

THE WORKSHOP

Since the release of the Concrete Structures Standard AS3600 in 2009 (plus the Amendments), Civil and Structural engineers have been using this document to design a multitude of concrete structures however they may wish to improve their full understanding of all the equations and clauses in this document.

This workshop is therefore designed for engineers who wish to hone their skills with reinforced concrete design, understand the Code clauses better or just refresh the structural design principles learnt at University. With the advent of computers many engineers have either forgotten or lost the understand of basic structural design and thus need to carry out basic structural checks by hand or quick estimates of size and reinforcement requirements. The use of simple charts can often provide the preliminary structural sizing required for beams, slabs or footings.

PROGRAMME

DAY 1

8.30 - 9.00 Registration

9.00 - 10.30 SESSION 1 - Basics of AS3600 - 2009

- Load Combinations to AS1170.0
- Durability Issues
- Material Properties eg: Concrete Modulus E, Flexural Strength f'_{cf} , Tensile Strength f'_{ct} , Mean
- Strength f_{cm} , Fire Design to AS3600 - 2009

10.30 - 11.00 Morning Tea

11.00 - 12.30 SESSION 2 - Strength / Design

- Bending Strength
- Design Charts
- Ductility Requirements using 500 MPa steel
- Rectangular beams, T beams
- Singly & Doubly Reinforced Beams
- Worked Example & Tutorial Exercise

12.30 - 1.30 Lunch - Provided at venue

1.30 - 3.00 SESSION 3 - Serviceability / Beams

- Allowable Deflections to AS1170.0, AS3600 - 2009
- Beam Deflection (Deemed to comply method)
- Crack Control in Beams & Slabs to AS3600 - 2009
- Worked Example & Tutorial Exercise

3.00 - 3.30 Afternoon Tea

3.30 - 5.00 SESSION 4 - Deflection / Slabs

- Deemed to Comply (L/D) Deflection Method
- One Way Slab (single and continuous) Deflections
- Four Sided Slab Supported Deflections,
- Shrinkage Reinforcement
- Worked Example & Tutorial Exercise

DAY 2

9.00 - 10.30 SESSION 5 - Column Design

- Short & Slender Column Design using AS3600 - 2009
- Axial Load-Moment Interaction Graph derivation
- High Strength Concrete Column Design
- End Stiffness - Restraint Factors
- Worked Example & Tutorial Exercise

10.30 - 11.00 Morning Tea

11.00 - 12.30 SESSION 6 - Wall Design / Shear

- Wall Design – Axial, Moment & Shear Strength
- Beam and Slab Transverse Shear Design
- Mohr Circle – Principal and Shear Stress
- Worked Example & Tutorial Exercise

12.30 - 1.30 Lunch - Provided at venue

1.30 - 3.00 SESSION 7 - Footing Design

- Simple Square Footing Design
- Soil Pressure Basics, Kerns
- Rectangular Footing Design
- One-way Bending, One-way Shear and Two-way
- (Punching Shear) Footing Failure
- Worked Example & Tutorial Exercise

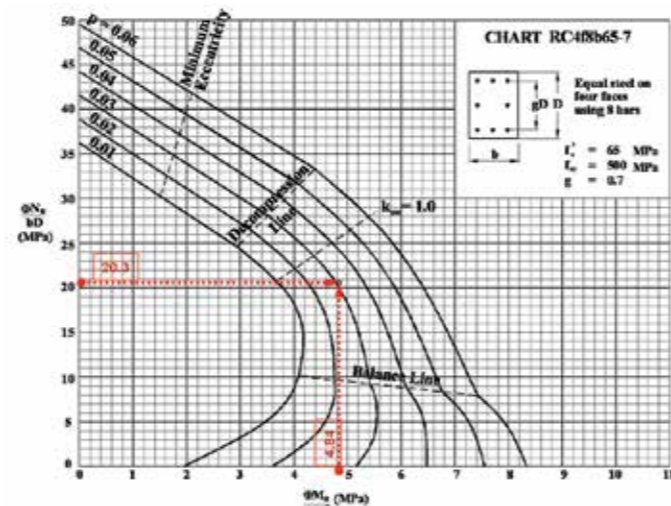
3.00 - 3.30 Afternoon Tea

3.30 - 5.00 SESSION 8 - Development Lengths & Detailing of Reinforcement

- Development length L_{sy} in tension and compression
- Deemed to comply steel reinforcing detailing requirements as per AS3600 - 2009

Certificates of Attendance and Feedback Sheets handed out.

5.00 - 5.15 Certificate of Attendance and Feedback sheets.



SPEAKER

Paul J. Uno BE MBdgSc MIE(Aust) CPEng
Engineering Training Institute Australia

Paul Uno has over 35 years experience in the design and construction industry. He has worked for companies such as CSR Readymix, Transfield, Boral, Spancrete, Dept. of Housing, Australian Institute of Steel Construction, HH Robertson and the Cement And Concrete Association of Australia.



He presented precast concrete courses nationally for the NPCAA in 2005 and 2006 and was also acknowledged as a key contributor to the NPCAA/CIA publication "Precast Concrete Handbook". Paul is also the present chairman of the Australian Standards committee BD-066 for the Tilt Up & Precast (Prefabricated) Concrete Standard AS3850.

He has been a member of the American Concrete Institute for the past 16 years and a member of the Concrete Institute of Australia for the past 30 years. At present he is a consultant, a presenter for Engineering Training Institute Australia as well as a University lecturer.

He currently lectures in Properties of Materials (Concrete) at Civil Engineering, Sydney University as well as lecturing at UNSW in the faculty of Built Environment in both in Construction Science (Materials) and in Building Structures (Concrete & Structural Steel Design).



Requirements

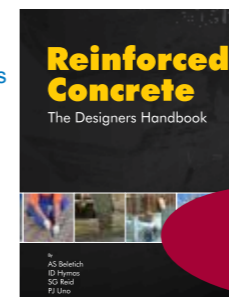
- A scientific calculator
- Concrete Standard AS3600-2009

Professional Development

Attendees may be credited towards IEAust Continuing Professional Development (CPD) requirements. Members of IEAust are required to undertake a minimum of 150 hours of equivalent CPD every 3 years.

Further Information

For any further information on this course please contact
Joanne - 0413 998 031 or
Vincent - (02) 9899 7447 or
email info@etia.net.au



CALCULATORS REQUIRED

VENUES

- * Sydney The Hills Lodge, 1 Salisbury Rd (cnr Windsor Rd) Castle Hill NSW (02) 9680 3800
- * Brisbane Mercure Hotel, cnr North Quay and Ann St Brisbane QLD (07) 32 37 2300
- * Melbourne Hotel Grand Chancellor, 131 Lonsdale Street Melbourne VIC (03) 965 6 4000
- * Perth IBIS Hotel, 334 Murray St reet Perth WA (08) 9322 2844

REGISTRATION FORM

Please return to:

Engineering Training Institute Australia
PO Box 913 Baulkham Hills NSW 1755
Phone (02) 9899 7447 Fax (02) 9899 5995
Email: registrations@etia.net.au

Reinforced Concrete Design (BASIC) Workshop at

- | | | | |
|-----------------|----------------------------|--------------------------|------|
| • Sydney NSW | Tue 24 - Wed 25 March 2015 | <input type="checkbox"/> | Tick |
| • Brisbane QLD | Wed 15 - Thu 16 April 2015 | <input type="checkbox"/> | |
| • Melbourne VIC | Wed 22 - Thu 23 April 2015 | <input type="checkbox"/> | |
| • Perth WA | Mon 13 - Tue 14 July 2015 | <input type="checkbox"/> | |

No. of Attendees Total
Two Day Workshop @ \$1,120 pp

Text Required

"Reinforced Concrete - The Designers Handbook" @ \$170
by Beletich, Hymas, Reid and Uno (2013)

Total Payment \$

(GST included)

Cheque [payable to 'Cement & Concrete Services']

Name

Name

Company

Street / PO Box

Suburb Postcode

Ph () Fax ()

Email

Person Handling Payment (please print)

VISA M.CARD AMEX 3 or 4 DIGIT ID#

Cardholders Name

Expiry Date / Signature

NB: Cancellations made more than 5 working days prior to a course will incur a 20% processing fee of the full registration amount. Cancellations made 5 working days or less will incur forfeiture of the full registration fee.