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# **GREEN CONSTRUCTION**

**Achieving Sustainable Living for Future Generation**

**23 September 2014 • HDB CENTRE OF BUILDING RESEARCH**

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# GREEN CONSTRUCTION

## Featuring Industry Leaders and Experts:



**Er. Yvonne Soh**  
General Manager  
**Singapore Green Building Council**

Er. Yvonne Soh is the General Manager of the Singapore Green Building Council (SgBC), a non-profit organization driving the transformation of Singapore's building and construction industry toward sustainability.

Yvonne is a registered Professional Engineer (Civil) with extensive experience in the government sector, having been with the Building and Construction Authority (BCA) for a decade managing various portfolios in sustainable construction, regulatory & building control, technology, and research & development. Yvonne began her career as an engineer with P&T Consultants, an international multi-disciplinary building and construction consultancy firm, where she gained practical experience in the development of buildings.



**Ms. Rosana Wong**  
Managing Director  
**Yau Lee Construction (Singapore) Pte Ltd**

Ms. Rosana Wong is the Managing Director of Yau Lee Construction (Singapore) Pte Ltd and the Executive Director of Yau Lee Holdings Limited. Ms. Wong has over a decade of experience and plays a pivotal role in managing critical functions in Yau Lee. She also leads and manages the Group's green environmental friendly developments, for instance, low carbon building materials, green technologies and optimization, intelligent concrete, Building Information Modelling and Virtual Design & Construction. Under her leadership, Yau Lee has excelled into a green integrated corporation internationally.



**Joy Esther Gai Jiazi**  
Senior Engineer (Sustainable Design)  
**Surbana International Consultants Pte. Ltd.**

Joy and her team successfully delivered many "firsts": the first Green Mark Platinum building in Singapore CleanTech Park, the first Green Mark Platinum M.I.C.E. building in Singapore, the first LEED Gold new building in Singapore, the first LEED Silver restaurant in Asia, the first LEED Silver residential building in Malaysia, the first Green Mark Platinum hawker centre in Singapore and the first Green Mark Platinum hostel in Singapore under version 4.1.

She believes that an integrated design process is the solution to take the guesswork out of design in order to achieve design optimization.



**Mr Lim Wee Fong**  
Assistant Technical Manager  
**Samwoh Corporation Pte Ltd**

Wee Fong has over 10 years of experience in the field of Civil Engineering. His dissertation for the Master degree in Civil Engineering was on the use of Recycled Concrete Aggregate (RCA) in Structural Applications. The research project resulted in the first-of-its-kind building constructed using up to 100% RCA in this region, the Samwoh Eco-Green Building. Wee Fong's other research interests include the use of industrial by-products or recycled wastes in concrete such as ground-granulated blast furnace slag, pulverized fly ash, washed copper slag and etc. He has published several technical papers in journals and conferences.



**Tan Szué Hann**  
Deputy Head (Sustainable Urban Solutions) & Principal Architect  
**JURONG International**

Tan Szué Hann is Deputy Head (Sustainable Urban Solutions) and Principal Architect at JURONG International. He is a Registered Architect with the Board of Architects, Singapore, and a Council Member of the Singapore Institute of Architects. Szué Hann is also a BCA Green Mark Manager, and was the Architecture Editor of Singapore Architect, the official journal of the Singapore Institute of Architects, from 2008-2012. Szué Hann has also been an adjunct lecturer at the key architectural institutions in Singapore, and a speaker and moderator at various conferences, including IGBC 2013.



**Mr. Joseph Yong**  
Chief Operating Officer  
**NatSteel Holdings Private Limited**

Mr. Joseph Yong is presently the Chief Operating Officer of NatSteel Holdings Private Limited. Since its incorporation in 1961, NatSteel Holdings has been producing quality reinforcement steel products and services to the local construction industry. Since joining the company as a graduate engineer, Mr. Yong held various portfolios with the company including maintenance, engineering development, applied research & development, Operations, as well as overseas assignments. Mr. Yong also participated in various professional organizations like Institute of Electrical and Electronic Engineers and American Institute of Steel Technology. He is also the current Technical Director of South East Asia Iron and Steel Institute as well as a Metal Working Industry Council Member of Singapore's Workplace Safety & Health Council.



**Er. Teo Yann**  
Director  
**Squire Mech**

Er. Teo Yann graduated with a Bachelor of Engineering (Mechanical) degree from the National University of Singapore in 1985. Upon graduation, he worked with various contractors with significant projects such as Singapore MRT Phase I, Singapore MRT Phase II and Seletar Sewerage Treatment Plant Expansion., to name a few. Er. Teo joined Squire Mech in 1990 as an Executive Engineer, obtained his Professional Engineer in 1994, was made an Associate Director in 1996 and a Director in 2005. Since he joined Squire Mech, he has worked on numerous projects in major cities of China and Vietnam.



**Seah Hsiu-Min, Eugene**  
Group Managing Director  
**Langdon & Seah Singapore Pte Ltd**

Eugene Seah is leading the drive in Building Information Modelling and Contract and Dispute Management. He is involved in projects and hands-on with getting value and quality services to his clients and the project team. Eugene also embellishes the Quantity Surveying scope with sustainable economics, green approaches and BIM with the views of project efficacy. Besides core Quantity Surveying work, he researches into Value Management, Risk Management, Sustainability Management, Law and Contracts, Information Technology in Construction as well as Project Management and lectures on Green Issues in Singapore and overseas.



**Dr Yang En-Hua**  
Assistant Professor  
Division of Structures and Mechanics, School of Civil and Environmental Engineering  
**College of Engineering, Nanyang Technological University**

Dr. YANG En-Hua is assistant professor with the School of Civil and Environmental Engineering at the Nanyang Technological University. Prior to joining NTU, Dr. Yang as a forensic engineer in Exponent's Buildings and Structures practice. He received his PhD degree in Civil Engineering from the University of Michigan. Dr. Yang specializes in the development of sustainable infrastructure through the innovative construction materials technology. His principal areas of expertise are strain hardening cementitious composites ECC, composite micromechanics, material characterization, and material microstructure analysis and tailoring. He is experienced in the Leadership in Energy and Environmental Design (LEED) green building rating system and is a LEED Accredited Professional certified by the U.S. Green Building Council. Dr. Yang is a board member of the ASCE-Singapore session and is also a committee member of ACI Technical Committee 130 Sustainability of Concrete.

## Are You Doing Your Part for The Environment?

By 2016, construction companies that plan to participate in public projects have the responsibility to fulfill green standards established by the Building Control Authority (BCA).

In order to enforce environmental protection and minimise the impact of construction activities, large- and medium-sized firms will only be included under Building Construction Authority's registry only if they are certified under the Green and Gracious Building Scheme.

## 8

### Reasons to Attend the Event

1. Important review on green construction trends
2. Find out the opportunities and challenges of green construction
3. Insights into going green through scrap recycling
4. Learn cost benefit analysis (CBA) consideration for eco-construction
5. Obtain new updates on sustainable building materials
6. Look into recycling of waste materials to be used for construction applications
7. Practical learning through case studies discussion on sustainable construction
8. Discuss with your peers on the future of green construction

## Who Should Attend

The event is designed for professionals who are involved in the building and construction activities including, but not limited to:

- Government Officials
- Project Owners
- Developers/Contractors
- Engineers
- Material Suppliers
- Architects
- Financiers
- Management Consultants
- Quantity Surveyors
- Facilities Management

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# GREEN CONSTRUCTION

## Main Programme

**23 September 2014, Tuesday**

**08:30 – 09:00**

Registration

**09:00 – 09:10**

Welcome Address by K2B

**09:10 – 09:20**

Welcome Address by Chairperson

**Ms. Rosana Wong**

Managing Director

**Yau Lee Construction (Singapore) Pte Ltd**

**09:20 – 09:50**

**Er. Yvonne Soh**

General Manager

**Singapore Green Building Council**

### Green Construction Trends

The growth of green buildings across the world has been exponential in recent times and there is greater interest than ever to measure sustainability as it enables building professionals to make more informed decisions. This presentation will look into some of the drivers for green construction, beyond greater efficiencies in energy and water. In particular, green products and materials are of interest as they form a key part of the construction supply chain and are essential to achieving a sustainable built environment. Green procurement processes have also provided the momentum for a life cycle evaluation of goods and services.

**09:50 – 10:20**

**Ms. Rosana Wong**

Managing Director

**Yau Lee Construction (Singapore) Pte Ltd**

### Embrace Challenges: Turning Green Construction into Reality

With the issues of climate change, the demand for green construction is ever growing. To stay competitive, all stakeholders including contractors must "go green" and the transition to becoming a sustainable contractor is probably the biggest challenge to the industry. As a global integrated green corporation, Yau Lee Group is embracing this challenge as opportunity to move green construction forward. The speaker will share the Group's green journey from planning to adoption within the project full life cycle and explore how lean construction can ultimately enhance our eco system.

**10:20 – 10:50**

Networking break.

**10:50 – 11:20**

**Joy Esther Gai Jiazi**

Senior Engineer (Sustainable Design)

**Surbana International Consultants Pte. Ltd.**

### Making the Design Right in the First Place

Building construction is an irreversible process, and sustainability does not stop at the design stage. In order to avoid any future abortive works or even irreparable damages, it is critical to make the design right in the first place. Surbana will share our experience in shaping the design concept as well as the integrated process to help the team take the guess work out of design.

**11:20 – 11:50**

**Seah Hsiu-Min, Eugene**

Deputy Chairman

**Langdon & Seah Singapore Pte Ltd**

### Cost Benefit Analysis

Cost IS the bottom line of all project. It makes or breaks a project. No matter what design is churned out, cost matters. Therefore, it is important to get the cost right in order to have the right business case and business model. Cost drivers guide the design and design drivers. It contributes to the value drivers of a project. This seminar thus discusses the role of Cost, Cost Modelling and how it contributes to Cost Benefit Analysis. If the operational and maintenance cost benefit of a product or design outweighs the capital cost, there is a business case for the product and design. This presentation also illustrates what are the tools can be used for CBA, including simulation and models.

**11:50 – 12:20**

**Tan Szue Hann**

Deputy Head (Sustainable Urban Solutions) & Principal Architect

**JURONG International**

### Green Models - Design Prototypes in Sustainable Buildings

Presently, the practice of building consultancy is typically pushed and pulled by

market forces, which leads to buildings being engineered and designed primarily for favourable economics. This scenario is frequently observed in Singapore and greater Asia. In considering a new approach in architectural and engineering practice, there is a need to introduce concepts of sustainable design that can be easily understood and are favourable to market demands. These can be easily implemented, with a high buy-in for stakeholders, including developers and end-users. Several sustainable design prototypes, which reflect the merits of an integrated architecture and engineering design process, will be introduced, from both passive and active design perspectives. These will be assessed for economic and implementation feasibility, and simplified into conceptual diagrams which can be implemented into every new building design.

**12:20 – 13:30**

Lunch

**13:30 – 14:00**

**Mr. Joseph Yong**

Chief Operating Officer

**NatSteel Holdings Private Limited**

### Going Green by Scrap Recycling

NatSteel, the only steel mill in Singapore with the largest scrap recycling operation in the region and one of the world's leading construction steel fabricator, produces reinforcement steel using 100% recycled metal waste. The company deploys one of the world's most efficient steel making electric arc furnace to convert waste metal to finished products. Steel recycled from domestic metal waste is generating the lowest CO2 per ton of steel, thus contributing to the sustainability of one of the key building materials for Singapore Construction industry. This is in line with the government's drive for environmental sustainability, recycling of metal waste and going green.

**14:00 – 14:30**

**Er. Teo Yann**

Director

**Squire Mech**

### Consideration for Eco-Building Services in Support of Green Construction

With increase urbanisation, the increase in Built Environment is inevitable. However, we have a choice by how we design to support the Built Environment; ie we can design building with greater dependence on energy usage or building that harness the positive contribution of the natural environment and as such, is lesser dependence on energy usage to operate the building. With better means to harness the positive contribution of the natural environment would entail better passive consideration such as building orientation, façade provision, sun shading, day lighting, adopting natural ventilation and the likes. Besides passive consideration, active design consideration such as design of variable controls, efficient equipment, energy recovery and the likes will also help to greatly reduce the usage of energy to operate the building.

**14:30 – 15:00**

**Mr Lim Wee Fong**

Assistant Technical Manager

**Samwoh Corporation Pte Ltd**

### Use of Recycled Materials for Construction Applications in Singapore

This presentation describes some of the recycled materials that can be or has been used for construction applications in Singapore. The waste materials discussed include construction and demolition waste, asphalt pavement waste as well as incinerator ash that is generated from the incineration of solid waste.

**15:00 – 15:30**

**Dr Yang En-Hua**

Assistant Professor

Division of Structures and Mechanics, School of Civil and Environmental Engineering

**College of Engineering, Nanyang Technological University**

### Engineered Self-healing Cementitious Composites

The presentation reports the design of an engineered cementitious composites to engage autogenous crack healing. It has been observed that cracks are lined with white crystalline material after environmental conditioning cycles suggesting the ability of the material to seal the cracks with chemical products by itself. Structures built with self-healing concrete will be more durable and have longer service lives, and thereby leading to enormous savings on maintenance and repair costs over the use phase.

**15:30 – 15:40**

Concluding remarks by Chairperson, Ms Rosana Wong

**15:40**

Networking Refreshments and End of Seminar

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# REGISTRATION FORM GREEN CONSTRUCTION

23 September 2014  
HDB Centre of Building Research

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<input type="checkbox"/> Individual	S\$ 400

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Job Title: \_\_\_\_\_ Email: \_\_\_\_\_

Delegate 2 Name: \_\_\_\_\_  Mr  Mrs  Ms  Dr  Other

Job Title: \_\_\_\_\_ Email: \_\_\_\_\_

Delegate 3 Name: \_\_\_\_\_  Mr  Mrs  Ms  Dr  Other

Job Title: \_\_\_\_\_ Email: \_\_\_\_\_

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Singapore 089066

Email: hafiz@k2b.com.sg

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Once you have completed, signed and sent this training registration form to K2B International, we will email you a delegate welcome pack. You will receive the hotel's booking form in this pack which you can fax to the hotel to reserve your room at a discounted rate.

## EVENT VENUE

HDB Centre of Building Research

No. 10 Woodlands Avenue 8

Singapore 738973

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