International Conference on Ground Anchorages and Anchored Structures in Service 2007

Purpose of the conference

This two-day conference will provide guidelines on good practice in maintenance testing and service behaviour monitoring of individual ground anchorages and anchored structures. It will seek to illustrate the performance of anchorages in practice via case histories, together with recent developments in non-destructive testing and corrosion protection.

Millions of ground anchorages have been installed over the past 80 years with relatively few recorded failures. However, as permanent anchorages in service become older, the subject is of growing importance, particularly for anchorages installed over 30 years ago: many of which have been designed with corrosion protection considered inadequate by today’s standards.

Water levels reached 150-year highs in 2002 with associated flooding across Central and Eastern Europe, so the importance of anchored river and seawalls can not be overemphasised. Winter storms are now judged by the insurance industry to represent the largest potential event loss in Europe. Elsewhere in the world, the highest potential losses are associated with earthquakes and typhoons, where anchored slopes are vital in resisting landslides and rock avalanches.

Routine programmes of inspection and monitoring can extend the service life of the anchored structures that represent key elements of a country’s infrastructure. Where inspection highlights unacceptable tendon corrosion or over-stressing, the results provide early warning of the need for precautionary or remedial measures in order to safeguard the integrity of the anchored structure.

In spite of these benefits, sufficient attention is not currently paid to routine maintenance inspections and service behaviour monitoring. The potential consequences should not be ignored.

Papers for this conference will cover a wide range of topics including:

- Inspection procedures and physical condition recorded in service
- Service behaviour monitoring procedures and performance in service
- Dam rehabilitation
- Rock bolts in tunnels and mines
- Non-destructive integrity testing
- Corrosion protection systems
- Case histories of satisfactory performance, shortcomings and failures in service
- Recommendations and standards of practice related to inspection and monitoring

Professor G S Littlejohn DSc, FREng
Chairman of the Organising Committee

Format

The format will include presentations on current issues with many practical examples of ground anchorages and anchored structures in service. The conference will comprise two days of papers and discussions.
Call for Papers

Prospective authors of papers supporting the specified topics are invited to submit an abstract for this international conference, of up to 500 words by 28th February 2007.

If you will be submitting a paper for this conference please inform us by e-mailing papers@ice.org.uk indicating which of the conference themes it will fall under along with your full contact details: name, organisation, e-mail, address and telephone number, or by filling out the attached form and sending it back to us. All papers and abstracts should be in English and be sent electronically. Instructions on format should be attached (otherwise please contact us via vidya.gunapala@ice.org.uk).

All abstracts and papers submitted for the conference will be reviewed by the Organising and Technical Committees and those selected will be notified by 1st April 2007. Draft papers must then be submitted by 31st July 2007. These will be reviewed by the Organising Committee, and final versions must be received by 14th September 2007 for inclusion in the conference proceedings. All authors will be required to register for the conference in advance, at a reduced fee, and will be invited to present their papers in person.

All papers received by the date will be published as a volume of proceedings on CD and will be available to delegates at the conference.

Who should attend?

This conference will be of benefit to those involved in ground anchorages or responsible for anchored structures including Civil Engineering and Structural Engineering Consultants, Specialist Geotechnical Contractors and Consultants, Senior Environment Agency Engineers, Senior Engineers in Water Authorities, Dam Owners, Network Rail Engineers, Specialists in Corrosion and Corrosion Monitoring, Tunnelling Engineers and Academics in the fields of geotechnical engineering and non-destructive testing.

Organising Committee

Professor Stuart Littlejohn, University of Bradford (Chairman)
Malcolm Chappell, AMEC Group Ltd.
Raymond Coe, Black & Veatch Ltd.
Mike Crilly, British Geotechnical Association
John Graham, Keller Ground Engineering Ltd.
Dr Caesar Merrifield, University of Manchester
Dr Devon Mothersille, Geoserve Global Ltd.

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Professor Stuart Littlejohn, University of Bradford (Chairman)
Tony Barley, SBMA Ltd.
Dr Donald Bruce, Geosystems L.P., USA
Dr Gareth John, CAPCIS Ltd.
Hiroaki Kubo, Japan Anchor Association
Yves Legendre, Bachy Soletanche, France
Paul McBarron, Austnost Menard, Australia
Florian Stutzel, Dywidag-Systems International, Germany

Exhibition and Sponsorship

Various opportunities are available for sponsorship and exhibition stands providing organisations with the chance to showcase their products to a focused audience.

If you would like more information on the range of exhibition and sponsorship possibilities for this conference please contact Abby on 0207 665 2318
To be considered for the program, prospective speakers should prepare and submit abstracts to the specifications below by 28th February 2007.

Authors are required to supply abstracts of up to 500 words in English, as a Word for Windows document, to be sent electronically to papers@ice.org.uk. Authors are kindly requested to include their full postal addresses and telephone numbers in the e-mail. All abstracts will be acknowledged upon receipt, please do not submit your abstract more than once.

Abstracts must be produced so that the text, together with any tables, equations and illustrations, must fill no more than two pages, in one-column layout (as in the accompanying example). The paper format should be portrait style and the conference theme for which the abstract is proposed for, should be indicated above the abstract title.

Title: the abstract title must be in capital letters and page-centered. The names of the authors and their affiliations must be presented as succinctly as possible. If several authors are from the same organisation, group those together so that the organisation name is typed just once. After each author (or group of authors) list affiliations – employer (omit division, department, etc) and country. Bold and italicize the name of the person who is expected to attend the conference and give the presentation; all correspondence from ICE Conferences will be addressed to this person.

Main text: this should be in one column and a maximum of 500 words over two pages only, including figures and tables. Paragraphs should be separated by one line and they should not be indented. Font size 12 should be used with single line spacing. Footnotes should not be used in the abstract.

Figures and tables: any figures (drawings or pictures) should preferably be in high contrast black-and-white. Captions are required for all figures and tables. Figure captions should appear beneath figures, table captions should appear above tables. Illustrations and tables must be referred to by number in the text, and identified by their number in the captions.

Mathematics: equations should be typed into the body of the text, or incorporated as an equation editor or graphic object. All equations should be numbered.

Content

An abstract must clearly and concisely outline the material being proposed for presentation. It should allow the reviewer to quickly comprehend the scope of the work and determine its relevance to an appropriate conference theme. Preference will be given to those abstracts that provide a concise and thorough summary of the project objectives and results.

The abstract should identify the subject area of the paper and the author’s perspective on this topic. It should define if it is a case study or a report of new research and whether it contains information about unusual methods or new techniques. The submittal should confirm what the conclusions of the paper will be, highlighting their importance.

* Case studies are encouraged
* Highlight any key words, phrases, facts and conclusions that matter
* Use short, active sentences
The abstract should provide an overview of the paper and a ‘roadmap’ of how the content will be tackled. It should enable readers to focus their attention on the main aspects and thrust of the argument, assembling information, facts or evidence in a logical and rational manner. The abstract must be informative, containing both conclusions and recommendations. Any submitted with a strong commercial slant will not be accepted.

If you have any queries on the preparation of your abstract, please contact the Conference Producer, Vidya Gunapala via e-mail: vidya.gunapala@ice.org.uk

Please note that the example of the two-page abstract, which accompanies these instructions, was excerpted and modified from a paper presented at the Coastline, Structures and Breakwaters 2005 conference. As only short parts of the paper were used, sometimes it seems to be meaningless. What is important is the format, not the content. The names and addresses of the authors are fictitious.
1. Introduction
Many coastal rock structures consist of multiple layers of rock and are built on prepared foundations, but some are rather simpler and are placed on unprepared foundations. Some aspects of the design process (e.g. armour sizing to withstand wave attack) have been extensively researched (Jones & Allsop, 1994) and may be undertaken with a relatively high degree of confidence, but requirements for foundations and internal layers are much less well understood.

2. Present practice
A large number of failure mechanisms are possible for a blockwork breakwater. Failure mechanisms include instability of the structure due to geotechnical instability erosion of fines from the structure. However, in this paper it is focused on failure mechanism that lead to removal of blocks from the blockwork due to wave attack. Measurements of wave pressures on a vertical wall tested in the Large Wave Channel in Hannover Figure 1 are shown in Figure 2. The measurements show the sharp pressure peak during impact and the relatively slow pressure variations due the fluctuating water level.
3. Advantages and constraints
Simplified structures offer a number of real advantages over conventional designs. A recent research study and industry workshop attended by clients, designers, contractors and rock suppliers identified the following key issues (Crossman & Allsop, 2000).

It has long been claimed that rock structures can easily be adjusted, repaired or modified during the scheme life of the structure. In reality the use of different gradings, multiple layers and prepared foundations has resulted in this being uneconomic in most cases. Thus whilst timber groynes may be adjusted annually, rock groynes have largely been perceived as unchanging throughout the design life.

4. Conclusion and recommendations
There is considerable potential for increased use of innovative and simplified rock structures in coastal defense schemes. These structures offer a number of advantages, but will not become widespread unless additional design guidance, describing limiting conditions and expanding empirical 'best practice' becomes available. Recent research has identified that there is a considerable volume of information that could be rapidly collated to provide the practical guidance required. The development of more sophisticated design methods requires more fundamental research and it will be some time before this can contribute to the design process.

References