construction Project Management, Risk Management, Sustainability, Life Cycle Analysis and Performance evaluation of Infrastructure and Construction Projects”. He has worked on the BIM projects with HDB. His latest BIM project was about the development a standard set of parametric BIM components generated for key HDB precast elements in order to shorten the precast shop drawings production and approval process. The project also signified the steps that were taken in order to streamline the precast shop drawing production process for the purpose of achieving lean construction to further identify the constraints in the present workflow and propose a new improved workflow that would address the prevailing issues.

**Dr Meghdad Attarzadeh**  
Research Fellow, School of Civil and Environmental Engineering, Centre for Infrastructure Systems, Nanyang Technological University

Dr Meghdad Attarzadeh obtained his PhD in Civil and Environmental Engineering, with specialization in Construction Engineering and Management, from National University of Singapore (NUS) in 2014. His BSc. (Civil and Environmental Engineering) and MSc. (Construction Engineering and Management) are both awarded by Amir Kabir University of Technology (AUT), Tehran, Iran. He has more than 10 years’ professional experiences, including teaching and research in the field of Construction Engineering and Management. Currently, his research interests have focussed on Emerging Construction Technologies, Life Cycle Assessment and Analysis, Costs Modelling, Non-Traditional Uncertainty and Risk Modelling, and Decision Making under Uncertainty and Risk. He has authored over 10 technical reports and papers in various proceedings and journals on Construction Engineering and Project Management, etc.

He has worked on the BIM projects with HDB and BCA. The latest BIM project was about the development a standard set of parametric BIM components generated for key HDB precast elements in order to shorten the precast shop drawings production and approval process. The project also signified the steps that were taken in order to streamline the precast shop drawing production process for the purpose of achieving lean construction to further identify the constraints in the present workflow and propose a new improved workflow that would address the prevailing issues.
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Synopsis and Speaker’s Profile:

How Sustainability Contributes to Resilient and Smart Cities: A QS Perspective

The concept of resilient and smart cities revolves around the need to pull all sectors of the economy together to innovate and create solutions that bring about better liveability and greater business opportunities in an environment today that faces critical challenges on environment, economy and quality of life. This resonates very much with the concept of sustainable development and the ethos of the triple bottom line. Underlying the main driver of each of this three concept is the push to future-proof our own existence, as a nation or city or even assets.

Mr Seah Hsiu-Min, Eugene
Country Head & City Executive, Arcadis Singapore & Group Managing Director, Langdon & Seah Singapore Pte Ltd

Eugene is the ARCADIS SG Country Head and the Singapore City Executive. He is also the Group Managing Director of Langdon & Seah Singapore Pte Ltd and the representative in the Sustainability Group. He leads the drive in BIM, Contract Administration and Dispute Management and is involved in projects, getting value and quality services to his clients and to the project team. His interest includes sustainable economics, green approaches, BIM with the views of project efficacy, Value Management, Risk Management, Sustainability Management, Law and Contracts, Information Technology in Construction as well as Project Management. He conducts lectures on Green Issues in Singapore and overseas. Eugene’s experience in projects covers most building typologies, including mix development, civil and municipal infrastructure and specialist buildings. His philosophy is to live with passion, work hard and pray hard. He enjoys working with people and takes challenges positively.

Going Green with Sustainable Construction via Green Mark

The speaker will share about going green from the perspective of legislations/policies under the new Green Mark (GM) scheme, GM 2015 New Buildings (Non-Residential). He will share more in depth particularly on the section of Resource Stewardship which is relevant to sustainable construction, how the design process can facilitate sustainability at the early project stages, where there is the greatest opportunity for low cost, high reward options to be implemented. The areas he would cover include some current trends in the building and construction industry, the thinking that led to the key changes behind the related criteria and the relevance of the changes to the 3rd Green Building Masterplan.

Mr Low Giau Leong
Senior Manager, Centre for Sustainable Buildings & Construction, Building and Construction Authority

Mr Low Giau Leong graduated from NTU with a Degree in Civil Engineering. Over the past 20 years of his career, he has worked in research projects of various nature, including purpose-made cements and concrete, waste water reclamation, concrete and wood waste recycling. Although he is now more involved in policy development work, he has been actively involved in various industry projects such as the use of recycled concrete aggregates in Samwoh’s Eco-green building and the study titled “Recycled and Secondary Aggregates (RSA) for use in Construction: A State-of-the-Art Review”. He is currently a member of the Innovation in Building and Construction (CIB) Working Commission, W115 (Construction Materials Stewardship). He also leads the Green Mark Version 2015 Sustainable Construction and Carbon Workgroup.

Giau Leong has presented and published several technical and policy papers in international conferences and engineering journals. His paper “Singapore’s Journey Towards Zero Landfill” was among the few best papers selected by the Sustainable Buildings 2013 (Singapore) conference organiser to be presented at Barcelona’s World Sustainable Building (WSB) 2014 Conference.
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Synopsis and Speaker’s Profile:

Going Green means Going Safe too!
Singapore’s greening efforts as a Garden City are well known. Beyond plants and trees, we have extended our greening efforts to buildings, not just through vertical greening. We are making our buildings environmentally sustainable, healthier and less carbon intensive. Green buildings are built by and occupied by people. The United States’ Green Building Council defines green buildings as structures that have significantly reduced or eliminated negative impacts on the environment and the occupants. Construction workers are the first people to go onto the building’s worksite and hence the earliest occupants in the initial lifecycle stage of a green building. Construction workers will also maintain, repair, and decommission a green building throughout its lifecycle. As such, green design and construction must also benefit the health and well-being of these construction workers. For green buildings to be considered truly sustainable, construction safety and health concepts must be integrated into upstream design considerations. This paper seeks to share on the safety and health risks introduced by green design and how the application of “Design for Safety” at the design stage can eliminate or mitigate these risks.

Mr Chan Yew Kwong
Director (Occupational Safety & Health Inspectorate), Occupational Safety & Health Division, Ministry of Manpower

Yew Kwong is a Deputy Commissioner for Workplace safety and Health. He is currently the Director of Occupational Safety & Health (OSH) Inspectorate in the Ministry of Manpower’s Occupational Safety & Health Division. As Director, he plans and oversees the strategies, programmes and activities of the OSH Inspectorate in the key areas of regulatory enforcement and surveillance, and ensures the effective implementation of OSH standards at the workplaces.

With the Ministry of Manpower for about 31 years, his vast working experience covers inspection & auditing of worksites, shipyards, chemical plants and statutory equipment like cranes and pressurised equipment, investigations into fatal/serious accidents and dangerous occurrences, development of OSH standards, guidance materials and training courses. He previously held the position of Director of Industry Capability Building in the WSH Council for about 2 years, during which he was responsible for the national WSH competency framework and capability building efforts in organisations and individuals.

Green Mark Champion (Sharing on Sustainable Practices and Success Story on NTU Learning Hub)
Under the Nanyang Eco Campus Initiative, NTU has set out to save 35% of Energy, Water and Waste Reduction. This is a very challenging target, difficult but yet achievable. Attaining Green Champion award is one of the milestone, NTU is targeting to attain Green Champion Award by next year. To use the current common and tested technologies in building it will near impossible to meet the targets set out. Hence, NTU need to adopted new cutting edge systems and designs some of which NTU have been successfully tested and implemented in the new and existing buildings in large scale. NTU will be glad to share the know-how and experiences with all interested parties and eventually make the world more sustainable. The Hive, a newly completed building will be used as an example to demonstrate the cutting edge system that is successfully implemented.

Er. Tong Kok Kwang
Project Director and Principal Mechanical Engineer, Office of Development & Facilities Management,
Nanyang Technological University

Er. Tong Kok Kwang is a Practising Mechanical Professional Engineer who has more than 20 years of design, supervision and maintain Mechanical and Electrical system. He has completed many different projects such as Institution, Shopping Centres, Military, Industrial, Waste Water Treatment, Petrochemical and etc. Er. Tong has strong passion in Mechanical Engineering is always looking out for and testing new system and design which improve energy efficiency and cost effectiveness. He has a very solid engineering foundation, studied and worked his way up from a technician with ITE certificate till today a Practicing Professional Engineer of Singapore. Er. Tong has volunteered his service in ACES and IES, was serving as a Council Members of ACES and Technical Committee member in IES. He was a Technical Committee Member which review and change some local Codes of Practice.
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Conference Registration Form

Please complete the registration form and send the completed form by e-mail or fax to SCAL Academy before 20 October 2015. For further enquiries, please do not hesitate to contact:

Miss Tan Wei Xuan | Tel: 6793 9020 | Fax: 6795 2584 / 6793 4401 | Email: weixuan@scal.com.sg
Miss Elene Yeo | Tel: 6793 9020 | Fax: 6795 2584 / 6793 4401 | Email: elene@scal.com.sg

Participants Information (Please Write / Type or Print Clearly in Capital Letters)

Name: ___________________________ NRIC/WP/FIN ___________________________ Designation: ___________________________

Name: ___________________________ NRIC/WP/FIN ___________________________ Designation: ___________________________

Name: ___________________________ NRIC/WP/FIN ___________________________ Designation: ___________________________

Organisation / Institution: ___________________________ Company Reg No: ___________________________

Address: ________________________________________________________________

Contact Person: ___________________________ Tel: (Office) ___________________________ (Mobile) ___________________________

Fax: ___________________________ Email: ___________________________

Conference Registration Fees per Participant (Please tick the appropriate box)

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Note: All rates quoted in Singapore Dollars (SGD). The registration fees include of 7% GST, Conference Materials, Tea Breaks and Lunch.

Payment

By crossed cheque made payable to “SCAL Academy Pte Ltd” and send to SCAL Academy @ No 5 Jurong West Avenue 5, Singapore 649485. Please indicate for “Environment Sustainability Conference” behind the cheque.

Terms and Conditions

1) Written notice of replacement or withdrawal must be given at least 7 days before the conference date with a penalty charge of 50% of the conference registration fees for withdrawal. For any replacement, $50 will be charged per participant replacement.

2) There will not be any refund or credit on fee paid.

3) Speakers, topics and venue are correct at the time of printing. SCAL reserve the right to substitute any of the speaker, cancel or change the content, venue and timing of the conference for reasons beyond its control.

Name / Authorized Signature / Designation ___________________________ Company Stamp (if applicable) ___________________________ Date ___________________________