

***SOUTH AFRICAN NATIONAL COMMITTEE ON LARGE DAMS
SHORT COURSE
1 – 3 August 2012***

Pietermaritzburg

Advanced Technologies for Construction of Dams and Environmental Considerations during Implementation



SANCOLD



About the Short Course

The South African National Committee on Large Dams (SANCOLD) Short Course will be held at the Protea Hotel Hilton, in Hilton, KwaZulu-Natal, between Wednesday 1 and Friday 3 August 2012.

SANCOLD invites all from Africa and the wider family of ICOLD to participate in the short course which will include technical presentations and a technical visit.

This is an ECSA Continuing Professional Development (CPD) accredited event. This Short Course is a Category 1 activity and offers 3.0 credits.

Programme

Overview

The short course will commence on Wednesday morning 1 August. On Wednesday and Thursday there will be presentations by keynote presenters and of technical papers. A technical visit to the Spring Grove Dam has been arranged for Friday 3 August 2012.

Preliminary Programme

The short course programme is shown below:



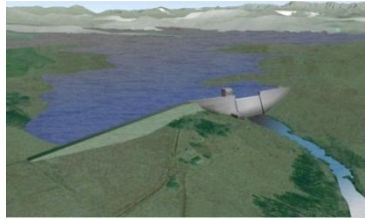
Start Time	Description	Organization	Presenter
01-Aug-12	Wednesday		
07:00	Registration	Chairperson:	
08:30	Opening	SANCOLD/BKS	Danie Badenhorst
08:35	Keynote: National planning by DWA	DWA	
09:20	Regional planning	Umgeni Water	Kevin Meier
10:05	Tea	Chairperson:	
10:35	Environmental aspects related to dam implementation	Iliso	Terry Baker
11:20	Fly ash in concrete	AshResources	Andrew Mckeen
12:05	Commissioning tests on environmental flood outlet works: Berg River Dam case study	Univ of Stellenbosch	Prof Gerrit Basson & Robyn Kime



12:45	Lunch	Chairperson:	
13:45	Recent development in RCC Dam mix design and construction technology	ARQ	Dr. Quentin Shaw & David Cameron-Ellis
14:30	Geotextiles in dams	Gigsa/Kaytech & DWA	Peter Davies/ Kelvin Legge
15:15	Tea	Chairperson:	
15:45	Practical aspects of small embankment dam design and construction, and challenges met	Aurecon	A J Shelly, D J Hagen and F J M Denys
16:30	SANCOLD AGM	SANCOLD	-
02-Aug-12	Thursday		
Start Time	Description	Organization	Presenter
07:30	<i>Late Registration</i>	Chairperson:	
08:00	Environmental risk management during implementation	Consultant	Dr. Mike Mentis
08:45	Advanced Technologies for Construction of Dams	Knight Piesold	
09:30	Advanced Technologies for Construction of Dams	DWA	
10:15	Tea	Chairperson:	
10:45	Long term behaviour of dam materials	Consultant	Louis Hattingh
11:30	Introduction to Spring Grove Dam	TCTA	T Tente/K James
11:40	Environmental aspects related to Spring Grove Dam - Land acquisition	TCTA	Liza van der Merwe



12:05	Environmental aspects related to Spring Grove Dam – Natural & Social	TCTA	Kogi
12:30	<u>Lunch</u>	Chairperson:	
13:30	Design of Spring Grove Dam	BKS	Danie Badenhorst
13:55	Construction of Spring Grove Dam	TCTA & BKS	James Nyakale & Peet Viljoen
14:40	Questions and answers - Spring Grove Dam	TCTA & BKS	All SGD presenters
15:00	Tea		
15:30	Site visit safety and general arrangements	Group Five	Andrew Olden
15:50	Closure	SANCOLD/DWA	
03-Aug-12	Friday		
Start Time	Description	Organization	
08:00	Full day visit to Spring Grove Dam site	TCTA/BKS/ Group Five	



Technical Site Visit (Friday 3 August) – Spring Grove Dam

The Mgeni Water System in KwaZulu-Natal supplies water to approximately five million people, as well as the industrial sectors in the Durban and Pietermaritzburg regions, the economic hubs of the province. The growth in water demand and intermittent drought periods since 2003 have made it necessary for the Department of Water Affairs (DWA) to implement Phase 2 of the Mooi Mgeni Transfer Scheme (MMTS-2).



Approximately four years ago, the Trans-Caledon Tunnel Authority (TCTA) received a Directive from the Minister of Water Affairs to fund and implement MMTS-2, which consists of the Spring Grove Dam, the Spring Grove pump station and the pipeline from Spring Grove Dam to the Mpofane river, a tributary of the Umgeni River. Once complete, Spring Grove Dam will transfer water to the Midmar Dam for supply to the uMgeni River supply area.

The construction of Spring Grove Dam on the Mooi River, upstream of the existing Mearns Weir and about 2 kilometres southwest of Rosetta in the KwaZulu-Natal Midlands, started in February 2011. The dam's components include a roller compacted concrete (RCC) dam with an earth embankment; three gauging weirs.

Impoundment of the dam is scheduled for November 2012 with commissioning within the first quarter of 2013.



The Dam is a 37-metre-high RCC concrete gravity dam with an outlet structure and has an 11.5-metre-high embankment on the right bank. A fish barrier weir has to be constructed to prevent bass from migrating upstream and affecting the trout fishing industry. Roads in the reservoir basin also have to be diverted and an 11-metre-high, 300-metre-long fill has to be constructed in the reservoir.

The dam is being constructed using an optimised RCC mix, which is a mix with a lower cement and fly ash content and adapted cementitious material, aggregate and sand ratios. This mix does not segregate during placement and has excellent workability and tensile strength; it is impervious and has lower temperature development characteristics, thus meeting the design requirements. The RCC materials also create a significant cost saving on RCC materials in relation to the 2010 developed mix used at the De Hoop Dam. The RCC mix

that has been developed at Spring Grove Dam is also an economical optimisation of the high-paste mix concept that has been used all over the world. Changed practices have to be used for placement of the mix.

Key dam characteristics are listed below.

Dam Type	Composite RCC
Total Length of Dam Wall (m)	607
Dam Height (m)	37
Spillway height (m)	32
GPS Coordinates Dam site	29 58' 12"E 29 19' 12"S
Spillway length (m)	70
Category	III
Spillway crest type	Ogee
Gross storage volume (million m ³)	139.5
Firm yield (million m ³ /a)	60
Full Supply Level (m)	RL 1433.5
Catchment area (km ²)	344
Water surface area at full supply level (ha)	1022
Outlet works	Twin System with Multi-level Intakes
Embankment type	Earthfill
Embankment height (m)	11.5
Outlet capacity (m ³ /s)	29.5

Registration



Short course registration is now open.

In order to register for the short course please complete and return the Registration Form, with payment, by no later than 16 July 2012.

Please note that:

- Prices for attendance are detailed on the registration form
- Payment is required by cheque or by bank transfer; confirmation of registration will be given after payment has been received in full
- The registration fee does not include accommodation

If you have any queries regarding registration, please do not hesitate to contact:

Mrs Rene Burger

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email: burgerr@sun.ac.za

Marechia Basson

Tel: 079 4909 210

Email: msb@aspt.co.za



Venue



SANCOLD Short Course will be held at the Protea Hotel Hilton, in Hilton, KwaZulu-Natal.

Protea Hotel Hilton is an easily accessible land mark with comfortable and tranquil surroundings and is ideal for Conferencing, Banquets and Weddings. Protea Hotel Hilton is also wheel chair friendly.

Protea Hotel Hilton is situated in the small town of Hilton and a mere 500 metres from the Johannesburg/Durban national highway. Just an hour's drive from Durban and only 12 km from Pietermaritzburg, the administrative centre of KwaZulu-Natal. Hilton is the gateway to the popular Midlands Meander Arts and Craft route and the magnificent Drakensberg Mountain Range.

Directions from King Shaka International Airport

Take N2 South turn left into N3 glide-off Pietermaritzburg. Carry on through Marianhill Toll Plaza, Carry on N3 pass Pietermaritzburg. Take Hilton off ramp to Hilton Avenue, turn left into Hilton Avenue, the Protea Hotel Hilton is on the left hand side.

Address:
1 Hilton Avenue
Hilton
KwaZulu-Natal
South Africa

+27 33 343 3311

GPS CO-ORDINATES

29° S 32' 49.1" 30° E 17' 59.8"

www.proteahotels.com/protea-hotel-hilton



REGISTRATION FORM – SANCOLD Short Course 2012

Kindly complete this registration form and fax it, together with a letterhead of your company to fax number +27-21 4130447 or mail the form to: The Secretary, Institute for Water and Environmental Engineering, Department of Civil Engineering, University of Stellenbosch, SANCOLD Short Course 2012, Private Bag X1, MATIELAND, 7602, SOUTH AFRICA. Or by email to: msb@aspt.co.za

On receipt of the completed registration form, an invoice will be faxed or emailed to participants. Payment can be made electronically (details will be provided on the invoice) or by cheque, to be made payable to University of Stellenbosch.

CLOSING DATE FOR REGISTRATION AND PAYMENT: 16 July 2012

Title		Surname		Name	
Company					
	VAT registration number:		Business registration number		
	Postal address:		Street address:		
Tel	()		Fax	()	
Email			Delegate:	Y / N	
Special dietary requests			Presenter:	Y / N	
Name, tel & email of person regarding payment			Fulltime Student:	Y / N	
			SANCOLD Membership number:		

FEES: R7900-00 for 3 days (Includes tea, lunch, course notes, presentations and technical tour); Discounted fees: SANCOLD member: **R7400**; Discounted fees: Fulltime MScEng/MEng or PhD students at SA University: **R3700**; Exhibition stand: Contact Rene Burger by 18 June 2012 for details.

R6300-00 (R5900) for 2 days; **R4700-00 (R4400)** for 1 day (SANCOLD member fees in brackets)

Indicate dates of attendance: 1 Aug 2 Aug 3 Aug

The fee for late registration after 16 July 2012 will be 20 % more than the above fees.

Cancellations will be accepted in writing and without penalty, up to 10 working days prior to commencement of the course. Participants cancelling in writing less than 10 working days prior to commencement of the course will be liable for a 50% cancellation fee. Following registration without attendance and without written cancellation, delegates will be held responsible for the full course cost.

I HAVE READ AND AGREE TO THE CONDITIONS OF REGISTRATION AS STIPULATED ABOVE

Signature: _____ Date: _____ Total Cost (R):

Enquiries can be directed to:

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