



# 3RD ANNUAL BUILDING ENVELOPES ASIA 2012

Efficient Design, Engineering and Material Technologies  
for High Performance Building Envelopes

Conference: 25 - 26 April 2012 | Site Visit - Resorts World Sentosa: 24 April 2012  
Technical Workshops: 27 April 2012 | Venue: Marina Bay Sands, Singapore

**INSIDE...** READ SNEAK  
PREVIEWS ON SELECTED  
CASE STUDIES *PLUS...*

**24** SPEAKERS FROM  
10 COUNTRIES

**6** ADVISORY BOARD  
MEMBERS

**4** TECHNICAL  
WORKSHOPS

**1** SITE VISIT TO  
RESORTS WORLD  
SENTOSA



**14 INTERNATIONAL  
CASE STUDIES**

**14 CPD**  
Points for  
All Engineering  
Disciplines

Image courtesy of BCHO Architects, South Korea

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[www.buildingenvelopesasia.com](http://www.buildingenvelopesasia.com)



## Top architects presenting

- \* **Meeta Patel**  
Divisional Director, **BENOY**
- \* **Byoung Soo Cho**  
Principal Architect, **BCHO Architects**
- \* **Marshall Strabala**  
Design Partner, **2DEFINE Architects**
- \* **Chris Bosse**  
Director, **Laboratory for Visionary Architecture**
- \* **Hannes Pfau**  
Associate Director, **UN Studio**
- \* **Jason Pomeroy**  
Director, **Broadway Malyan**
- \* **James Law**  
Chief Cybertect  
**James Law Cybertecture**
- \* **Jan Rehders**  
Director - Sustainability  
**T. R. Hamzah & Yeang**
- \* **Dirk Zimmerman**  
Director, **Studio 505**
- \* **Karan Grover**  
Principal Architect  
**KARAN GROVER ASSOCIATES**
- \* **Sameer Kumar**  
Associate Principal  
**KOHN PEDERSEN FOX**
- \* **Adam Frampton**  
Associate  
**Office of Metropolitan Architecture**
- \* **Julian Sutherland**  
Head – Sustainability  
**ATKINS Global**

## About IQPC



IQPC provides business executives around the world with tailored practical conferences, large scale events, topical seminars and in-house training programs, keeping them up-to-date with industry trends, technological developments and the regulatory landscape. IQPC's conferences are market leading "must attend" events for their respective industries. IQPC produces more than 1,500 events annually around the world, and continues to grow. Founded in 1973, IQPC now has offices in major cities across six continents including: Berlin, Dubai, London, New York, Sao Paulo, Singapore, Stockholm, and Sydney. IQPC leverages a global research base of best practices to produce an unrivalled portfolio of conferences.

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Dear building industry stakeholder,

As players in the robust building construction industry, we are committed to ensuring a sustainable built environment.

Aligned to the industry momentum, Building Envelopes Asia will address the pertinent issues, challenges and opportunities in achieving efficiency. Hear from the movers and shakers as they share insights from their success stories.

With hot button topics discussed in a refreshing new format - I am pleased to present you with the programme for the 3rd annual Building Envelopes Asia 2012 in Singapore.

Gain insights from the industry's most sought after speakers:

- Agnes Ng, Chairman of BEAM Society of Hong Kong on Understanding the drivers for improved building performance in Asia - regulatory compliance and implications of regional rating standards
- Deepak Mowar, Vice President of Retail Development with Parsvnath Developers, India on Decoding the economics of achieving building sustainability and the contributing role of envelopes
- Francis Leung, Director, WSP GROUP on New trends in envelope architecture (combining new materials)

See the programme for full details on topics by our stellar line up of leading industry speakers.

### Featuring 14 international case studies for the first time including:

- Twin Tree Towers, Seoul, South Korea
- Shenzhen Tower, China
- The Vertices, Kuala Lumpur, Malaysia
- Spire Edge, India
- Wintergarden Art Façade, Australia
- Taipei Performing Arts Centre, Taiwan

An exciting program awaits - packed with 30 presentations, 4 panel discussions, four workshops and a site visit, it is an event you should not miss. I assure that you will benefit from the many interactive discussions, sharing of best practices and most importantly network and do business with key decision makers that will be present.

I look forward to welcoming you at Building Envelopes Asia 2012.

Warm regards,

IB Saravanan  
Conference Director  
IQPC Worldwide

PS. Contact us now to find out more about special packages available for conference, site visit and workshops.

### Are you a developer?

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## AGENDA AT-A-GLANCE

### Pre-conference site visit: 24 April 2012

Resorts World Sentosa, Singapore - addressing the challenges in combining a variety of façade materials for different performance criteria

Led by: **Mathieu Meur**, Managing Director & **Timothy Soebroto**, Façade Consultant, **MEINHARDT FAÇADE TECHNOLOGY, Singapore**

### Conference day 1: 25 April 2012

#### The role of efficient envelopes in aesthetic and commercial building developments

**0845-1800:** Developers, regulators, architects and engineers discuss the need for sustainable building performance and the role of envelope design/engineering

- 2DEFINE ARCHITECTS
- AEDAS
- ATKINS GLOBAL
- ARUP
- AURECON
- BEAM SOCIETY, HONG KONG
- BECA
- BENOY
- BYOUNG SOO CHO ARCHITECTS
- CONSTRUCTION INDUSTRY DEVELOPMENT BOARD, MALAYSIA
- KARAN GROVER
- MEINHARDT FAÇADE TECHNOLOGY ASSOCIATES
- PARSVNATH DEVELOPERS
- YUANDA

**1810 onwards:** Cocktails and networking reception

### Conference day 2: 26 April 2012

**0850-1800:** Best practices in the design and engineering of high performance envelopes

- BROADWAY MALYAN
- GLASS & GLAZING FEDERATION
- JAMES LAW CYBERTECHTURE
- KOHN PEDERSEN FOX
- LABORATORY FOR VISIONARY ARCHITECTURE
- OFFICE OF METROPOLITAN ARCHITECTURE
- STUDIO 505
- T R HAMZAH & YEANG
- UN STUDIO
- WSP GROUP

### Post-conference workshops: 27 April 2012

**Workshop A:** 0900 - 1030: **Use of unconventional façade materials in Creating aesthetic and complex envelopes** led by Chris Bosse, Director, LABORATORY FOR VISIONARY ARCHITECTURE

**Workshop B:** 1100 - 1230: **Addressing challenges in the design and engineering of envelopes for super tall towers** led by Marshall Strabala, Director - Design, 2DEFINE ARCHITECTS

**Workshop C:** 1330 - 1500: **Delivering stakeholders' expectations for high performance buildings through optimal material selection and envelope engineering** led by John C Perry, Managing Director, YUANDA GROUP

**Workshop D:** 1530 - 1700: **Optimal envelope engineering for ease of access and maintainability - best practices and case studies** led by Mathieu Meur, Managing Director, MEINHARDT FAÇADE TECHNOLOGY

**Go to page 9 for further details on these topical workshops**

### Advisory panel for 2012



Byoung Soo Cho, Principal Architect, **BCHO Architects, South Korea**



Chris Bosse, Director, **Laboratory for Visionary Architecture, Australia**



Russel Cole, Head - ESD and Façade Engineering, **ARUP, Singapore**



Marshall Strabala, Design Partner, **2DEFINE Architects, China**



Dr Benny Chow, Director - Sustainability, **AEDAS, Hong Kong**



Mathieu Meur, Managing Director, **Meinhardt Façade Technology, Singapore**

### Confirmed developers attending include:

- Hap Seng Land Sdn Bhd
- MCL Land Ltd
- SP Setia International (S) Pte Ltd
- Sime Darby Property Berhad
- Far East Organization
- Pontiac Land
- Capital Malls Asia Limited
- Keppel Land International
- Wing Tai Property Management Pte Ltd
- City Development Limited
- IJM Land Berhad
- Filinvest
- Robinsons Land
- Mah Sing Group Berhad
- Parsvnath Developers



## Taipei Performing Arts Centre, Taiwan

Set in the Shilin District of Taipei, Taiwan and scheduled for completion in 2015, OMA's design for the Taipei Performing Arts Center consists of three theaters with a total of 3,100 seats. The theatres plug into a central cube, which consolidates the stages, backstages and support spaces into a single and efficient whole. The individual auditoria protrude outward from the cube and float above this dense and vibrant part of the city. While each theater can function independently, this unique arrangement also allows stages to be merged, effectively combining the theaters for unsuspected uses and scenarios.

Hear more about this exciting project from **Adam Frampton, Associate, Office of Metropolitan Architecture** at the conference.



Image courtesy of Office of Metropolitan Architecture

## Louis Vuitton Maison, South Korea



Image courtesy of BCHO Architects

The form of the facade is a series of continuous concave and convex curvatures with slight angles which will diffract light with consistently changing distortions. These will create almost cinematographic perspectives which will highlight the Louis Vuitton collection and ever changing line of fashion, art, and travel items. These differing geometries generate faceted reflections, which enable viewers, both inside and outside the building, to see constantly changing pictures of Louis Vuitton products, the city and themselves. Integrated with the stepped arrangement of the show floors, the users of the building will have various changing views of the urban context.

**Byoung Soo Cho, Principal Architect of BCHO Architects** will be presenting on the above projects.

## UTS Tower, Sydney



Image courtesy of Laboratory for Visionary Architecture

What initially began as a speculative proposal for a bold re-shaping of the UTS tower on Broadway has evolved as a broader architectural system for re-purposing inefficient and outdated buildings without the need to demolish and rebuild. LAVA has developed a simple, cost effective and easily constructed building skin that can transform the identity, sustainability and interior comfort of an existing structure such as the UTS tower.

**Chris Bosse, Director at Laboratory for Visionary Architecture** is speaking at the conference.

## PUTRAJAYA - Lot L2C5, Malaysia



Image courtesy of T. R. Hamzah & Yeang

To be completed in 2013, the building is a mixed-commercial development with two 14 storey tower blocks interconnected with a pedestrian sky bridge. The tower accommodates retail at level 1 and part of Level 3, and offices for level 2 to level 14. The building is a commercial development that is distinguished by its sustainable ecological features and iconic design.

Hear from **Jan Rehders, Head - Sustainability at T.R. Hamzah & Yeang** at the conference.

This is just a snapshot of the case studies you'll be hearing about. Other projects being discussed include:

- South Quarter, Jakarta, Indonesia
- The Pavilion at London Olympics, United Kingdom
- Ken TTDI, Malaysia
- The Vertices, Malaysia
- Twin Tree Towers, South Korea

Visit our website for more information on these exciting case studies.



## 2012's ALL-STAR SPEAKER LINE-UP INCLUDES:



**Adam Frampton**  
Associate  
**OFFICE OF  
METROPOLITAN  
ARCHITECTURE**



**Jason Pomeroy**  
Director  
**BROADWAY  
MALYAN**



**Agnes Ng**  
Chairman  
**BEAM SOCIETY,  
Hong Kong**



**Chris Bosse**  
Director  
**LABORATORY  
FOR VISIONARY  
ARCHITECTURE**



**Dylan Brady**  
Director  
**Studio 505**



**Marshall Strabala**  
Design Partner  
**2DEFINE  
ARCHITECTS**



**Mathieu Meur,**  
Managing Director,  
**MEINHARDT  
FAÇADE  
TECHNOLOGY**



**Jan Rehders**  
Director -  
Sustainability  
**T.R. HAMZAH &  
YEANG**



**Byoung Soo Cho**  
Principal Architect  
**BYOUNG SOO  
CHO ARCHITECTS**



**Meeta Patel**  
Divisional Director  
**BENOY**



**Dr Benny Chow**  
Director -  
Sustainability  
**AEDAS**



**Hannes Pfau**  
Associate Director  
- Asia  
**UN STUDIO**



**John C Perry**  
Managing Director  
**YUANDA GROUP**



**Deepak Mowar**  
Vice President -  
Retail Development  
**PARSVNATH  
DEVELOPERS**



**Haji Ir. Mukhtar Che Ali**  
General Manager - Safety, Health, Environment and Quality  
(SHEQ) Division  
**CONSTRUCTION INDUSTRY DEVELOPMENT BOARD**

## Pre-conference site visit:

24 April 2012



### Resorts World Sentosa, Singapore - Addressing the Challenges in Combining a Variety of Façade Materials for Different Performance Criteria

Resorts World Sentosa is an integrated resort located on the island of Sentosa. Meinhardt Façade Technology has deployed their expertise for the façade and roofing of this project, which include stone cladding, window walls, high performance sliding doors, aluminium roofing with built-in green roof, glass walls and shop fronts, slate tiles, glass skylights, and over 25,000 m<sup>2</sup> ETFE and PTFE canopies.

One of the most challenging aspects of the project consists in the theming façade for the Universal Studios Singapore which was made of precast, NALC panels, metal cladding, GFRP (Glass Fiber Reinforced Concrete) and GFRP (Glass Fiber Reinforced Plastic).

Key learning:

- Addressing challenges in integrating ±25,000m<sup>2</sup> of ETFE canopies, the largest in South East Asia
- Adopting the correct systems and material while using stone cladding
- The importance of design coordination, in order to meet all project requirements

Led by:



**Mathieu Meur,**  
Managing Director,  
**MEINHARDT FAÇADE  
TECHNOLOGY, Singapore**



**Timothy Soebroto,**  
Façade Consultant,  
**MEINHARDT FAÇADE  
TECHNOLOGY, Singapore**

Visit our website for more information on your workshop leaders.

Download the speaker bios brochure from our website today...



# Conference day one: 25 April 2012

0830 Registration & welcome coffee

0850 Opening remarks from the chair

## Role of Efficient Envelopes in Aesthetic and Commercial Building Developments

0900 **Understanding the drivers for improved building performance in Asia - regulatory compliance and implications of regional rating standards**

- Involving the industry in policy formulation for sustainable building
- Defining roles of individual stakeholders and industry associations in developing environment-friendly buildings
- Assessing the role of envelopes in qualifying energy efficient buildings

**Agnes Ng**, Chairman,  
**BEAM SOCIETY, Hong Kong**

0930 **The evolution and future for building envelopes in the varying weather conditions of Asia: case studies**

CASE STUDY

- Learning from the evolution of the design, engineering and preferred materials of envelopes
- Selecting ideal material and engineering combination for varying weather conditions
- How to design envelopes for extreme weather patterns?

**Dr Benny Chow**, Director - Sustainability,  
**AEDAS, Hong Kong**

1000 **Regulations and key drivers for building performance towards environment-friendly buildings**

- Involving industry in policy formulation
- Defining the roles of individual stakeholders and industry associations in developing environment-friendly buildings
- Importance of quantifying energy produced and conserved by the envelopes

**Haji Ir. Mukhtar Che Ali**, General Manager - Safety, Health, Environment and Quality (SHEQ) Division,  
**CONSTRUCTION INDUSTRY DEVELOPMENT BOARD, Malaysia**

1030 Morning tea & networking break

1100 **Decoding the economics of achieving building sustainability and the contributing role of envelopes**

- What is the actual cost of efficient and aesthetic envelopes?
- Presenting a developer's considerations in ROI of high performance envelopes
- Benefitting from an aesthetic and efficient envelope - what is the ROI?

**Deepak Mowar**, Vice President - Retail Development,  
**PARSVNATH DEVELOPERS, India**

1130 **Examining how Building orientation need not dictate energy performance: case studies from South Quarter in China, Jakarta and the UK**

CASE STUDY

- Simple yet effective solar control for building clusters
- Low energy environmental control through high performance facades

- Decarbonising architecture

**Julian Sutherland**, Head - Sustainability,  
**ATKINS GLOBAL, UK**

## Importance of Stakeholder Coordination in Delivering Efficient Envelopes

1200 **Achieving higher building performance: case study - Meridian Energy Building - an integrated design approach with adaptive facades**

CASE STUDY

- Project context and design objectives
- Role of environmental sustainability and energy consulting in identifying ideal envelope responses and materials
- Passive and active façade features
- Interface between design and procurement methodologies

**Alan Barbour**, Technical Director - Green Buildings,  
**BECA, New Zealand**

1230 **Ensuring improved stakeholder coordination for efficient envelope delivery**

- Who are the stakeholders in integrating high performance envelopes and how to quantify their roles and scopes?
- Initiating early stakeholder coordination: what are the benefits?
- Optimising resources in envelope delivery

**Mathieu Meur**, Managing Director,  
**MEINHARDT FAÇADE TECHNOLOGY, Singapore**

1300 Lunch and networking break

1400 **Techniques in combining aesthetics and functionality in the design of building envelopes: case study - The Atrium, Singapore**

CASE STUDY

- Defining functionality of high performance envelopes
- Combining the architectural parameters in designing efficient facades
- New trends in design factors for facades

**Meeta Patel**, Divisional Director,  
**BENOY, Singapore**

1430 **Quantifying embodied energy in envelope materials: impact of recycled materials and passive façade elements for efficient envelopes**

- Where does the sustainability calculation start for a sustainable building?
- Moving towards holistic approach in achieving higher building performance
- Embodied energy of envelope materials with reference to rating standard certification

**Karan Grover**, Principal Architect,  
**KARAN GROVER ASSOCIATES, India**

**Global Trends in Combining Aesthetics and Functionality for Efficient Envelopes**

**1500 Integrating high performance with aesthetics in design of thematic buildings: case study - Twin Tree Towers, South Korea**

CASE STUDY

- Design considerations in developing iconic buildings
- Engineering and constructability issues in iconic envelope design
- Integrating high performance with aesthetics: selecting ideal combination of materials

**Byoung Soo Cho**, Principal Architect,  
**BYOUNG SOO CHO ARCHITECTS, South Korea**

**1530 Afternoon tea & networking break**

**1600 How to achieve complex geometry in envelopes: factoring in new material and fabricating techniques**

- Using composites and FRP as new alternative façade materials
- Materials for dynamic facades: Integrating alternative materials for better façade performance
- Electrical, electronic and software support systems for automated facades

**John C Perry**, Managing Director,  
**YUANDA, Singapore**

**1630 Addressing structural challenges while engineering envelopes for very tall towers: case study - Shenzhen Tower, China**

CASE STUDY

- Choosing façade materials: challenge and opportunity for cladding tall buildings
- Reflected light - properties of reflective glazing, textured steel spandrels and vertical steel tubular fins for cladding
- Improving envelope performance in tall towers

**Marshall Strabala**, Design Partner,  
**2DEFINE ARCHITECTS, China**

**1700 How can standardising the components, fabrication and installation procedures enhance the performance of envelopes?**

- Detailing the ingredients of a high performance façade
- Presenting the contribution of individual components in a façade
- Calculating energy efficiency requirements and maintainability requirements

**Russell Cole**, Head - ESD & Façade Engineering,  
**ARUP, Singapore**

**1730 Addressing and overcoming challenges in envelope retrofitting?**

- Segregating the efficient/inefficient components of the building structure
- Listing the high performance objectives for retrofitted structure
- Achieving thermal insulation and balancing cost efficiency

**Stephen Logan**, Competency Leader - Building Sciences,  
**AURECON, Australia**

**1800 Chair's summary with Q & A and end of plenary session**

**Conference day two:  
26 April 2012**

**0830 Registration & welcome coffee**

**0850 Opening remarks from the chair**

**Designing and Engineering of High Performance Envelopes**

**0900 Updating trends in design and construction of naturally ventilated facades**

- Designing for increased airflow in the ventilated claddings
- Enhancing the efficiency and life expectancy of insulating materials
- Deriving minimum heat-load gain characteristics from the facade

**Sameer Kumar**, Associate Principal,  
**KOHN PEDERSEN FOX, USA**

**0930 Key consideration factors for high rise commercial buildings in tropical conditions: case studies - The Vertices and KEN TTDI, Kuala Lumpur**

CASE STUDY

- Bioclimatic buildings and design of high performance envelopes
- Considering multiplicity in integrating transparency, forms, edges and layers in envelope design
- Designing high performance envelopes in tropical conditions

**Jason Pomeroy**, Director,  
**BROADWAY MALYAN, Singapore**

**1000 Creating large scale, efficient envelope systems for thematic buildings - case study: Taipei Performing Arts Centre, Taiwan**

CASE STUDY

- Creating a relationship with the performing theatre and the environment by non-opaque, corrugated glass façade
- Addressing façade's structural design with regards to seismic and typhoon lateral loads

**Adam Frampton**, Associate,  
**OFFICE OF METROPOLITAN ARCHITECTURE, China**

**1030 Morning tea & networking break**

**1100 Designing efficient and complex envelopes through (Building Information Modelling) BIM: updates and case studies**

- Current trends in using BIM to design efficient and complex envelopes
- Integrating interoperability with envelope stakeholders
- Managing envelope design, engineering and fabrication through BIM modules

**Hannes Pfau**, Associate Director - Asia,  
**UN STUDIO, China**

**1130 Achieving sustainability in envelope engineering through Building Information Modelling (BIM)**

- Efficient coordination with stakeholders through BIM systems
- Integrating an interoperable BIM system to effectively communicate to M&E, structural, civil and fabrication



- How did BIM play the vital role in develop the high performance envelopes?

**Francis Leung**, Director,  
**WSP GROUP, Hong Kong**

### Entering a new era in envelopes design

**1200** **Converting solar heat to energy while developing envelope for geodesic habitats: case study - Riyadh Financial Academy, Saudi Arabia**

CASE STUDY

- Handling structural challenges while designing/ engineering envelopes for geodesic habitats
- Selecting ideal material combination for envelopes
- Integrating BIPV systems and intelligent façade automation controls for better indoor quality

**James Law**, Chief Cybertect,  
**JAMES LAW CYBERTECTURE, Hong Kong**

**1230** **Outlining new trends in envelope architecture - media facades and intelligent/ambient-reactive glasses for facades: case study - UTS Tower, Australia**

CASE STUDY

- Designing 'mediatecture' with moving LED images and video walls
- Challenges in architecturally understanding the materials of media facades
- New developments in ambient-reactive glasses for facades

**Chris Bosse**, Director,  
**LABORATORY FOR VISIONARY ARCHITECTURE, Australia**

**1300** **Lunch and networking break**

**1400** **Developing cost efficient bioclimatic envelopes for different weather conditions: case studies - Foguang Foundation Monastery and Putrajaya Lot L2C5, Malaysia and Spire Edge, India**

CASE STUDY

- Composing the East-West green facades and North-South precast facades
- Green roofing with vegetable producing arrangement
- Incorporating facades with green elements and rainwater harvesting features

**Jan Rehders**, Director - Sustainability,  
**T.R. HAMZAH & YEANG, Malaysia**

**1430** **Embracing value engineering approach in developing envelopes for complex structures**

PANEL DISCUSSION

- Using life cycle analysis as a comparative tool for value engineering
- Value engineering as a concept in measuring the building performance efficiency
- Addressing material sourcing / fabrication challenges in developing complex facades

**Panelists**

**Julian Sutherland**, Head - Sustainability,  
**ATKINS GLOBAL, UK**

**Mathieu Meur**, Managing Director,  
**MEINHARDT FAÇADE TECHNOLOGY, Singapore**

**Francis Leung**, Director,  
**WSP GROUP, Hong Kong**

**Stephen Logan**, Competency Leader – Building Sciences,  
**AURECON, Australia**

**Russell Cole**, Head - ESD & Façade Engineering,  
**ARUP, Singapore**

**Alan Barbour**, Technical Director - Green Buildings,  
**BECA, New Zealand**

**1500** **Integrating green features into conventional façade design: case study - Wintergarden Art Façade, Australia**

CASE STUDY

- Developing a complex façade with metal and natural greenery integrated
- Design process replicating the life, elegance and vibrancy of retailing

**Dirk Zimmerman**, Director, **Studio 505, Australia**  
**Dylan Brady**, Director, **Studio 505, Australia**

**1530** **Afternoon tea & networking break**

### Envelope Material Innovations - Stretching the Imagination

#### Concurrent Round Table Discussions

**1600 Round Table A:**

**Exploring the growth in envelope material technology - membranes, fabrics, mesh, films, ETFE, FRC and GFRC**

- Possibilities in envelope engineering with trends in material technology
- Combining envelope materials in creating visually aesthetic buildings - case studies
- Stretching the limits in envelope material innovation

**1600 Round Table B:**

**Thermally efficient envelopes - addressing the challenges in identifying materials, scope of design and engineering and controlling costs**

- Classifying types of insulations for building envelopes
- Forms of natural ventilation and means of achieving effective insulation
- Modern materials in insulation and challenges in integrating into envelopes structures

**1600 Round Table C:**

**Accelerating the acceptance of BIPV as envelopes in tropical conditions**

- Requiring a regulatory support to promote BIPV
- Role of solar film manufacturers and fabricators - what is the minimum thickness achievable?
- Criteria that architects/engineers look for with BIPV systems

**1600 Round Table D:**

**The road ahead in developing high performance, intelligent and cost effective façades and the role of new materials**

- Challenges in developing and integrating high performance envelopes
- How to overcome access and maintainability issues in envelopes?
- New trends in façade materials

**1700** **Chair's summary with Q & A and end of main conference**



# Post-conference workshops: 27 April 2012

## Workshop A: 0900 - 1030

### Use of Unconventional Façade Materials in Creating Aesthetic and Complex Envelopes

With the advent of new façade materials, architects can get even more visual, engaging and aesthetic while developing complex envelopes for buildings. Backlit panels, mesh, one-way vision films, LED lit media façade, colored fabrics – how and when to choose a suitable material in the design process?

Key learning:

- What are the current material trends architects need to be following
- Where does selection/integration of material start?
- Understanding the limitations of envelope materials while designing complex facades
- Case studies with unconventional façade materials



Led by:  
**Chris Bosse**, Director,  
**LABORATORY FOR VISIONARY ARCHITECTURE**,  
Australia

## Workshop C: 1330 - 1500

### Delivering Stakeholders' Expectations for High Performance Buildings through Optimal Material Selection and Envelope Engineering

High performance envelopes are now being seen as a key component to achieving higher building performance. While regulators are mandating emission and sustainable qualities, developers are concerned about the cost of developing HP envelopes.

Realising the full extent of architectural design and resource and structural optimisation are major concerns too, making the matrix a complex one.

Key learning:

- What are the expectations of stakeholders while developing high performance envelopes
- Challenges in cost, material and time optimisation
- Role of a façade engineering in the coordination process between stakeholders
- Realising the true design and development objectives



Led by:  
**John C Perry**, Managing Director,  
**YUANDA GROUP**, Singapore

## Workshop B: 1100 - 1230

### Addressing Challenges in the Design and Engineering of Envelopes for super tall towers

With the increasing demand for real estate space in Asian cities, tall and super tall buildings are preferred by developers for their better footprint-GFA ratio. Special design and engineering requirements characterise these buildings as is the case with envelopes.

Combining iconic and complex envelope geometries such as twisted double skin cladding are used in few of the world's super tall buildings; a very difficult design to achieve.

Key learning:

- Combining form and function in envelope design for tall buildings
- Addressing challenges of energy efficiency, structural stability and cost optimisation
- Material selection, fabrication methodology and constructability in super tall buildings



Led by:  
**Marshall Strabala**, Design Partner,  
**2DEFINE ARCHITECTS**, China

## Workshop D: 1530 - 1700

### Optimal Envelope Engineering for Ease of Access and Maintainability - Best practices and case studies

Maintaining, repairing and retrofitting of existing buildings is growing as more building owners look to cut down life cycle operational costs of a building. But unique challenges are faced by façade engineers and consultants in retrofitting the envelopes for existing buildings, such as selection of material, fabrication technology, access to structure etc. In addition, stakeholders are also concerned with the optimisation of cost, material and manpower in performing maintenance and repair of building envelopes.

Key learning:

- Modern trends in maintenance and repair of envelopes
- How to provide safe access while retrofitting envelopes
- Ideal material and fabrication process selection for retrofit
- Cost and regulatory concerns in maintenance, repair and retrofit of envelopes



Led by:  
**Mathieu Meur**, Managing Director,  
**MEINHARDT FAÇADE TECHNOLOGY**, Singapore

Download the speakers bio brochure from our website for more details on your workshop leaders.



## What is New in Building Envelopes Asia 2012?

High performance envelopes characterise efficient buildings. Buildings that are sustainable to construct and operate, invariably provide better ROI, higher sales value, increased occupant comfort, better maintainability and hence longer service life.

**Building Envelopes Asia 2012** is the only regional summit examining trends in developing efficient envelopes. Developers, architects, façade engineers, regulators and material and technology suppliers discuss the need for high performance envelopes and the design/engineering techniques..

This year, **Building Envelopes Asia 2012** will examine:

- \* ROI analysis for sustainable buildings achieved through efficient envelopes
- \* Active and passive tools of high building performance
- \* Regulations, rating standards and stakeholder coordination for high building performance
- \* Successful case studies of high performance buildings with complex envelopes
- \* Trends in envelope systems, materials and fabrication/installation techniques

For the first time the summit is also featuring panel discussions focused on new envelope materials and combinations such as media wall, mesh and fabrics, films, FRC and NALC.

The summit, also for the first time, includes 14 under construction building case studies presented by global architectural and engineering firms.

## Why do the delegates need you?

Delegates attend this event to understand how they can achieve higher building performance and comply with sustainability regulations. They are looking for products and services which will help plan, design and engineer efficient and commercial building developments.

## Why do you need to be there?

Conference delegates are qualified, senior level decision makers with proven budget control. You'll be meeting and doing business with leaders from the building envelopes industry that have chosen to invest their money and time in addressing the specific challenges listed in the agenda.

Our delegates come looking for solutions, and sponsoring puts you on a platform to demonstrate your expertise and win their business.

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I gained insights to façades, new designs and market expectations. The event was well organised and had impressive speakers.

Kuan Chee Yung, Senior Vice President (Architecture),  
**CPG CONSULTANTS**



KEN TTDI - image courtesy of BROADWAY MALYAN



**Adam Frampton, an architect with OMA, talks about the exquisite Taipei Performing Arts Centre which he designed. He also talks about the challenges in incorporating the design and how he overcame those challenges.**

## Case Study: The inspiration behind the Taipei Performing Arts Centre, Taiwan

**Bryan Camoens:** In your experience, when designing the large scale, efficient envelope system for the Taipei Performing Arts Centre what are some of the challenges that are often faced?

**Adam Frampton:** Actually, our biggest challenges are self-imposed. On the three auditoria, we are using large-format aluminium panels to avoid the proliferation of joints and to lend a mysterious, scale-less appearance to the volumes. The dimensions of these panels exceed current manufacturing and transport capabilities, so we plan to weld multiple pieces together on site. In the case of one facade, we also have to very precisely form these panels into the double-curved, ellipsoid shape of the auditorium. For the expertise necessary to realize this façade, we're looking outside the building industry to ship-builders.

**Bryan Camoens:** What was the inspiration behind the design of the Taipei Performing Arts Centre?

**Adam Frampton:** While we often work intuitively, process is perhaps more relevant at OMA. That is to say, at OMA, concepts don't usually emerge

top-down from moments of "creative inspiration", but rather from the team's research on the given conditions, the program, and the exhaustion of a lot of possibilities. Usually many ideas are rejected before something plausible emerges. This was also the case in the design of TPAC.

We were asked to create a performing arts center with a 1500-seat and two 800-seat venues. We saw a lot of performing arts centers with the same program where proximity doesn't yield anything greater than the sum of parts. Our design comes from arranging the given program in a way that seeks to take advantage of the proximity of the 3 theaters. The shape of TPAC actually reflects this arrangement.

**Bryan Camoens:** And what challenges do you foresee in incorporating this design?

**Adam Frampton:** The Taipei Performing Arts Center is in the tender process now to appoint a contractor. It is crucial that we find a contractor who shares our ambition and can execute the design to ensure the quality of the outcome.

To read more on this interview and many more articles visit our download centre today at [www.buildingenvelopesasia.com](http://www.buildingenvelopesasia.com)

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