

## Full-day workshop on Inspection Methodology of Curtain Wall System

Organized by  
Façade Group, Hong Kong Institute of Steel Construction

Supported by  
Department of Civil and Environmental Engineering, The Hong Kong Polytechnic University  
Joint Structural Division, The Hong Kong Institution of Engineers

Sponsored by  
Dow Corning (Hong Kong) Limited

Date 日期 :	8 May 2017
Venue 會場:	Room N001, The Hong Kong Polytechnic University
Time 時間 :	8:45 am (registration) for 9:15 am to 5:45 pm

### Scope and Objective

In Hong Kong, there are hundreds of curtain-walled commercial buildings including hotels and office buildings aged 30 years or above.

Curtain Wall System has been prevalent in the construction industry since 1970s and is regarded as a well-engineered structural system, in which its structural framing consisting of mullions and transoms externally affixed to the structural frame of the building is achieved by means of Halfen Channel Embed with original designated locations or subsequent Anchor Bolts due to the mis-alignment or layout amendment of the structural frame. Glass panes are fixed to the mullions and transoms by structural sealants and/or mechanical fixings.

Particular concern is given to the structural performance of structural sealant, in which the designers always regard the 10-year commercial warranty as its structural performance as quoted by the sealant manufacturer. This is misleading in the sense that the life expectancy of the structural sealant is only 10 years.

According to the latest review and test results found by leading structural sealant manufacturer Dow Corning, the mechanical properties of structural sealant are found apparently unchanged under the exposure to weather conditions in Florida, USA for a period of time of over last 40 years.

While there is no specific guideline on the inspection methodology of curtain wall system given in the Code of Practice for MBIS and MWIS and there are intensive aspirations from the industry about the acceptance criteria of

prescribed inspection of curtain wall system, a rational methodology in particular the inspection and supervision of repair for defective structural sealant in curtain wall system is hereby devised based on the American requirements and best practice with due consideration of the local conditions in Hong Kong and the region.

Recommendation will be made that the durability assurance of structural sealant can be achieved by conducting test conforming to ANSI Z97.1, in which the sealant is exposed to an energy of 295 MJ/m<sup>2</sup> for over 3,000 hours to simulate the sunlight exposure in Florida, USA, with adjustment to cater for the local conditions in Hong Kong and the region.

The workshop is tailor-made for the practising building professionals comprising Registered Inspectors, Authorized Persons, Registered Structural Engineers, Technically Competent Persons and façade practitioners to attend.

Language: English.

### **Speakers**

The **HKISC** is very pleased to have the renowned overseas and local curtain wall design practitioner and structural sealant experts from Germany, United States of America and Hong Kong to deliver the workshop.

### ***Fees & Registration***

Registration rates are devised, please make your reservation now.

Registration	HKISC member	HKIE member or Group of 5 +	Non-member
	HK\$ 1,200	HK\$ 1,500	HK\$ 1,800

The registration includes a copy of the lecture notes, a copy of full-day CPD certificate and tea refreshments.

Should you have further query, please do not hesitate to contact Mr. Sam CHAN at [samchan@hkisc.org](mailto:samchan@hkisc.org).

## Programme

Time	Programme
8:45 am – 9:15 am	Registration
9:15 am – 9:30 am	Welcome speech
9:30 am – 10:30 am	Evolution of Curtain Wall System Design by Ms. Nina Yiu, Associate Director, Arup Facade
10:30 am – 11:00 am	Tea Break
11:00 am – 12:30 pm	Prescribed Inspection of Curtain Wall System in USA  by Mr. Andreas Hiersemenzel (Dipl. Ing) Fachhochschule Ulm, Germany
12:35 pm – 1:55 pm	Lunch
2:00 pm – 3:30 pm	Structural Silicone in Curtain Walls: the Science and Durability  by Mr Larry Carbary, Dow Corning Limited
3:30 pm – 4:00 pm	Tea Break, Collection of CPD certificates;
4:00 pm – 5:30pm	Rational Methodology in Prescribed Inspection of Curtain Wall Systems in Hong Kong  by Mr Jack Guan, Dow Corning Limited
5:30 pm – 5:45 pm	Q & A

**REGISTRATION FORM**  
*(To be replied on or before 6 May 2017)*

**Full-day workshop on  
 Inspection Methodology of Curtain Wall System**

Please follow the 2-step registration procedure:

1. Fax the completed registration form to *Mr Sam CHAN* (Fax: 852-2334 6389) for preliminary registration.
2. Post the completed registration form within 7 days together with a crossed cheque payable to **Hong Kong Institute of Steel Construction Limited** to *Mr Sam CHAN*, at:

Room ZS 972, Department of Civil and Environmental Engineering,  
 The Hong Kong Polytechnic University, Hungghom, Kowloon, Hong Kong, China.

**on or before the deadline.**

**To: Mr Sam CHAN**

**Fax: 852- 2334 6389**

Personal Details:

Title	Name in full (Block Letter)	Name of Company	Tel.	Fax	E-mail address	HKISC/HKIE Membership No. (if any)
1.						
2.						
3.						
4.						
5.						

Postal Address:

\_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**CPD Certificate of Attendance** Please tick the appropriate box to indicate your choice:

- Yes, I/ we would like to have CPD certificate(s).
  Not request for certificate(s).

**Registration fees**

HKISC member	5 HKIE members or group of five	Others
HK\$ 1,200 each	HK\$ 1,500 each	HK\$ 1,800 each

## Biography of speakers



Ms Nina Yiu is an Associate Director who assists in leading building envelope group at Arup Hong Kong. She has more than 20 years of experience in facade consultancy, 14 of which are with Arup. She has extensive experience in building envelope design and project management.

In China, she worked on the first batch of project in Hua Hai Road, Shanghai before 1997, and later on the landmark tall buildings like Shenzhen Kingkey 100, Guangzhou International Finance Center, and recently on Shenzhen Bay CRC headquarters. She has also been involved in many complex developments in the East Asia regions.

Through the years, she faced the change on the requirements, role and involvement of facade consultant in the region, and strive to achieve the best and more appropriate design and service to the client and the project. She approaches design with a client-oriented principle, focusing on innovative and holistic solutions with integration of different systems and materials.

**Mr. Andreas Hiersemenzel** (Dipl. Ing) Fachhochschule Ulm, Germany



Andreas was Managing Director of the renowned curtain wall firm Josef Gartner Asian operations from 1982 to 2002. He was involved in Lloyd's Insurance Building in London while working at Josef Gartner design department in Germany before he founded Gartner's Asian operation becoming Managing Director of Josef Gartner (HK).

He expanded the operation to over 250 direct employees with projects in most commercial centres of Asia. The award of all projects was centered on understanding of the building and often proposing new ideas in advancing technology or project management.

To support the growth in the market, he established factories in Hong Kong and China in addition to the original German supply base. Project based assembly plants were established in Beijing, Shanghai, Hong Kong and Taipei.

In 2002, Andreas joined Builders Federal, a local high quality facade firm. Builders Federal completed two of Hong Kong's most highly visible curtain wall projects during this period. With Builders Federal Andreas showed his expertise in building a high quality facade like 3 Pacific Place in Admiralty with highly complex features attached to the facade. This building is an example of innovative facade works.

Here, he established a relation with European and North American specialist manufacturers in the high-tech building products market. One outstanding example of this collaboration is Asia's tallest revolving door built at Novotel City-gate Hotel in Hong Kong. Andreas established the need for quality maintenance of the building envelope, a recently established division in Builders Federal. His emphasis here was on-site investigation and subsequent establishment of the appropriate restorative measures, providing clients with a sound basis of planning and budgeting future work. He was

invited by developers and the respective trade organizations to lecture on maintenance and its ability to increase the life of the façade systems.

Andreas's expertise is linked to his German engineering background, technology know-how and a keen sense for architecture in the design and management of the building facade. Traveling frequently in Europe and the USA, he is in a position to advise on current developments and design trends.

**Major Projects Involved in Curtain Wall System :**

- Louis Vuitton Shops (Worldwide)
- Louis Vuitton Building (New York, USA)
- Bank of China Headquarter (Beijing, PRC)
- Jin Mao Tower (Shanghai, PRC)
- Bank of China Tower (Hong Kong)
- 3 Pacific Place (Hong Kong)
- Exchange Square I/II/III (Hong Kong)
- Chater House (Hong Kong)
- The Gateway (Singapore)
- Taipei Financial Centre (Taiwan)
- Premier Headquarter (Taipei, Taiwan)

**Major Projects Involved in Curtain Wall Consultancy:**

- ICBC Headquarter (Beijing, PRC)
- Port Authority Tower (Shanghai, PRC)
- L' Avenue Shanghai (Shanghai, PRC)
- Fortune Center (Qingdao, PRC)
- Golden Beach (Qingdao, PRC)
- Zhengzhou Commodity Exchange Building (Zhengzhou, PRC)
- Bank of China (Suzhou, PRC)
- ICC Chengdu Towers (Chengdu, PRC)
- BIIC (Bahrain)
- Limitless (Dubai)
- Al Shaqab (Qatar)
- Ras Laffan (Qatar)
- China Trust Bank (Taipei)
- Bahria Icon Karachi (Pakistan)
- Pacific Place (Hong Kong)
- Vicwood Plaza (Hong Kong)
- Science Park III (Hong Kong)
- Tseung Kwan O Hospital (Hong Kong)
- 39 Conduit Road (Hong Kong)
- Hotel and office extension at HHML6, Hung Hom (Hong Kong)



Mr. Lawrence Carbary joined Dow Corning in 1982 in research & development where he began working on the development and application of one-and-two part silicone sealant technologies for the construction industry. He is currently working on new high-performance technologies for commercial façade performance with regard to insulation, sealing and glazing techniques. He has been located in Fremont California (1985-1989), Seoul Korea (1997-2000) and Midland Michigan (currently) and is internationally known in the high performance façade construction field. His primary responsibilities are to design, develop, and validate new technologies for commercial façade performance. This includes insulation, sealing and glazing materials, energy efficiency, durability, sustainability and performance of buildings and infrastructure.

He is based at the company headquarters in Midland, Michigan where he is the senior member of Dow Corning's Façade Engineering and Architectural Design Team. He was the principal investigator of the US Department of Energy AARA project DE-EE0003915 on high performance facades.

Lawrence holds a Bachelor of Science degree in Chemical Engineering from the Michigan Technological University. His industry accomplishments include but are not limited to:

More than 30 publications for ASTM and construction trade journals on the topics of curtain wall sealing, aesthetic considerations and restoration.

Lawrence is the lead delegate for the US on ISO TC 59/SC 8 International Committee on Building Sealants and is the US working group expert on ISO TC 163 Energy Performance of Buildings and ISO TC 160 Glass in Buildings

Lawrence is very active within ASTM C 24 Committee on Building Sealants as demonstrated by his chairmanship of ASTM C24.87 International Standards, ASTM C24.30 Adhesion, his election into the ASTM C24 Sealants Hall of Fame in 2005, and a recipient of the ASTM Award of Merit with accompanying title of Fellow of ASTM in 2007. He served on COTCO 2009-2014 and is currently elected to the ASTM Board of Directors for 2015-2017.





Mr. Jack Guan is the Associated Technical Service and Development Manager based in the Hong Kong office of Dow Corning's Building and Construction Division. Internally, Jack is a leader in Dow Corning's Global Façade Experts Network and he is responsible to educate/train junior engineers in Dow Corning's offices worldwide. Externally, he oversees all the projects in the Hong Kong and Macau region, and provides technical services for Dow Corning's construction silicone sealant technology for these projects. Most importantly, Jack is responsible to provide technical advice or seminars to educate the façade industry professionals including building owners, architects, facade consultants, façade contractors and fabricators on proper structural and weatherseal sealant design and application.