

香港理工大學, 土木及環境工程學系 THE HONG KONG POLYTECHNIC UNIVERSITY Department of Civil and Environmental Engineering





SECOND ANNOUNCEMENT

# Half-Day Workshop on Design Checks for Impact by a Falling or Moving Object

Organized by The Hong Kong Institute of Steel Construction Department of Civil and Environmental Engineering, The Hong Kong Polytechnic University Supported by Fire Division, The Hong Kong Institution of Engineers

Date:	4 <sup>th</sup> November 2016, Friday
Venue:	Room Y305, The Hong Kong Polytechnic University, Hunghom, Kowloon
Time:	1:45 pm (registration) for 2:15 pm to 5:45 pm

## <u>Programme Highlight</u>

Design provisions for the resistance of protective barrier structures or covered walkway against impact forces generated by fallen objects, vehicles, or trains, in codes of practices are typically prescriptive in nature. The basis of the prescriptive clauses is often difficult to trace whereas commonly used analytical models employing energy principles can be overly simplified.

Consequently, engineers often find it challenging to make estimates that are outside the scope of coverage of the relevant code clauses. For instance, neither the impact of a boulder rolling downslope or fallen window is covered by any loading code nor is the accidental dropping of a heavy object.

Amid lack of confidence in predicting impact forces with a reasonable degree of accuracies, full scale field trials are typically conducted to verify the performance of a built component when subject to certain impact hazard. Full scale experimentations serve the purpose of verifying the adequacy of the design of the component in withstanding a specific impact action, but it would be too costly to have such tests applied repetitively on different components, and to cover for different projected impact scenarios. In a nutshell, the structural response to dynamic impact force is totally different from that to static force.

This half-day workshop introduces closed-form solutions for the prediction of impact forces in the context of civil engineering and construction. The predicted impact forces can be applied either analytically or experimentally on a test-rig for estimating the nature and extent of the damage without requiring impact experimentations (which involves accelerating the impactor object onto the target). The presented solutions were derived from first principles and have been validated by laboratory experimentations thereby giving engineers, and product designers, confidence in adapting them to a diversity of engineering applications.

We are honoured to have Dr. Nelson LAM of Melbourne University as our speaker to share with the participants his expertise and insights in relevant topics pertinent to the theme.

## Speaker's Profile

**Dr. Nelson Lam**, who is reader in civil engineering at The University of Melbourne, has 34 years of experience in structural engineering. In the past 26 years, he has been working in the specialized field of impact dynamics, structural dynamics and earthquake engineering; is member of the standing committee for future revisions to the Australian standard for seismic actions; principal international advisor to the drafting of the National Annex to Eurocode 8 on the seismic design of building structures for Malaysia, and member of an Expert Advisory Group commissioned by the London Headquarter of The Institution of Structural Engineers to give advice over the international strategy of the institution in relation to earthquake engineering. Many of his international journal publications have been frequently referred to in the seismic code development for Australia and many countries in Asia. His achievement in research in this field was recognized by the award of the Chapman Medal (1999) and Warren Medal (2006) by Engineers Australia; the Best Paper Award (2004-2007) by the ISET Journal of Earthquake Technology.



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## Fees & Registration

Registration rates are devised, please make your reservation now.

Programme	HKISC	HKIE members	Non-member
		or group	
		registration of	
		5+	
Half-day	HK\$ 500	HK\$ 600	HK\$ 800
Workshop			

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

Should you have further query, please do not hesitate to contact Mr. Sam CHAN at <u>samchan@hkisc.org</u>.

## Programme

Time	Programme	
1:45 pm	Registration	
2:15 pm	Design checks for strength and stability	
3:45 pm – 4:00 pm	Tea Break	
4:00 pm	Estimation of localized damage	
5:30 pm	Q & A	
5:45 pm	End Collection of CPD certificates	

## Half-Day Workshop on **Design Checks for Impact by a Falling or Moving Object**

## **REGISTRATION FORM** (To be replied on or before 1 November 2016)

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:

HKISC c/oRoom ZS 972, Department of Civil and Environmental Engineering, The Hong Kong Polytechnic University, Hunghom, Kowloon, Hong Kong, China.

#### on or before the deadline.

#### Mr Sam CHAN Fax: 852-2334 6389

Personal Details:

To:

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

Item	Total no. of registration	Sub-total
1. Regular registration		
(Member*price)		= HK\$
	person(s)	
2. Regular registration		
(Non-member price)		= HK\$
	person(s)	

Postal Address

(for official receipt):

I enclose a crossed cheque (no.\_\_\_\_\_\_) with a sum of HK\$ \_\_\_\_\_\_for the registration fee of the captioned Workshop.

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).