



The Institution of Engineers, Malaysia

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TALK ON FASTENERS TO CONCRETE AND STEEL: NEW DEVELOPMENTS, FAILURES AND SOLUTIONS

Organised by the Civil & Structural Engineering Technical Division, IEM

BEM Approved CPD/PDP : 2 Hours Ref : IEM15/HQ/014/T

Date : 5 March 2015 (Thursday)
Time : 5.30 pm – 7.30 pm (Refreshments will be served at 5.00 pm)
Venue : Auditorium Tan Sri Prof. Chin Fung Kee, 3rd Floor Wisma IEM
Speaker : Dr. Jessey Lee

SYNOPSIS

Fasteners have played a very important role in today's construction industry, connecting building components together. Safety-critical fasteners to concrete are widely used in construction from small retro-fit applications, to large infrastructure projects. To compromise their function endangers life and leads to considerable financial consequences, including disruption to the structure. The contributing factors to failures are largely avoidable through an awareness of the factors that impact fasteners' performance. The absence of guidance in Australian design standards and codes of practice and the lack of training and supervision during fastener installation dramatically increases the risk of failures occurring. Manufacturers, suppliers, design engineers, installers and field engineers may all be implicated in a failure investigation where ignorance is not a valid defence. The Australian Engineered Fasteners and Anchors Council (AEFAC) was founded to address shortcomings in the industry and has developed technical guidance for specification, and an installer certification program to lift quality and safety standards in the industry.

The presentation will discuss new developments undertaken by AEFAC to increase safety in design and installation of fasteners to concrete. Also this presentation will introduce the development of a range of connections to hollow sections using blind bolts. The use of hollow section columns in the construction industry has been traditionally hampered by lack of access for a fully bolted site connection. However this may be overcome using a blind bolting system. Innovative blind bolted connections which require minimal fabrication and can be classified as rigid connections have been developed. Further, design guidelines for these connections have been established and fully validated using full scale tests and detailed non-linear FE analyses. The proposed connections are the first in the Australian market providing an efficient alternative for rigid beam-to-hollow section column connections in low rise structures.

BIODATA OF SPEAKER



Dr. Jessey Lee, MIE Aust. graduated with a BEng (Hons) (First Class) from the University of Melbourne in 2004, and completed her PhD at the same University in 2011. Her PhD research was funded through an Australian Research Council (ARC) Linkage Grant, which involved researchers from three Universities and two industry partners, Ajax Engineered Fasteners and Australian Tube Mills. She was also the recipient of the prestigious IStructE Best Research Candidature Prize in 2011, and the NAWIC Bovis Lend Lease Postgraduate Scholarship (for valuable research towards the advancement of the construction industry) in 2008.

Dr. Lee is currently the Training and Development Manager at the Australian Engineered Fasteners and Anchors Council (AEFAC) and a Research Fellow at Swinburne University of Technology in Melbourne. She was practising as a Senior Structural Engineer at Unitised Building Consulting and Robertbird Group, in Melbourne previously, specialising in design of modular structures made from cold formed steel sections. The modular units were fabricated in Australia fully fitted with finishes and façade.

Ir. Hooi Wing Chuen
Chairman
Civil & Structural Engineering Technical Division

ANNOUNCEMENTS TO NOTE:

- Preferential admission to talk shall be accorded to IEM members (pre-registration and online registration are NOT required). (telephone and/or fax reservation will NOT be entertained)
- **Non members** may also attend the talk but will be charged a registration fee of **RM50** and an administrative fee of **RM15**.
- For affiliate members, there will be no registration fee. However, they are requested to produce their membership card as proof of membership. For the list of affiliates, please refer www.myiem.org.my/content/memorandum_of_understanding-469.aspx.
- Limited seats are available on a "first come first served" basis (maximum 110 participants).
- IEM members are required to produce your membership cards for confirmation of attendance (CPD purpose).
- Latecomers will not be allowed to enter if the lecture hall is full nor be entitled to CPD.
IEM members who fail to produce their membership cards will be charged a fee of RM25.00.

FUNDS FOR IEM BUILDING FUND (WISMA IEM)

- Kindly be informed that IEM will be charging participants **RM15** as administrative fee for talks organized by IEM.
- The fee would be used to cover overhead costs, building maintenance expenses as well as to support the purchase of the new building.
- All contributions will be deeply appreciated by IEM
- Students are however exempted. Your understanding is greatly appreciated.

CPD HOURS CONFIRMATION

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Membership No:

Signature: