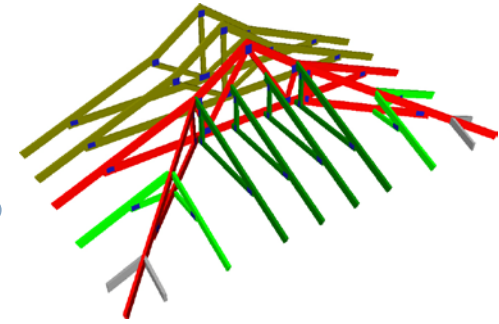


# Roof Engineering in line with South African National Standards – Current Practice



18-20 May 2010

Midrand –Johannesburg, South Africa

**MiTek's Roof Engineering Conference will focus on reviewing the current practice of roof design in compliance with relevant SANS codes, establishing design innovation and engineering education that are such essential ingredients to design compliance.**

ECSA Validation No: ITC08/0001/M (3 Credits)

FIETA Accreditation No: 064

---

MiTek Industries SA (Pty) Ltd  
Roof Engineering in line with South African National Standards – Current Practice

**MiTek**<sup>®</sup>  
*creating the advantage*

# Programme

DAY 1	18 May 2010	DAY 2	19 May 2010	DAY 3	20 May 2010
08:30	Registration	08:30 -	Structural Material	08:30	Structural Material
-09:15		10:00	SANS10163: The structural use of timber – Roly Adams Wood comes from Trees! <ul style="list-style-type: none"> <li>• Perception that it is not an Engineerable Material, carpenters and others cut it to suit.</li> <li>• Need for Grading: Brief description of Grading Rules</li> <li>• Architects specs “all timber to be 38x152 grade 6....!” etc</li> </ul>	-10:00	SANS 10162 Part 2: Design of Cold-Formed Structural Steel – Johan Hafenschner The relevant design differences between cold-formed structural steel and other roofing material will be discussed. Then a detailed discussion of designing using the limit state theory in cold-formed steel will be presented.
09:15-	Welcome	10:15-	The Manufacture and Erection of Timber Roof Trusses -	10:15-	Manufacture of Light Gauge Steel Trusses
10:00	Stewart Murray – MD MiTek Industries SA	12:30	SANS10243 section 11 – Bracing: Timber Roofs – Roly Adams Standards overview:- <ul style="list-style-type: none"> <li>• ITC; Collective industry experience; Tertiary institutions</li> <li>• Responsible Engineer can over-rule and self design, but WHY?</li> </ul> Connections. <ul style="list-style-type: none"> <li>• Hurricane Clips , Correct nailing and Bolting</li> <li>• Show failures</li> </ul>	12:30	Bracing of Steel Roofs – Richard Bailey A practical demonstration of manufacturing cold-formed steel trusses will be done. This will be followed by a presentation showing the bracing required on a cold-formed steel roof.
10:15-	Engineering Insurance and liability - Roly Adams	13:45-	The General Procedures and Loadings to be Adopted in the	13:45-	The Application of the National Building Regulations
11:00	Owners Perceptions - Responsibility for Works Insurance (Bond conditions, Lender’s inspection for valuation for risk , not structural adequacy, False Hopes/ Expectations) Solution (in part). Place burden with LA, A19 enforcement. Inform Home Owner at plan submission time Problem with Developers (interim owners) perceptions re cost of inspection/cert.	15:00	Design Of Buildings: SANS 10160 – Professor Peter Dunaiski Brief overview of SANS 10160 Basis of Structural Design and Actions on Buildings and Industrial Structures and a short description of the basis of structural design, including ultimate limit state and serviceability limit state provisions. Detailed presentation of Part 2 of the code containing the requirements for own weight and imposed loads with specific reference to roof design. <ul style="list-style-type: none"> <li>• Detailed presentation of Part 3 of the code dealing with wind loading with specific reference to roof design</li> </ul>	15:00	SANS10400 – Part L – Victor Booth An overview of the extensive revisions to PART L of the new SANS 10400. How this section of the “deemed-to-satisfy” rules of the National Building Regulations may be used and misused.
11:00-	Legal Consequence of Failure - Tony Aimer	15:15-	Bracing – Johan Hafenschner	15:15-	The Future of The Roofing Industry – Mike Newham
12:30	A number of structural failures of timber roofs will be presented and possible failure reasons analysed. The role of insurance policies at different levels of the industry and in particular the role of a professional indemnity policy of the design engineer. Changes to the A19 form contained in the new National Building Regulations. The NHBRC insurance provisions and limitations. The role of the architect Responsibilities of technical personnel in regard to the ECSA code of ethics	16:00	Standard bracing details, bracing systems and types and the latest accepted empirical bracing rules will be described briefly. Focusing on the lateral bracing of compression members, the principles and theory behind the design formulae given in the 2001 amendment to the timber design code will be presented and examples of calculations, based on the different assumptions will be illustrated.	16:00	Quo Vadis, steel, timber and design codes – Limit State Design: EC5
13:45-	The Evolution of Roof Design - Heinrich Kammeyer				
15:00	Architectural background to design of roofs and the impact roof design has on buildings – the engineering and architectural perspective in one				
15:15-	20/20 Demo - Mike Newham				
16:00	Demonstration of the latest software in steel and timber				

*Tea will be served at 10:00 & 15:00 daily. Lunch will be at 12:30*

# Meet the Speakers

Heinrich Kammeyer



Heinrich qualified at UCT with a B.Arch in 1971, obtained his M.Arch in 1992 at UP and has submitted his PhD for evaluation at UP. He started teaching and practicing in 1972. He taught because he practiced and practiced because he taught. He taught design and construction as an integrated subject because as designers we have to make our drawing-details into buildings. He is still involved in both parts of his career.

Johann Hafenscher



Johann is a professional engineer who studied and obtained his degree in civil engineering at the University of Pretoria in 1977. He has been with MiTek since 1980, initially with Gang-Nail, one of the two forerunner companies which merged to become MiTek. Johann's work comprised design of timber roof structures, checking of software, design checking, bracing design, preparing bracing details and carrying out site inspections. Experience gained in observing structural behaviour during site inspections in relation to bracing design details proved invaluable in developing and improving empirical bracing standards and rules.

Mike Newham



Mike graduated from the University of Pretoria with a BSc Eng. (Civil) degree in 1978 and obtained his Professional Registration in 1983. After working for the PWD for 5 years and the NTRI for 3 years, he joined Hydro-Nail in 1988 as an Engineer and Software Programmer. After running R&D, Customer Support and the Factory Operations, he was promoted to Operations Director in 1999.

Professor Peter Dunaiki



Professor Dunaiki is a Professor in Structural Engineering at the Department of Civil Engineering and Vice-dean of Teaching for the Faculty of Engineering at the University of Stellenbosch. Field of expertise : Steel construction and experimental mechanics. Member of the SAICE Working Group for the revision of the South African loading code SABS 0160-1989. Chairman of the SABS sub-committee TC5120SC591 for SANS 10160 Basis of Structural Design and Actions on Buildings and Industrial Structures

## Richard Bailey



After registering as a professional engineer, spent seven years at the CSIR doing timber engineering research, including investigating failures and developing stress grading methods. He was then Technical Director of ITS, a timber Prefabricated Truss System in South Africa, for two and a half years. After then going into roof erection for a year and a half, he joined MiTek and started the light gauge steel division known as Ultra-Span in 2000. Under his stewardship the division has grown to a size such that last year alone about 250 thousand square metres of roof were sold. Roughly half of this is exported into Africa and the other half sold locally.

## Roly Adams



Roly graduated from The University of The Witwatersrand University in 1972 with a B.Sc. (Eng) degree. In 1992 he obtained an MBA degree from the same University, after a varied Civil Engineering career, he specialised in Structural Engineering and has been employed by MiTek for 26 years as at April 2009. Started as a structural Engineer at Gang-Nail and managed the Engineering department under the Technical Director until his promotion to the European Office in the early 1990's. Thereafter Roly was promoted to General Manager (Engineering) of MiTek South Africa. In 1995 he was promoted to Engineering Director with a portfolio fundamentally focussed on Engineering Management and Quality Maintenance. In 2007 Roly was given the additional responsibility of MiTek's Roll Formed Products.

## Tony Aimer



Tony is a professional engineer who graduated from the University of Cape Town in 1971 and returned to the then Rhodesia to work for two years with the Ministry of Roads in the bridge design office. He then joined a consulting structural engineer for approximately 3 years before moving to the University of Rhodesia where he lectured in structural engineering until 1980. After immigrating to South Africa and working for Ove Arup in 1980 he opened his own consulting practice in 1981 where he has been designing structures in concrete, steelwork, brickwork and timber for architectural applications. The principal focus of his practice at present is insurance claims, professional indemnity claims and assisting as an expert witness in technical arbitrations. Tony is committed to the raising of professional standards across the board in the timber roof trusses industry.

## Victor Booth



Victor Booth is a Registered Professional Engineer with a Master's Degree in Engineering and has worked in the Construction Industry for 44 years with Contractors, Project Managers and Consulting Engineers. He has wide ranging experience with the design and construction of concrete, steel, masonry and timber structures. He is an acknowledged expert in the structural use of timber and was chairman of the Institute for Timber Construction (ITC) from 1991 – 1995. He is a Past Chairman of the Structural Engineering Division of the South African Institution of Civil Engineering and the Institution of Structural Engineers (1999 & 2000.) He served both on the board of the National Home Builders Registration Council (NHBRC) (resigning in March 2001) and as a Technical Advisor to the NHBRC since its inception playing a leading role in compiling the NHBRC's Home Building Manual specifications. He served on the Building Industries Training Board (BITB) and is an active member of many SABS code and specification development committees including the Construction Standards Committee and the National Building Regulations Committee. He is a consulting structural engineer in general practice as well as specialising in timber structures; Forensic / Investigative Engineering; Structural Surveys (including roof structures and their coverings); Due Diligence Reports and Mediation / Arbitration services.

# Terms & Conditions

**Booking:** Complete the booking form and fax it back to MiTek on (011)314-3981, or email to [sa-training@mitek.co.za](mailto:sa-training@mitek.co.za) with payment confirmation.

**Costs:** ECSA Members: R7,500.00 (inc VAT)  
Non ECSA Members: R7,900.00 (inc VAT)

**Method of Payment:** Please note that payment must be received before the event. Payment can be made to:

Account Name:	MiTek Industries SA (Pty) Ltd.
Bank:	Standard Bank
Branch:	Midrand
Code:	001155
Acc No:	202456420
Ref:	CPD2010{Initials & Surname}

**Dress Code:** Casual office attire

**Terms:**

- No shows on the day of the programme will be charged at 100%. A substitute delegate is welcome at no extra cost.
- You may cancel your registration in writing up to ten working days before the programme takes place, incurring a 10% administration cost.
- No refunds will be given to delegates who do not attend without giving prior notice.
- Proof of payment must be received on the first day of the conference.
- **31 MARCH 2010**

**Registration Closing:**

BOOKING FORM			
Full Name		Title	
Surname			
ID No			
Position			
Organisation			
Postal Address			
VAT No			
Tel			
Fax			
Email			

I hereby acknowledge that I understand and agree the terms and conditions of my registration

Signature

Name

\_\_\_\_\_

\_\_\_\_\_