Workshop & Lectures on Reinforced Earth Structures

Organised by: Centre for Infrastructure Engineering and Management and School of Engineering, Griffith University Gold Coast campus

Date: September 27, 2006
Venue: Building G06- Lecture Theatre 1.04
Griffith University Gold Coast Campus

See "Registration form" for daily registration

For additional information please contact (preferably by e-mail)

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Introduction

During the September Break at Griffith University, on 27th September, a Practice oriented Lectures and Courses are arranged in Reinforced Earth Structures. The Workshop on Reinforced Earth will be conducted by Dr. James Collin who has authoritative experience on this subject now for more than three decades.

These Workshops and lectures as described above for the September Event are selected with a view to compliment those which have already been presented in the previous lecture series and also, they are of direct relevance to on-going projects in Southeast Queensland.

Dr James Collin, the Workshop Leader in Reinforced Earth and Geosynthetics has been involved with the design and construction of over 100 reinforced soil slopes and geosynthetic reinforced retaining walls. He has been responsible for the design of an underpinning system (micropiles/pin piles) to stop the vertical and lateral settlement of a 150-year old church caused by an adjacent excavation; permanent tieback retaining wall systems and coordination of construction operations for roads and highways. Over the last decade alone Jim has been involved with the design and construction of 15 column supported embankment projects across the US. He is the principal investigator for a FHWA research program to develop design guidelines for column supported embankments.

Additionally, Jim was responsible for the design and construction of temporary and permanent earth retention system. Jim has been teaching courses for the Federal Highway Administration and the National Highway Institute since 1995, specifically, he has taught extensively the Designs with Geosynthetics and also Soil Improvement, Soil Slope and Embankment Design.

Griffith UNIVERSITY

Registration Form / Tax Invoice

Griffith University ABN 78 106 094 461

Workshops on Geotechnical and Pavement Engineering

Griffith University, Gold Coast, 25-29 September 2006

TO REGISTER: email, fax, mail

Email: a.bala@griffith.edu.au | **Fax**: +61(0)7 5552 8065 | **mail**: Prof. A. S. Balasubramaniam, Griffith School of Engineering, Gold Coast Campus, Griffith University, PMB 50, Gold Coast Mail Centre Queensland 9726, Australia

DETAILS OF ATTENDEE

First Name: Last Name:

Organisation:

Email:

Phone: Mobile:

Fax:

Post Address:

State: Postcode:

WORKSHOP FEES (*25-29 September 2006*)

Please indicate day of participation and total amounts

☐ **AUD $ 390** (*GST included*) for Wednesday, 27 September

TOTAL AMOUNT: [AU $]

PAYMENT METHODS

☐ **CHEQUE ENCLOSED**

All Cheques crossed and payable to Griffith University (Griffith University is GST registered, ABN 78 106 094 461) Mail cheques to Prof. A. S. Balasubramaniam, Griffith School of Engineering, Gold Coast Campus, Griffith University, PMB 50, Gold Coast Mail Centre, QLD 9726, Australia. ***Please enclose your registration form.***

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Please send your REGISTRATION / TAX INVOICE FORM **by 18th September** that will help us to operate this workshop more efficiently.

***PLEASE NOTE*: THIS REGISTRATION FORM SERVES AS A TAX INVOICE WHEN COMPLETED. PLEASE RETAIN A COPY FOR YOUR RECORDS.**

DAILY PROGRAMME

27th September 2006 (Wednesday)

08:30 – 9:00 am Registration

09:00 – 10:15 am Column Supported Embankments with Geosythetic Reinforced Load Transfer Platforms – Design and Construction Issues – Part 1 - The problems associated with constructing highway embankments over soft compressible soil (*i.e.,* large settlements, embankment stability, and the long period of time required for consolidation of the foundation soil) have lead to the development and/or extensive use of many of the ground improvement techniques in use today. Wick drains, surcharge loading, geosynthetic reinforcement, and light weight fill (i.e., geofoam), have all been used successfully to construct embankments over soft soils. However, when time constraints are critical to the success of the project, owners have resorted to another innovative approach: column supported embankments (CSE) reinforced with geosynthetic reinforcement. The design and construction issues associated with this technology will be covered in this lecture. In the last 15 years, this technology has been used successfully on several projects both in the United States and abroad.

10:15 – 10:30 am Coffee break

10:30 – 11:00 am Column Supported Embankments with Geosynthetic Reinforced Load Transfer Platforms – Design and Construction Issues – Part 2 – will focus on the design of the load transfer platform (LTP). Currently there are two approaches to the design of the LTP, the catenary and the beam method. The advantages and disadvantages of each method will be presented. A review of construction practices for the LTP will also be presented.

11:00 – 12:15 pm **MSE Walls Design Considerations** – the standard of practice for the design of MSE walls in the US is based on the Federal Highway Administration's Design Guidelines and the National Concrete Masonry Association Design Guidelines. Both will be reviewed with special emphasis on drainage considerations and recommendations for designing these structures when groundwater and or surface water are present.

12:15 – 01:00 pm Lunch

01:00 – 02:45 pm **MSE Walls Design and Construction** – the second part on MSE walls will focus on construction and lessons learned from MSE failures.

02:45 – 03: 45pm **Reinforced Soil Slopes Design -** the US practice for the design of reinforced soil slopes is presented and if time permits an example slope will be analyzed using ReSSA a computer program developed for the Federal Highway Administration for the design of reinforced soil slopes.

03:45 – 4:00pm Coffee Break

04:00 – 05:15 pm **Reinforced Soil Slopes Construction –** A case history of the design and construction of a reinforced soil slope will be presented.

Bio-data of Lecturers

Dr. James Collin

Dr. Collin has been teaching courses for the Federal Highway Administration and the National Highway Institute since 1995. Specifically, he has taught Designing with Geosynthetics for six years, and Demo 116 Soil Improvement for one year. He has also been involved with the development of two new courses one on Shallow Foundations and one on Soil Slope and Embankment Design. Both courses will be offered starting in the fall of 2001. Dr. Collin also teaches a one-day course on Segmental Retaining Wall design for the National Concrete Masonry Association. At the university of Maryland he has developed two graduate courses for the Civil Engineering Department, one of the courses is titled "Designing with Geosynthetics" the second is titled "Soil Improvement".

In addition to his vast teaching experience, Dr. Collin has extensive practical experience both as a specialty contractor and geotechnical consultant. One of the areas of his expertise is earth retention systems. As a specialty contractor Dr. Collin was responsible for the design and construction of temporary and permanent earth retention system. This included tieback retaining walls, soil nailing, slurry walls, tangent pile walls, and freeze walls.

As a geotechnical consultant, Dr Collin has been involved with the design and construction of over 100 reinforced soil slopes and geosynthetic reinforced retaining walls. He has been responsible for the design of an underpinning system (micropiles/pin piles) to stop the vertical and lateral settlement of a 150-year old church caused by an adjacent excavation; permanent tieback retaining wall systems and coordination of construction operations for roads and highways; design of frozen earth walls using finite element analyses; and supervision and monitoring of installation of frozen retaining systems.

Over the last decade The Collin Group has been involved with the design and construction of 15 column supported embankment projects across the US. Dr. Collin is the principal investigator for a FHWA research program to develop design guidelines for column supported embankments.