FIRST ANNOUNCEMENT

THE HONG KONG INSTITUTION OF ENGINEERS
香港工程師學會

香港鋼結構學會
Hong Kong Institute of Steel Construction

Department of Civil and Environmental Engineering
The Hong Kong Polytechnic University

Half-day Seminar on
Quality Assurance of Structural Sealant in Building Construction

Organized by
The Hong Kong Institute of Steel Construction

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

Sponsored by
Dow Corning Asia

Date:	23 September 2014 (Tuesday afternoon)
Venue:	Chiang Chen Studio Theatre, The Hong Kong Polytechnic University,
Time :	2:00 pm (registration) for 2:15pm to 5:45pm followed by
	Visit to Jockey Club Innovation Tower at HK Poly U (6:00 pm to 6:30 pm)

Owing to the aesthetic appearance, structural sealant is popularly used in the construction of curtain wall, window and window wall systems. Besides the basic structural properties of structural sealant that a structural engineer should know, viz. the 138 KPa design permissible adhesive strength of structural sealant with its substrate for short term wind load; the 25% minimum elongation; the minimum bite length to thickness ratio lying between 1:1 and 3:1 and the minimum bite thickness is 6mm, etc, the curtain wall performance regarding aesthetics, air infiltration, water infiltration and thermal performance have a direct relationship to the glazing and spandrel areas and their methods of attachment.

One of the main concerns of our industry on the performance of structural sealant is the 10 year warranty period as quoted by the sealant manufacturer. This seems misleading since its life expectancy is obviously more than this. Therefore, if the 10 year warranty period can be elaborated as nothing related to the degradation of sealant strength but just a business aspect, the manufacturer should review the information through the continuous testing and recognized research findings of structural sealant.

According to recent findings by Dow Corning, the sealant properties remain apparently unchanged under normal exposed weather condition throughout the building design life of 50 years. Meanwhile, pioneer sealant manufacturers should advocate that the performance of structural sealant can be verified to ASTM C1394 on a periodic basis.

Other concerns are the quality assurance of the structural sealant in which some RSEs / RC and their TCPs may argue about the necessity to supervise the application of structural sealants **not only** at the fabrication yard **but also** on site by sampling specimens for audit tests.

For the control of new buildings, the prevailing quality assurance of sealants (especially structural sealants) is effective through the use of Properly Specified Quality control through the Sealant Compatibility Report, Sealant Adhesion Report and the Print Review report issued by the manufacturer and endorsed by the RSE and testing procedures such as the curtain wall safety test during curtain wall construction. When this is properly done, the RSE / RC's supervision at the factory / site may not be required. The in-process quality control would be elaborated in detail in the seminar.

For the control of existing buildings, the procedure of verifying the structural performance of structural sealants in curtain wall, window and window wall systems would be explicitly given in the seminar. The best practice in the quality assurance of structural sealant prevailing in the US would be briefed.

The seminar will also demonstrate that poor seals and insulation would have adverse effects on the performance of the curtain wall with regards to aesthetics, occupant comfort, premature degradation of curtain wall components and safety.

Trends in the codes of practice regarding the safety and thermal performance will be elaborated. Innovative design techniques to improve the curtain wall performance can be introduced into the façade construction that will render long term performance of the wall systems.

As it is known, the prescribed inspection and repair of the curtain wall buildings through the use of structural sealant is statutorily required in the Mandatory Building Inspection Scheme under the Buildings Ordinance.

While there is no practice prevailing in Hong Kong for the time being, the prevailing American best practice of inspection and repair of defective structural sealants in Hong Kong would be proposed for consideration to be used in Hong Kong.

The workshop is tailor-made for RSEs, building professionals, façade practitioners, Technically Competent Persons (in particular T3 under the RSE stream and T1 under the RC stream) to attend.

Time	**Programme**
2:00 pm	Registration
2:15 pm – 3:30 pm	Performance driven use of sealants in new building construction and in existing building renovation In-process Quality Assurance of Sealant Examination and evaluation of Structural Sealant in curtain wall system of existing buildings, practice in USA and other Western Countries Case Study of key projects that Dow Corning has been participated for inspection/evaluation in Hong Kong
3:30 pm – 3:45 pm	Break
3:45 pm – 5:00 pm	Thermal performance of existing and next generation curtain walls Innovative design for curtain wall vision and spandrel areas Examination and evaluation of curtain wall issues regarding poor performing insulation and seals
5:00 pm – 5:30 pm	Panel discussion on the methods and practices to evaluate in-situ curtain walls during the life of the building featuring a Façade consultant, Main contractor, Architect, and material supplier. Discussion of the techniques of safe and efficient façade inspections to validate performance of air, water, thermal and structural characteristics. The following concerns will be covered. (1) 10 year warranty period

	(2) In-process quality assurance (3) Trends in development of codes of practice (4) American best practice in inspection and repair of existing curtain wall buildings to be proposed for use in Hong Kong
5:30 pm – 5:45 pm	Q & A
5:45 pm	Collection of CPD certificates; End of seminar
6:00 pm – 6:30 pm	Visit to Jockey Club Innovation Tower, Poly U

Speakers

Mr. Lawrence (Larry) Carbary is a Construction Industry Scientist at Dow Corning Corporation. During his 32 year career he has been located in Fremont California, Seoul Korea and Midland Michigan. He is currently the senior member of Dow Corning's Construction Technical Service Staff working on new technologies for commercial façade insulation, sealing and glazing techniques. He is internationally recognized with more than 25 publications for ASTM and construction trade Journals on the topics of curtain wall sealing, aesthetic considerations and restoration. He is the lead delegate for the US on ISO TC 59/SC 8 International committee on Building Sealants. He 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. Currently he is the principal investigator of the US Department of Energy AARA project DE-EE0003915 on high performance facades as part of his work on high performance insulation systems for commercial construction

Dr. Mikkel Kragh is the global Façade and Architectural Design Leader for High Performance Building Solutions at Dow Corning, based at Dow Corning Business & Technology Center in Seneffe, Belgium. Mikkel holds an MSc in Civil and Structural Engineering and a PhD in Building Physics from the Technical University of Denmark. He is a Chartered Engineer (CEng), a Member of the Chartered Institute for Building Services Engineers (MCIBSE), and a Fellow of the Society of Façade Engineering (FSFE).
Mikkel leads a newly formed group of design specialists in the field of high performance façade solutions. The group connects Dow Corning's innovation portfolios and development programs with the design community including architects, engineers, specialist contractors, systems manufacturers, research centers and certification bodies.

Mikkel joined Dow Corning in 2011, after having worked internationally as a façade specialist on numerous prestigious construction projects with Arup consulting engineers and the Permasteelisa Group. In parallel with design work, he has led a number of collaborative R&D projects, consistently pushing the boundaries in the field of high performance façades. Having held various positions spanning research, specialist contracting, specialist consulting, supplier, and chairing the Society of Façade Engineering he has unique insight into high performance façade solutions as well as the role of façade engineering in the Construction Industry.

Stanley Yee a LEED® Accredited Professional, graduated from Concordia University in Montreal, Canada with a Bachelor of Engineering degree in Building Engineering. He has been working in the building enclosure industry since 1994 and spent 8-years in Hong Kong working for internationally based curtain wall contracting and facade consulting firms. While in Hong Kong, Stanley accumulated experience, and gained exposure and knowledge from both the contracting and consulting sides of the business. In 2002, Stanley returned to the US as a consultant and project lead whose clientele included developers, architects, contractors, specialty sub-contractors, and insurance carriers. He has worked on a variety of projects types; private, public and institutional with geographical diversity both nationally and internationally. Stanley's specialties are design assist/support, building enclosure air/water/thermal control, waterproofing, and testing and enclosure performance. In 2012 Stanley joined Dow Corning Corporation as a Facade Design and Construction Specialist for their High Performance Buildings Solutions group.
He is an active player of a number of industry organizations, including: the Building Enclosure Technology and Environment Council (BETEC) - a council of the National Institute of Building Sciences (NIBS) - though the Building Science and Technology (BEST) Conferences, and the Glass Association of North America (GANA). Stanley is an active participating member on GANA's programming and technical committees, sub-committees, and task groups. In January 2013, Stanley was elected as an Officer of the GANA Board of Directors representing the Energy Division.

Steve Zhou is part of the Façade Engineering and Architectural Design Team based in Shanghai. Steve was leading the facade team of KWP Shanghai from 2006 to 2012. He has worked on many prominent facade projects including the 221m tall Shanghai 21 Century Tower, a ten-building corporate headquarters in New Jiangwan Town, Chengdu Plot 7 developed by Tishman Speyer, Shangri-La Hotel in Yangzhou. With his previous 12-year experience, Steve specializes in both designing and engineering all types of facade systems for mixed used, sustainable and high performance buildings. Steve is a key contributor to build and shape our Architectural Insulation Panel business in both China and Korea and be instrumental in our other High Performance Building programs.

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REGISTRATION FORM

(To be replied on or before 12 September 2014)

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:

   The Hong Kong Institute of Steel Construction
   c/o Room ZS972, Department of Civil and Environmental Engineering,
   The Hong Kong Polytechnic University, Hunghom, Kowloon, Hong Kong.

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	Institution/ Membership No.
1.						
2.						
3.						
4.						
5.						

Item	Registration Fee	Total no. of registration	Sub-total
1. Regular registration (HKISC member price)	HK$ 500 each x	_____ person(s)	= HK$ _____
2. Regular registration (HKIE member /Group of 5 price)	HK$ 600 each x	_____ person(s)	= HK$ _____
3. Regular registration (Non-member price)	HK$ 800 each x	_____ person(s)	= HK$ _____

Postal Address
(for official receipt):

I enclose a crossed cheque (no._____) with a sum of HK$ _____for the registration fee of the captioned Seminar.

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).