



Registration Form  
 Department of Civil Engineering, Indian Institute of Technology,  
 Bombay, Powai, Mumbai 400076  
 Tel. (022) 25767309 / 7301 Fax. 25767302  
 Email: sghosh@civil.iitb.ac.in

A Special Lecture Series for Structural Engineers  
**Performance-Based Plastic Design of  
 Earthquake-Resistant Structures**

On Friday, 29 January, 2010 at IIT Bombay

Name: (Dr./Ms./Mr.) \_\_\_\_\_  
 (Please use CAPITAL Letters)

Designation \_\_\_\_\_

Organisation \_\_\_\_\_

Mailing Address \_\_\_\_\_  
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Tel.(Off.) \_\_\_\_\_ (Res.) \_\_\_\_\_

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Category  Selective Participants  
 (please tick)  Student

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A Special Lecture Series for Structural Engineers

**Performance-Based Plastic Design of  
 Earthquake-Resistant Structures**

In Mumbai

On Friday, 29th January, 2010

Organised by



Department of Civil Engineering  
 Indian Institute of Technology Bombay

Venue

Institute Auditorium  
 Indian Institute of Technology Bombay  
 IIT Campus, Powai, Mumbai – 400 076.

In association with



The Institution of Engineers  
 (India)



Indian Society of Structural  
 Engineers



Association of  
 Structural Rehabilitation

### Introduction to the Lecture Series:

Performance-Based Seismic Design (PBSD) is the future of earthquake resistant design of structures. The current practice of elastic force-based seismic design is deemed to be replaced soon by advanced seismic design guidelines recommending superior design approaches, such as displacement-based design, energy-based design, etc. A new seismic design methodology, named the Performance-Based Plastic Design (PBPD) method, has been developed by Prof. Subhash C. Goel (University of Michigan, USA) and his associates, which can control expected degree and distribution of structural damage during strong seismic events. In order to achieve this, PBPD method uses drift and pre-selected yield mechanism as key performance criteria.

PBPD is a direct design method (which does not involve iterations), that satisfies the complex PBSD requirement of controlling damage. However, it keeps the design steps simple, providing an easy transition from the elastic force-based design to the inelastic displacement-based design. PBPD results in enhanced performance and safety. In addition, the use of the plastic design approach helps in achieving a structure with lower initial cost, and control on seismic damage reduces the life-cycle cost of the structure as well.

The special lecture series is intended for experienced design engineers well-versed with seismic design concepts. Two 2-hour lectures will include background theory, complete step-by-step design procedure, and detailed design examples of commonly used steel and RC framing systems. Participants will also receive detailed course notes for these lectures.

### Speaker:

Subhash C. Goel, Professor Emeritus, Department of Civil and Environmental Engineering, University of Michigan, Ann Arbor, MI, USA.

### About Prof. Goel:

Since joining the University of Michigan as an Assistant Professor in 1968, Prof. Goel has worked extensively in the field of earthquake-resistant design of structures, which has had an enormous impact on our knowledge of seismic behavior of building structures and on design practices. Particularly noteworthy among his many contributions are his studies of special concentrically braced frames, development of special truss moment frames, the truss analogy theory for beam-column connections, and the development of performance-based plastic design methodology. During his career, Prof. Goel has authored more than 400 research papers and presentations, and has been involved in over 30 research projects. Besides being known as a researcher of international repute, Prof. Goel is an eminent mentor and educator whose previous doctoral students can be found in academic/research institutions around the world, including the US, India, Korea, Japan, Thailand, Lebanon, and Jordan. Among the numerous awards he has received, the most notable ones are Lifetime Achievement Award and the T.R. Higgins Lectureship award from the American Institute of Steel Construction. Prof. Goel has recently published a book titled "Performance-Based Plastic Design: Earthquake Resistant Steel Structures" (ICC, USA, 2008).

### Who Should Attend?

Structural consultants and architects involved in specification, design and application of reinforced concrete and steel building systems.

Government, public works, housing board, & land transport authorities involved in ordering and supervising reinforced concrete and steel buildings & infrastructure.

### PROGRAMME

14.00-14.30:	Registration
14.30-14.35:	Welcome address by Prof. Pradipta Banerji
14.35-14.45:	Keynote address by Dr. V. V. Nori
14.45-14.50:	Introduction to the speaker by Prof. Siddhartha Ghosh
14.50-16.45:	Lecture session I by Prof. Subhash Goel
16.45-17.00:	High tea
17.00- 19.00:	Lecture session II by Prof. Subhash Goel

### Registration Fees

Members of IEI/ASTR/ISSE/Students: Rs. 400/-

Consultants/Architects/Contractors: Rs. 500/-

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Gopal Rai, R&M

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