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INSTITUTE OF
STRUCTURAL
ENGINEERING

CONCRETE AS STRUCTURAL ENGINEERING MATERIAL



An informative and practical seminar for engineers, practitioners and contractors regarding the use of concrete as structural engineering material

STIAS, Stellenbosch
Friday 12 May 2017

1 CPD **R 3000**
CREDITS EARLY BIRD





SEMINAR OBJECTIVE

The seminar sets as objectives to convey

- the importance of concrete properties in the fresh state;
- good site practice for sound hardened mechanical behaviour and durability;
- successes and problems of existing concrete marvels;
- the essence of durability design by Structural Engineers;
- fundamentals of advanced and emerging concrete construction materials.

SEMINAR FOCAL POINTS

The focus of this seminar is on

- the properties of fresh concrete, in order to understand and design for prevention of plastic shrinkage cracking;
- general aspects to ensure good site practice including, factors influencing test results, self-compacting concrete and constructing for durability;
- concrete marvels that capture the imagination, scrutinising their concrete and structural design and evaluating their mechanical and durability performance over their design life;
- cracking and durability, considering durability performance under the combined effect of mechanical action and deterioration processes of chloride-induced corrosion and alkali silica reaction;
- advanced construction materials, including high-strength concrete, ultra-high strength concrete, strain-hardening and strain-softening fibre reinforced concrete;
- lightweight foam concrete as emerging construction material, its mechanical and durability properties;
- principles of sustainability in the built environment.

SEMINAR PROGRAM

TIME	TOPIC	SPEAKER
08:00 - 08:15	Registration & Refreshments	
08:10 - 08:30	Welcome & Introduction	Gideon van Zijl
08:30 - 09:40	Fresh concrete Cracking of plastic concrete and the prevention thereof	Riaan Combrinck
09:40 - 10:00	Concrete marvels Hoover dam	Master student 1
10:00 - 10:30	Coffee/Tea break	
10:30 - 11:50	Concrete in practice Handling of concrete	George Evans
11:50 - 12:10	Concrete marvels Petronas Twin Towers	Master student 2
12:10 - 13:00	Lunch	
13:00 - 13:40	Durability and Sustainability Crack formation and durability	Gideon van Zijl
13:40 - 14:10	Durability and Sustainability Alternative materials	Wibke de Villiers
14:10 - 14:30	Concrete marvels Pontchartrain Causeway	Master student 3
14:30 - 15:00	Coffee/Tea break	
15:00 - 15:20	Concrete marvels Portuguese National Pavilion	Master student 4
15:20 - 16:00	Advanced materials Lightweight concrete	Tata van Rooyen
16:00 - 17:00	Advanced materials Advanced concrete materials	Gideon van Zijl

PRESENTERS



Prof Gideon van Zijl

Gideon is Professor at Stellenbosch University, where he heads the division for Structural Engineering. He is registered as professional engineer with ECSA, and holds a PhD from Delft University of Technology in The Netherlands, as well as a DEng from Stellenbosch University based on contributions to structural mechanics and durability in Structural Engineering.

As chairperson of international RILEM committees, he has co-edited two books on durability of advanced concrete materials. He is member of the working group revising SANS10100, which is in the final draft stage. More than 40 Masters and Doctoral students have performed research in concrete materials and structures under his supervision over the past 15 years.



Dr Riaan Combrinck

Riaan is a senior lecturer at Stellenbosch University, where he also obtained both his MSc and PhD on the cracking of plastic concrete in slab-like elements. He is part of the Unit of Construction Materials which concentrates on teaching, research and consulting as well as the head of the structural laboratory, both within the Civil Engineering Department of Stellenbosch University.

Riaan has been involved in various commercial and academic research projects on concrete related issues over the past 7 years. He has supervised four Masters students as well as authored and co-authored three international journal and 12 international conference publications. His current research focus is on the fresh properties of concrete.



Mr George Evans

George holds a Diploma in Advanced Concrete Technology and has been involved with concrete for the past 40 years. He has been involved in projects ranging from process and power plants, dams, infrastructure roads and bridges, mining, marine works, and floor construction in no fewer than 16 countries from Columbia in the west to Korea in the east and the remote Island of St Helena in between.

George chairs the test methods and SANS 10100-2 Part B workgroups which are currently revising concrete test methods and the execution of structures. He is currently employed at PPC where he consults with a wide range of clients on concrete and cement related issues.



Mrs Wibke de Villiers

Wibke is a lecturer at Stellenbosch University, where she also obtained her MSc on the effective lengths of web compression elements in trusses. She worked for two years as structural design engineer for Aurecon before joining the Civil Engineering Department of Stellenbosch University, where she is part of the Unit of Construction Materials which concentrates on teaching, research and consulting.

Wibke's research field involves alternative sustainable building materials as well as the life cycle analysis thereof. She is currently enrolled as part-time PhD candidate, focussing on alternative masonry units. She has supervised six Masters students and authored and co-authored 9 international conference publications.



Mr Tata van Rooyen

Tata is a lecturer at Stellenbosch University where he completed his BEng and MScEng degrees. He is currently enrolled on a part-time basis as a doctoral candidate. He is part of the CDSI group headed by his supervisor Prof Gideon van Zijl and collaborates with the Unit of Construction Materials.

Tata has co-supervised two masters students and is supervising two more masters students. He has co-authored 1 international journal and 3 international conferences. He has worked on industry research projects and is focusing his research on lightweight concrete.

CPD CREDITS

The seminar is accredited for 1 Continued Professional Development credit with the ECSA.



REGISTRATION

To register, please provide your details on the registration template provided at

<http://shortcourses.sun.ac.za/courses/c-7/2017-4737.html>

Please Note: Our system will only generate an invoice for your records if you **request an invoice before payment.**



PAYMENT

Early Bird: R 3000.00

Payment must be received by 31 March 2017

Normal Bird: R 3850.00

Payment must be received 5 working days prior to the course date



PAYMENT INSTRUCTIONS:

On registering for a course you will receive an automated email featuring our bank details for payment. If you are paying your own registration and do not require an invoice, please use this method.

If however your company is making payment on your behalf and requires an official tax **invoice**, please contact oliviavw@sun.ac.za **before** making payment.

PLEASE EMAIL PROOF OF PAYMENT TO:

Ms. Olivia van Wyk

Stellenbosch University, Department of Civil Engineering

Email: oliviavw@sun.ac.za

Enquiries: 021 808 4070

Please indicate which course date and/or city you plan to attend

WE LOOK FORWARD TO WELCOMING YOU AT THIS COURSE



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