



**1-day Intensive Course on the
SECOND-ORDER ANALYSIS AND
MATERIAL CONTROL TO
CODE OF PRACTICE FOR THE
STRUCTURAL USE OF STEEL 2005**

by

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Jointly organized by

The Hong Kong Institute of Steel Construction

&

Department of

Civil and Structural Engineering,

The Hong Kong Polytechnic University

sponsored by

The Structural Division, HKIE

supported by

Wo Lee Steel Co. Ltd.

Background : The Code of Practice for the Structural Uses of Steel 2005 Hong Kong has already been in use in Hong Kong for the design of steel structures. The material control and the second-order analysis, being the two cutting edges of the Code, attract some feedbacks from the industry. As such, this seminar is organized in promulgating the concept and rationale adopted behind these two topics in the Code with a view to the better grasp and understanding of the Code.

Objectives : The aim of the course is to provide the practicing engineer with an introduction to the design of steel framed structures to Code of Practice for the Structural Uses of Steel 2005 Hong Kong on the aspects of material control and second-order analysis and design. Examples for demonstrating the use of new method and Chinese steel include the 2008 HKIE/IStructE award winning projects.

Who Should Attend: The course per se is designed for practising engineers or engineers associated with the Structural Engineering industry, who wish to enhance their competitiveness in the design skill for steel structures. It is also suitable for senior undergraduate and post-graduate students currently engaged in the study and/or research in Structural Engineering.

CPD Credit: The course is designed for 1 CPD day. A certificate of attendance will be available upon request.

Medium of Instruction: The medium of instruction will be in English.

Reference for Course:

A set of Lecture notes will be distributed.

Fee: HK\$900 including lecture note and two tea breaks. Places are limited to 100 for room size.

Further Information: For course content and technical information, please contact Ir Professor S.L. Chan (Tel. 2766 6047), the Course Speaker, Department of Civil and Structural Engineering, The Hong Kong Polytechnic University.

Venue: Room M1603, The Hong Kong Polytechnic University, Hung Hom, Kowloon.

Narrative Biography of Speakers:

Ir Professor S.L. Chan is now teaching in the Department of Civil and Structural Engineering of The Hong Kong Polytechnic University. Professor Chan's research interests include the stability analysis and design of steel, nonlinear finite element analysis, glass and slender skeletal structures, steel, bamboo and aluminum scaffolding and pre-tensioning steel structures. He has published more than 250 papers in journals, books, conferences and keynote/invited papers in major steel conferences overseas. His book, "Non-linear static and cyclic analysis of steel frames with semi-rigid connections, Elsevier, 2000, pp.336", summarizes his work in the area before 2000. Currently Ir Professor Chan is the chief and founding editor of the international journals "Advanced Steel Construction" published in Hong Kong, "Steel and Composite Structures (2002-2005)" published in Korea and the regional editor of "International Journal of Applied Mechanics and Engineering" published in Poland. He also serves as a member of editorial boards in 7 other journals, and of ad-hoc committees in drafting guides for design of steel and glass structures in Hong Kong and the U.K. He was also elected as a member representing Hong Kong in the Research Panel of the Institution of Structural Engineers, U.K. and a member of expert panel of American Institute of Steel Construction (AISC), the President of the Hong Kong Institute of Steel Construction (HKISC) and adjunct professor at the Southeast University in Nanjing, Harbin Institute of Technology in Harbin and Tongji University in Shanghai. He is also a member of the editorial team of the textbook "Structural Uses of Glass" published

by the Institution of Structural Engineers, U.K. which has been used as a guidebook for design of glass structures in U.K., Hong Kong and Southeast Asia. Recently, in a research team of the Tongji University, Professor Chan was given the first class award for research in steel structures by the Education Ministry in the Mainland China.

Ir Professor Chan is a first principal consultant of the Code of Practice for the Structural Uses of Steel 2005 Hong Kong published by the Buildings Department. He developed a new, practical design method bypassing the prescriptive use of charts and tables in Code and coded the method in his developed computer program, Nida. Since 1998, the method of second-order and advanced analysis has been applied to the design of a number of practical steel structures which include numerous steel structures in Hong Kong, Mainland, Taiwan and Macau including the 2008 award winning projects in Hong Kong and Macau. The software Nida has been used by universities and companies in Australia, China, Hong Kong, Singapore, Taiwan, and U.K. for teaching, research and practical design.

Ir Dr. W T Chan is a senior structural engineer in the Buildings Department. His expertise is in the welding of structural steel, fire engineering, façade engineering and the use of high strength steel. He is recently appointed as the Vice President of The Hong Kong Institute of Steel Construction (HKISC) and has been appointed as the Chairman of the Jointing and Welding Sub-group under the HKISC since 2003. He has been actively engaged in organizing seminars/technical visits /non-vocational training, channeling technology transfer and exchange amongst the academia and the industry on jointing, welding and related matters. He was the assistant Secretary of the previous Steering Group for the draft of the Code. Further, he is currently the Secretary to the Technical Committee on the Structural Use of Steel in the Buildings Department, assisting in keeping review of the Hong Kong Steel Code, collecting views and feedbacks from the industry

regarding the use of the Code, and recommending to the Buildings Department on appropriate measures to be taken for the betterment of the steelworks practice in Hong Kong.

Course Programme:

08:45 - 09:00	Registration
09:00 - 10:30	Introduction – Background of limit state design code. Background of material control in the Code – current classification of steel materials, selection of steel based on the four essential requirements, structural design consideration, steel fabrication consideration.
10:30 - 10:45	<i>Tea break</i>
10:45 - 12:15	Use of steel to BS 4360 under the current control regime, use of British and American systems in the control of welders/welding procedures/DT and NDT, prevention of brittle fracture, and frequently asked questions, etc.
12:15 – 14:00	<i>lunch</i>
14:00 - 15:30	Design of steel frames by conventional methods ; Sway amplification method for sway frames, design charts for sway and non-sway frames, elastic buckling load factor λ_{cr} . Determination of λ_{cr} by computers and by hand method.
15:30 – 15:45	<i>Tea break</i>
15:45 – 17:00	Initial member curvature and out-of-plumbness in building frames. Methods to consider imperfections ; notional force and eigen buckling mode methods. Examples on design of practical steel frames using second-order computer analysis software.

Application Form

Course: - Second-order analysis and Material Control to Code of Practice for the Structural Uses of Steel 2005 Hong Kong (4 February 2009)

Fee: HK\$900 (includes course fees, course notes and refreshments).

Text: To be distributed by the speakers.

Name : Mr. / Ms. / Ir / Dr / Prof. _____ In Chinese : _____
(in block letters, surname first) (Please use the same name as on your H.K. Identity Card)

Address: _____ Mobile No. / Tel. No.: _____

Employer's Name _____
And Address : _____ Tel. No.: _____

Position Held : _____ Email: _____

Please send application form with cheque* to Miss Miya Lau, The Hong Kong Institute of Steel Construction c/o TU743 The Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong (Tel.: 852-3400-3965 , Fax: 852-2334-6389).

*Cheques should be crossed and made payable to **Hong Kong Institute of Steel Construction Limited**, fees are non-refundable. Places are limited; therefore, early application is strongly advised. **The closing date for application is 30th January 2009 (Friday).**