INDUSTRIAL FLOORS & PAVEMENTS WORKSHOP

WORKSHOP

8.30 – 9.00 Registration

9.00 –10.30 **Soil Properties & Tests; Concrete Flexural Strengths & Fatigue tests**

This section deals with the basic soil properties & tests such as CBR –California Bearing Ratio, k –modulus of subgrade reaction, LL –Liquid Limit, PI –Plasticity Index, SPT –Standard Penetration Test, CPT –Cone Penetration Test (Dutch cone), Unified Classification System for Soils (eg CH, ML), Soil Modulus Es, Equivalent Youngs Modulus for Soil Ese . Concrete properties addressed include flexural strength and tensile strength of concrete (and associated testing) according to AS3600 and the alternative values suggested by the CCAA & RTA. Tutorial exercises (and solutions) will be issued in the final 20 minutes of this segment to be completed by all.

10.30 – 11.00 Morning Tea

11.00 – 12.30 **Basic Theory of Concrete Pavement Thickness Design**

This section outlines the history & derivation of concrete pavement models & tests adopted over the past 100 years and how one arrives at the present various thickness formulas that exist in the marketplace today and how they may differ from each other. Course attendees will work through each of these thickness formulas and calculate a pavement thickness according to local and overseas guidelines. Models to be addressed in detail (eg. soil springs vs elastic soil modulus) include the formulas of Boussinesq, Winkler, Westergaard, Meyerhof, Kelly, Pickett plus FEM, T34 –1985 (CCAA-Aust), T48 –2009 (CCAA-Aust), TR34 –2003 (Concrete Society-UK). Tests carried out over the years to substantiate these formulas will also be shown. Tutorial exercises (and solutions) in simple conventional concrete thickness design to be completed by all.

12.30 – 1.30 Lunch (Sit Down Buffet in Restaurant)

1.30 – 3.00 **Wheel Loads, Post Loads, Uniformly Distributed Loads & Combined Loads**

This section continues the theme of the previous section with respect to thickness design. Parameters such as Interior Loading vs Edge Loading, Wheel loads vs Post loads (eg Racking loads), and UDL's are compared –primarily using the CCAA manual vs Meyerhof and Westergaard. Punching shear calculations and deflections under UDL's are outlined in accordance with the CCAA-2009 manual and the T48-UK-2003 publication. Software addressing conventional slab design will be shown. Tutorial exercises (and solutions) in simple conventional concrete thickness design to be completed by all.

3.00 – 3.30 Afternoon Tea

3.30 – 5.00 **Floor Flatness & Levelness, Dowel Design, Abrasion Resistance, Steel Fibres, Joints and Curling, Plastic Shrinkage Cracking**

This section addresses the remaining areas important in industrial floor design. It explains the basis of the F-number system used in the USA (for flatness and levelness) that is a more superior system than that adopted in Australia at present, namely the Class A, B and C floor tolerance system. The basics behind dowel design and key joint selection will be addressed as will the aspects of early sawcutting and proper finishing techniques to achieve proper floor abrasion properties. Finally slab curling and concrete slab thickness using steel fibres will be addressed. The various software packages used in the specialised area will be highlighted. *Tutorial exercises will again be completed by all.*

5.00 – 5.15 **Certificate of Attendance and Feedback sheets.**

SPEAKER

Paul J. Uno BE MBdgSc MIE(Aust) CPEng
Director - Cement and Concrete Services

Paul Uno has over 30 years experience in the design and construction industry. He has worked for companies such as CSR Readymix, Transfield, Boral, Dept. of Housing, Australian Institute of Steel Construction, HH Robertson and the Cement and Concrete Association of Australia. He has presented many seminars on behalf of the Cement and Concrete Association as well as answering structural technical enquiries from engineers, architects, builders and developers from all around Australia between 1990-98.

He was a part time lecturer at UTS (on Broadway) for senior civil/structural students doing the Concrete Design III course from 1996-98. During his period with AISC and CCAA he has given guest lectures at RMIT, QUT, Curtin University, SAIT, University of WA, University of Adelaide, Ballarat CAE, UNE (Armidale), Sydney University, UNSW, Wollongong University, Newcastle University and UWS (Nepean and Hawkesbury).

He is a member of the American Concrete Institute and Concrete Institute of Australia. At present he is a part time lecturer in Properties of Materials (Concrete) at UNSW for building students and for engineering students at Sydney University.

REGISTRATION

NEW CCAA-T48-2009

WORKSHOP
INDUSTRIAL FLOORS

Please return to: **Joanne**

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I/We wish to register for -

WORKSHOPS

- Sydney NSW Thursday 18th March 2010 ☐
- Brisbane QLD Thursday 25th March 2010 ☐
- Melbourne VIC Wednesday 9th June 2010 ☐
- Perth WA TBA ☐

For VENUES refer to other courses within this brochure.

	Number		Total
→ **WORKSHOP**		@ $510	
→ CCAA T48-2009 Manual		@ $95	
→ (Version 2) Software Design Programme for T48-2009 & Westergaard Method		@ $440	

Total Payment ☐ Cheque $

[Cheques payable to 'Cement & Concrete Services' note GST already included]

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NB A 20% processing fee applies to registration cancellations made earlier than 5 working days before the course date. Cancellations made 5 working days or less incur forfeiture of the entire registration fee. No discounts apply.

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

CALCULATORS REQUIRED