香港
鋼結構學會
Hong Kong Institute of Steel Construction

THE HONG KONG POLYTECHNIC UNIVERSITY
DEPT. OF CIVIL AND STRUCTURAL ENGINEERING
香港理工大學
土木及結構工程系

One hour Technical Seminar
Organized by
The Hong Kong Institute of Steel Construction
Sponsored by
Department of Civil and Structural Engineering, The Hong Kong Polytechnic University

DAMAGE ASSESSMENT OF STRUCTURES

27th August 2007
by

Professor Karen M Holford
Cardiff University, Wales, UK.

Abstract

In the 21st century it has and will become increasingly important to optimise the performance of both new and existing structures. Some engineering structures, such as aircraft landing gear, are designed to be fault-free, whilst others, such as highway bridges, are designed to be fault-tolerant. For both extremes, it is vital to have appropriate techniques for damage assessment, both in test conditions and for the duration of service life. Increased use of fibre-reinforced plastics in the aircraft and other industries demands sensitive, accurate and robust techniques for damage assessment. Advances in damage prognosis technology will enable increased performance and lower costs to be achieved across a range of industries.

Acoustic Emission (AE) provides a sensitive means of damage assessment. An overview of the techniques will be presented and examples of the use of AE in bridges, aircraft landing gear, offshore platforms and composite panels will be given to illustrate the strengths and scope of application of the technique.

About the speaker

Professor Karen Holford is a Chartered Mechanical Engineer, who joined the School of Engineering at Cardiff University in 1990. Prior to this, she worked as senior design engineer at AB Electronic Products Ltd, where she led a variety of projects, in particular in the automotive field with companies such as BMW, Jaguar and Rover. Her first degree was a BEng (Hons) in Mechanical Engineering from UWIST (Cardiff) which was sponsored by Rolls-Royce and her PhD in Acoustic Emission was also undertaken in Cardiff, at UCC, sponsored by the Health and Safety Executive. Karen is the Project Manager for a £2.4M investment in the Cardiff University Performance Laboratories. Karen's primary research theme is damage assessment using acoustic emission. An extensive programme of work on bridge monitoring has been conducted in collaboration with Physical Acoustics UK Ltd and has resulted in the successful transfer of the technology into the field as exemplified by contracts with organisations such as WS Atkins, Amey-Mouchel and The Highways Agency for the evaluation of major motorway bridges and background research. Currently a major research programme for fatigue damage assessment of landing gear is being conducted in conjunction with Messier-Dowty Ltd.

Date:	**August 27th 2007**
Time:	**6:00 pm for 6:30 pm – 7:30 pm**
Venue:	**Room Y403**, The Hong Kong Polytechnic University, Hung Hom, Kowloon.
CPD:	This seminar is recommended for **1** CPD hour
Certificate:	An attendance certificate will be issued upon request.

Free attendance but places are limited. Please send the completed registration form to Mr. Sam Chan, Secretary of the Institute of Steel Construction, c/o Department of Civil and Structural Engineering, The Hong Kong Polytechnic University, Hung Hom, Kowloon by 12:00 noon, 24th August 2007. (Fax No.: 2334 6389) or through email: ceslchan@polyu.edu.hk. For technical information, please contact Prof. S.L. Chan at 2766-6047

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Reply Form
To be faxed to 2334-6389 by
12:00 noon, 24 August 2007.

Registration Form

Seminar Name: ***DAMAGE ASSESSMENT OF STRUCTURES***

Seminar Date: **27 August 2007 (Monday)**

Name (in Full): ____ **(Mr./Ms./Ir /Dr./Prof.)***
*** Please delete as appropriate***

Company Name: ____

Contact Tel. No.: ____________________ **Fax:** ____________________ **Email:** ____________________

Correspondence Address: ____

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HKISC Member: **Yes** **Membership Number, if any :** ____________________
(please circle) **No**

Do you want the Attendance Certificate: **Yes** **No**
(please circle)

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Please send the completed registration form to **Mr. Sam Chan, c/o TU704, Department of Civil and Structural Engineering, The Hong Kong Polytechnic University, Hung Hom, Kowloon** **by 12:00 noon, 24 August 2007.** (Fax No.: 2334 6389)

The registration form may be downloaded from the web-site of The Hong Kong Institute of Steel Construction **(http://www.hkisc.org)**. You can photo copy this registration form.

Email confirmation will be provided when the form is received. Please be reminded to provide your email to us.