

**Engineering Group
of the Geological Society**

**Proposed Working Party on
Periglacial and Glacial Engineering Geology**

INTRODUCTION

John Charman & Chris Martin



PROGRAMME

- 2008 Deserts working party approached engineering group with a proposal for a new working party on glacial and periglacial soils. This would be a natural sequel to the work of the tropical soils and deserts working parties.

PROGRAMME

- Jan 2009 Preliminary approval, subject to focussing the subject matter
- July 2009 Final proposal to limit the subject matter to 'relict' glacial and periglacial soils

REASONING

- Potential coverage of engineering in both active and relict glacial and periglacial conditions huge
- Already well published engineering practice in active periglacial conditions in arctic countries such as Canada, USA, Russia, but very different approaches
- Similarly well published engineering practice in glacial mountain regimes such as Switzerland, Austria, USA
- However, relict or fossil glacial and periglacial conditions are well represented in the UK and engineering case studies have been well published
- Timely to reappraise the 1999 CIRIA/DETR publication "Engineering in Glacial Soils"

STEERING GROUP
1st meeting in November 2010

Chairman

John Charman: Consultant

Secretary

Chris Martin: BP (formerly Arup)

David Giles: University of Portsmouth

Kevin Privett: Hydrock Consultants

Mike Winter: Transport Research Laboratory

Julian Murton: University of Sussex

Jim Griffiths: University of Plymouth

TASKS OF THE STEERING GROUP

- Discuss and propose the subject/title of the working party
- Provide draft terms of reference
- Discuss and propose officers and membership of the working party
- Compile an outline scope and structure for the report
- Discuss potential programme and budget

PROPOSED WORKING PARTY

- Editor - Prof Jim Griffiths (University of Plymouth)
- Chair – Chris Martin (BP)
- Secretary – Anna Morley (Arup)
- + c.9 Lead Authors (from across academia and industry)

PROPOSED TERMS OF REFERENCE

- Report will be comprehensive, **state-of-the-art** review on the ground conditions associated with **relict** Quaternary periglacial and glacial environments and their materials, from an engineering geological viewpoint.
- There necessarily will be appropriate coverage of the **processes and environments** that formed these relict materials.
- Not intended to define the geographic extent of relict periglacial and glacial environments around the world, but to **concentrate on ground models** that would be applicable to support the engineering geological practitioner.

PROPOSED TERMS OF REFERENCE (cont.)

- Report that will act as an **essential reference handbook** for professionals and valuable textbook for students and others.
- Style will be **concise and digestible** by the non-specialist, yet be authoritative, up-to-date and extensively supported by data and collations of technical information.
- Use of **jargon will be minimised** and necessary specialist terms will be defined in an **extensive glossary**.
- **Copious illustrations**, many of which will be original, and many good quality photographs.

PROPOSED TERMS OF REFERENCE (cont.)

- Report will embrace **full range of topics**, from latest research findings to practical applications.
- Endeavour to identify likely **directions of future research** and to predict future development.
- Based on **world-wide experience** in periglacial and glacial terrain.
- WP members **collectively responsible** for whole report.
- Although each WP member will be the named author or co-author of one or more chapters, all members expected to **review and contribute** to chapters drafted by others.
- Individual book chapters included in the **Thomson Book Citation Index**.
- Completed within **3 years**

TABLE OF CONTENTS & AUTHORS

1. Introduction (*Chris Martin*)
2. Quaternary Setting (*Sven Lukas*)
3. Geomorphological Framework (*Dave Giles & Jim Griffiths*)
4. Glacial Conceptual Ground Model (*Dave Evans*)
5. Periglacial Conceptual Ground Model (*TBC*)
6. Geohazards & Problematic Ground Conditions (*TBC*)
7. Engineering Investigation & Assessment (*TBC*)
8. Engineering Behaviour & Properties (*TBC*)
9. Design & Construction Considerations (*Mike Winter*)

WORKING PARTY STATUS

- July 2011 - Steering Group last meeting.
- Nov. 2011 - Publication Proposal reviewed by EGGS, GS, GSPH and EG Community (Forum).
- Early 2012 - Aim to start Working Party (pending funding)

ANY COMMENTS / QUERIES / SUGGESTIONS?

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Thank-you!

