



SOUTH AFRICAN INSTITUTE FOR ENGINEERING AND ENVIRONMENTAL GEOLOGISTS

- NEWSLETTER -

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Have you booked your place at Durban ?

From the editor...

Welcome to another edition of the newsletter.

The Durban conference is just around the corner and, to this end, Leon Croukamp and Michel Benet both urge the membership to grasp this opportunity with both hands. This will not happen again in a hurry.

Other items of interest include news of developments at Tukkies as well as an in-depth article on the EESG and news from Taiwan. As usual, the calendar of events has also been updated.

Remember, newsletter contributions are always gratefully received, as are other comments, suggestions and even criticism.

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*Viewpoints expressed in this newsletter
are not necessarily those of SAIEG or
the editor*

From the President's Pen:

Remember the old saying "*Time flies when your are having fun*" ? Well, based on that we certainly are having loads of fun ! I trust that all of you are doing well on the business and personal front.

If you haven't registered for the IAEG Congress in Durban yet, **you are late !** Please do so at your earliest convenience. It is not every year that our small community has the honour of hosting such a prestigious event and I would like to see as many of our members attending the Congress.

At the recently held NHBRC Seminar in Midrand several important issues were highlighted. The first is the indemnity insurance and the liability that you take on when you sign the NHBRC documents. On that basis it is important that you ensure that you are remunerated accordingly. Please make use of the suggested fees for services rendered and do not underquote. An important issue that was also raised is the issue about gratuitous advice. Even if you are casually making a statement to a layperson you may be taking on certain liabilities since you could be regarded by that person as a competent person. Count your words in other words.

During the discussion at the NHBRC Seminar little was said about the Guidelines for Urban Engineering Geological Investigations as best practice. Once again I would like to remind you to make use of this document and request that each of you obtain a few copies and distribute it amongst your clients together with the recommended scale of fees. A new scale of fees will soon be distributed together with the changes in the SACNASP act. The main important change in the act will be that no person not registered with SACNASP will legally allowed to undertake scientific work whereas currently they can.

Leon Croukamp

Report back: SAIEG AGM

The SAIEG AGM was held on Tuesday 16th April at 18h00 in the auditorium of the CCI in Midrand. In the presidential summary of SAIEG's activities for the previous year, Leon Croukamp once again urged members to become more involved and active in the institute. It was noted during the meeting that there was a lack of younger faces at the meeting. Mention was also made of the fact that 60 of the 149 members have yet to pay their annual fees which were due in January.

The guest speaker at the AGM was Dr Kevin Wall. Dr Wall is the immediate past president of SAICE, and the manager of the Urban Management and Infrastructure section of Boutek, CSIR. He gave a very interesting and insightful talk, during which he touched on the following topics: Local Government, Urbanisation, Issues facing SA Municipalities, and Being a Professional in the Built Environment.

Despite the free food and drink on offer, and the opportunity to network with colleagues, the AGM was attended by a small number of members - 23 people attended this year (slightly down from 26 last year).

Mark Orr

It is with sadness that SAIEG have learnt of the recent passing of Dr JF Wolmarans. Frans obtained his doctorate, which dealt with dewatering of the dolomites on the Far West Rand, from the University of Pretoria in 1984. Our condolences are extended to his family at this difficult time.

IAEG CONGRESS 2002 UPDATE

With less than 3 months to go before the IAEG Congress gets underway in Durban, we are truly in the final straight now as far as the arrangements are concerned.

However, even at this relatively late stage we still have no idea what the attendance will be like as the pace of registrations has dropped off significantly since the early registration deadline passed. Some 150 delegates and accompanying persons have registered but this figure includes a number of special subvention cases, that is to say either partial or total registration fee exemptions.

As has been mentioned before we need around 350 delegates to break even or to possibly make a small profit, depending on the exchange rate. We are optimistic though that we will still get there in the coming weeks.

A cause for concern though has been the general apathy shown towards the Congress by the South African IAEG and AEG members. Abstracts were initially submitted by a number of local authors but many of these have since been withdrawn for various reasons. Also our call for sponsorship and exhibitions has to date fallen on deaf ears.

The Local Organising Committee appeals to the engineering geological community at large to show some enthusiasm and commitment by submitting those promised papers (there is still some time left), register as delegates as soon as possible, and approach your firms and clients for sponsorship/exhibitions to ensure the Congress is an unqualified success in all respects.

Looking forward to see you all in Durban between 16th and 20th September 2002 for the biggest engineering geological gathering ever held in Africa.

Michel Bénet

Revised Honours Course in Engineering and Environmental Geology at the University of Pretoria

There is a growing demand for environmental geologists, while at the same time geologists on mines are expected to play a larger role in strata control and safety.

In order to address the above situation, the University of Pretoria has restructured the honours course in Engineering and Environmental Geology. Modules from the Geology Honours course have been included.

As from 2002, the course comprises 96 credits from core modules and 64 credits from elective modules.

CORE MODULES (CREDITS)

- Site Investigation Project (16)
- Engineering Geology of SA (16)
- Construction Materials (16)
- Exploration Techniques (16)
- GIS and Geological Software (16)
- Business Practice and Entrepreneurship (16)

ELECTIVE MODULES (CREDITS)

- Petrology and Geochemistry (16)
- Environmental Geochemistry (16)
- Environmental Management (16)
- Environmental Project (16)
- Rock Engineering (16)
- Engineering Applications (16)
- Rock and Soil Improvement (16)
- Mining Project (32)

Certain post-graduate modules offered by the Departments of Civil Engineering and Mining Engineering may be selected in lieu of the above electives.

By making an appropriate selection of modules, a student can specialise in either Environmental Geology or Rock Engineering Geology, but may also become a "general practitioner" by his/her own combination of modules.

If there are any queries please contact [Prof A van Schalkwyk](#)

What happened to the EESG ?

The Environmental Earth Science Group (EESG) was founded in 1988 and has been concerned with several environmental matters, such as reducing environmental degradation (e.g. reducing acid mine drainage) and maximising the sustainable use of natural resources and the environment by using, for example, better land-use planning and environmental impact analysis techniques.

The objectives of the EESG are the following:

- To promote an awareness of the importance of the earth sciences in environmental matters through sustained contact with the relevant parties such as the media, government departments and decision makers as well as the private sector.
- To help with and to promote the multidisciplinary study, application, teaching and training of environmental earth science.
- To promote liaison between South African earth scientists interested in the environment and other individuals and organisations concerned with

the environment.

- To make informal scientific comment on environmental issues.
- To advise on the development of sound and sensible environmental legislation.

What has happened with the EESG? Being part of the committee, I face this question every now and again. Yet, what does one answer? Looking at the activities of the EESG for the past five years, it not only represents the struggle of a single group, fighting to stay afloat, but it also represents what has been taking place more generally, in more than one scientific group in South Africa. Infact several groups, committees, societies and clubs in the scientific community are struggling to keep their members interested and actively involved. Why? We believe that this is symptomatic of the increasing pressure under which earth science professionals find themselves in the work environment and not of a general decline in interest. Because of the increasing workload caused by less funding, retrenchments and several other factors, the scientist just does not have the time to devote to societies aimed at the greater good.

1998 witnessed a decline in both the number of talks presented by the EESG and the number of people attending the talks. The EESG has a valuable role to play in disseminating knowledge and fostering communication between earth scientists. Ensuring our continued role in this, the EESG committee reviewed the old formula of one talk per month to three or four per year. Four talks were presented during 1998, and these included the following topics: "Aeolian sand as a geochemical sampling media", "Mt Kenya and Kilimanjaro; a slide presentation on East Africa Afro-Alpine Geocology", "Chemical degradation of soils contaminated by mine tailings at an abandoned gold mine near Pothefstroom" and an "Environmental impact assessment of mining by integration of remotely sensed data with historical data". The attendance at the talks was at times very poor, although a very successful and well attended workshop related to Acid mine drainage was held in 1998, it was the last of its kind held by the EESG.

In the beginning of 1999, as an attempt to increase communication, the EESG newsletter underwent a make-over. The newsletter strove to be more informative containing more hands-on information. We wanted the newsletter to represent what was happening in the environmental realm. This was successful only on a small scale. We hosted two talks during 1999, Mr B Scholes presented a talk on "Global Climate Change" in January. A second talk by Mr. M Andreoli entitled "Neotectonics of Southern Africa: Speeding up or in a pause?" took place in March. As I quote the chairman, in the newsletter of September that year, the first signs of despair found the committee members ... "1999 has been a difficult year for the EESG. We have seen a decrease in attendance at talks and have experienced great difficulty in attracting people to serve on the committee. At a meeting held in July, the committee unanimously voted in favour of keeping the EESG alive, despite the poor attendance and interest shown." And so we approach the new millennium.

Talks were still the focus of activities of the EESG, in 2000, as we stood by our decision to keep the EESG alive. On Wednesday the 12th of January 2000, we co-hosted lectures by Dr. Anumpa Prakash of the International Institute for Aerospace Survey and Earth Science, Enschede, the Netherlands and Dr. Rüdiger Gens of the Technical University, Delft, the Netherlands. Both on topics of remote sensing of the environment. The talks were very well attended. It was decided to streamline the E-mail correspondence with our members, in an attempt to bridge the lack of communication between the committee and members. This was only partially successful, because not all members had access to E-mail and because of outdated membership records.

We started 2001 off with enthusiasm. Two talks were presented in the first quarter of the year. Ms S Hall presented both the talks entitled "Controlling toxic water in the environment" and "Continuous non-mechanical thickening and mixing system utilising a South African developed plastic cell matrix" in February and March. However, the enthusiasm sadly wore off as the "time-pressure-cooker" started heating up again. A website for the EESG was developed in the latter half of the year, and not even a website could blow life back into the EESG.

Examining the activities of the EESG for the past 5 years perhaps the question should not be so much "what happend to the EESG?", but rather "what lies ahead?". Will sentiment play the biggest role when we make a decision, shall we try again? Or is the cold reality of a group that has served its time on the horizon. I do not know, think about it and let us know what you think.

[Janien Naude](#)

A global view; continued.

Some Engineering Geology Experiences in Taiwan

The South African engineering geological and engineering community currently in Taiwan numbers more than 10. Most are involved with various aspects of the high speed rail project that will run down the length of the country. Being much like the Japanese "bullet" train it will travel suspended above ground on viaducts for most of its length (>300km) and below ground for the rest (50km). The dynamic geotechnical conditions that are encountered provide some interesting challenges for those involved in construction in conditions that are quite different from back home.

The mountainous eastern coastline of Taiwan forms the boundary between the Philippine and Eurasian Plates, with subduction taking place in the north and uplift in the east and south. Needless to say, seismic events are a regular occurrence, occurring almost weekly in the centre of the country. Faulting and folding are also common while dormant volcanoes dotted around Taipei also add to the geological landscape. A six month typhoon season typically results in flooding and many landslides. Typhoon Nari, for example, last year registered 1200mm in 3 days. All this serious activity by the elements has not only produced numerous eroded valleys in the flatter western area but also thick successions (up to 300m deep) of soft sediments. These vary from soft sands to gravels (mainly cobbles and boulders). Engineer geologists posted to Taiwan have had to apply themselves to piling (which is used for all highways/ trains etc), slope stabilization, tunnelling and large excavations. Use of the above-the-ground space (viaducts) keeps the infrastructure above the floodline, and the piles used not only have to be long enough to reach suitable bearing material but also to create sufficient friction to negate upwards movement during seismic events.

The South Africans living in Taiwan agree that it has its challenges, with the lack of open spaces, strange foodstuffs and different driving habits all taking some getting used to. While there are many pleasures in Taiwan, driving is not one of them. There seems to be no "right of way", resulting in a highly "creative" manner of driving. The scooters are to be widely avoided as they have the full sympathy of the law, irrespective of the situation. High density apartments are the norm in terms of available accommodation with only the really well-to-do (financial people, diplomats etc.) having their own piece of grass. Trying to eat a chicken leg with chopsticks is not easy and being served jellyfish or duck with beak and feet still attached, tends to leave "our boys" wishing for a "stuk wors". Afrikaans is common in the streets of Taipei because of all the South African teachers there. Understanding the Asian custom of 'losing face' is a challenge to our more direct style of management, where to confront a contractor/ subordinate etc. can easily destroy a relationship.

Report back: "Geotechnical aspects of the NHBRC guidelines", 27 May, Midrand

More than 120 people attended this recent afternoon seminar, held under the auspices of the Geotechnical Division of the South African Institution of Civil Engineering (SAICE) and SAIEG.

Fred Wagenaar kicked off proceedings with an outline of the historical development of the NHBRC (National Home Builders Registration Council) to its present status as statutory body. He also elaborated on the way forward. Ron Watermeyer's presentation which followed examined the current legislation in a geotechnical context. He emphasized that enrolments of houses in the NHBRC scheme are subject to the home builder submitting a site soil classification which has been certified by a Competent Person.

The next session was dedicated more to geological issues. Brian Tromp presented a summary of the site classification, founding and documentation procedures set out in the NHBRC's home building manual for ground conditions in non-dolomitic areas, while Dave Buttrick focussed on the dolomitic areas. The responsibility of the Competent Person in the accurate completion of the documentation was emphasized. Kobus Venter presented his insights on the site classification and documentation of existing stands and townships, ie problem areas.

The last session included a presentation by Fritz Wagener on the construction of mattresses under the topic "Engineered Solutions in D3 Dolomite Areas", while Dave Campbell discussed professional indemnity and Danie Botha followed with a presentation on insurance aspects. An important issue coming out of Dave's talk is the issue around gratuitous advice. A snippet of advice whilst leaning over the fence talking to the neighbour may cost you dearly as you could be regarded as an expert person and as such be held liable.

From the active debate during the discussion session it was evident that the NHBRC guidelines have some far-reaching implications for the geotechnical and engineering geological fraternity. Members must remember the huge liabilities they may have to cover when signing the NHBRC documents and as such should ensure that they are compensated accordingly. Never, ever sign a document for a friend without knowing the full details of the investigation.

Gary Davis / Leon Croukamp

Council News

At the previous Council meeting it was decided that Kobus Venter will be nominated for the position vice-president Africa of IAEG. Since then SAIEG Council had been contacted by IAEG Secretariat and asked if Michel Benet could be available due to his involvement with the Congress. Michel reconsidered his position and agreed to take on the responsibility. Kobus offered to withdraw his nominations in order for SAIEG to support only one candidate, and Michel Benet was subsequently officially nominated to IAEG Council for the position of Vice-President Africa.

Dolomite Sub-committee

Members have been notified of the availability on the web of the document "*Guidelines for dolomite site characterization*" for a number of months. The final date for submission of comments was 6 May 2002.

Very few comments were received, which implies that the document will undergo very few changes before it is published. It is, however, still available on the web for information.

Before it is published the dolomite sub-committee members will be consulted about the comments and, if necessary, another meeting will be held before it is published. An afternoon discussion for all interested parties is planned to launch the document. The event will mainly consist of a presentation of the document and the various facets which are addressed in the document. This will be followed by an open discussion. The afternoon discussion will probably take place towards the end of June 2002.

Kobus Venter

Western Cape news

ARTICLE FROM THE CAPE TIMES OF 3 MAY 2002 HOW CHAPMAN'S WILL BE SAVED

Chapman's Peak Drive, one of the Cape's most scenic routes, will reopen in October next year after a R128 million reconstruction that will involve state-of-the-art engineering techniques, some of which have never been used on South African roads before. Western Cape MEC for Transport Tasneem Essop said yesterday the drive would reopen as a toll road with plazas at out Bay and Noordhoek. She said toll tariffs were still being negotiated with Capstone 252, the company established by the Concor consortium which has won the bid to rebuild and operate Chapman's Peak for 30 years. Essop said tariff proposals were R7,50 for a one-way trip in a light vehicle for people who used the road 20 times a month or more. The tariff proposed for infrequent users in a light vehicle was R17,50 for a one-way trip and R100 for tour buses. Vat would be added.

There is also a proposal to ban cyclists from using Chapman's Peak Drive during peak hours, which is likely to be after 7am on weekdays and 8am on the weekends.

Wynand Dreyer of Concor, who heads the Chapman's Peak project, said the reason for excluding cyclists at peak hours was because cars were unable to pass them on the narrow road. "That means if a cyclist is going at 20km/h, the rest of the traffic will have to go at the same speed", he said. Cyclists would not be charged the toll tariff, but motorcyclists would be charged. Pedestrians will not be allowed to use Chapman's Peak.

Dreyer said Swiss consultants had guided the company on some of their designs. "Rockfall protection is uppermost in most people's minds and we have looked at Chapman's Peak metre by metre to identify the risky areas. We will be using a variety of techniques to prevent rockfalls, starting with barring down which means pushing the loose rocks off the cliffs" he said. This would be followed by rock bolting, which involves drilling through rocks and inserting bolts into them. "In some areas we will spray a mixture of concrete and sand onto the rocks to stabilise them. This will be colour coded to match the rock", Dreyer said.

A new feature will be catch fences, a sophisticated Swiss design not used in this country before. They consist of interlocking rings of high-grade tensile wire, designed to trap rocks as they fall, and are anchored to the rock by steel wire ropes. There will be 1,6km of catch fences in different sections which will be monitored and the fallen rocks removed. The fence will be coated with a brown substance to blend in with the surrounding rock. There will be two sections of cantilevered canopy over the road, totaling 80m, which will create a "roof" over motorists. As they will not be supported by columns, the view will not be obstructed. There will be a 155 metre "half tunnel" at the base of Chapman's Peak where the road will be built into the cliff, with the rock providing a roof but with the road open on the sea side. Improved drainage structures, retaining walls and picnic facilities will be built, and a seismic monitoring system installed.

The toll plazas, one near East Fort on the Hout Bay side and the other near the kaolin mine at Noordhoek, will be clad with natural stone and the roofs planted with vegetation. There will be two "open days" on Chapman's Peak a year to accommodate the Two Oceans Marathon and the Cape Argus Pick \n Pay Cycle Tour. Tour buses will be able to use Chapman's Peak in a north-south direction only because of the narrowness of the road.

The province will pay R70,5 million of the costs. Construction will start in July.

Chapman's Peak has been closed since January 2000 because of dangerous rockfalls which have killed two motorists and paralysed another in recent years.

Other News

FEDSET

A meeting was held 24 April to finally get FEDSET on the road. Every obstacle had not been removed yet but Prof. Robin Crewe is doing his best to get FEDSET properly running. For the first year secretarial services will be handled by FEST. We were well represented with 6 geologists out of the 20 or so attendees.
Leon Croukamp

JCESS

The Joint Council for Earth Science Societies had a meeting on the 4th of June 2002. This group consist of the Presidents of SAIEG, SAAG, SAGA, GSSA and the Soil Scientists. The function of this group is to elect a chairperson for the PAC which automatically will become a board member of SACNASP. During the meeting Dawie van Wyk of GSSA was elected as chairperson with Quan Kloppers of SAAG his alternative. They will be setting up the PAC committee during the following weeks. Dr. JP Venter was elected as the SAIEG PAC nominee with myself as alternative.
Leon Croukamp

ICB

Marion Thomas is currently attending meetings of the ICB on behalf of SAIEG and they are currently in the process of certifying the first environmental practitioners.
Leon Croukamp

Membership

Members are urged to check their details which are displayed on the webpage. Corrections / changes should be sent to Pam.

If any member has contact details for Paul Schlotveldt, could these please be passed on to Pam.

The following members are in arrears. If there are any queries please contact Pam. Please remember, there are precedents for non-paying members to be removed from the role

BR Antrobus; JK Arkert; P Aucamp; D Barnes; AM Bester; FS Botha; JM Brown; JF Cronje; CF Dalton; N Dooge; GP Dyke; JM Erasmus; RM Galliers; J Geldenhuys; AG Gregory; FA Grove; MJ Hadlow; NNM Hazan; CHJ Isherwood; JC Janse v Rensburg; LJ Kruger; GRJ MacFarlane; MJ Mountain; TE Mutowembwa; TC Page; GV Price; NP Richards; JF Robson; PL Roux; PJE Schlodveldt; FW Solesbury; CJU Swart; MA Thomas; DJ vd Merwe; MJ vd Walt; DJ v Rooyen; D Warwick.

Further Membership benefits

As a benefit to paid-up members (ie members in good standing), the opportunity exists for these members to have their business cards displayed on the SAIEG website for free. In addition, a link to the member's website can also be added, if so desired.

A *Project News* page is also envisaged, where members would be able to submit descriptions of projects they are involved in, for display on the website. The company logo's could be displayed and a link to the company / individual's website could be incorporated, if so desired. Again, there would be no charge for this.

Members wishing to take up the offer are invited to submit their business cards (either scan them yourselves or submit the actual cards) to the webmaster (gdavis@geoscience.org.za)

Local talks, conferences etc

- SAICE Geotechnical Lecture - **July 2002**, Seismic cone and piezocone developments - Gerhard Heymann and Eben Rust
- SAICE Geotechnical Lecture - **August**, Site Investigation for Mine Shafts - Dick Stacey
- Geotech 2002 "Geotechnology: The Next Generation"
18 - 20 September 2002, Aventura Loskop Dam.
More info at www.saag.co.za - Abstracts by 15 April 2002 to info@geotech.co.za
- SAICE Geotechnical AGM - **20 November 2002** (Jennings Memorial Lecture)
- SAICE Geotechnical Division - Young Geotechnical Engineers Conference "*Civil and Mining Geotechnics: Foundation for an African Tomorrow*", Swakopmund, Namibia - **14 - 16 April 2003**. Note deadline for abstracts 1 July 2002.

International event calendar

2002

* 24 - 26 June 2002
1st European Conference on Landslides, IAEG, Prague, Czech Republic.
ECL2002@irsm.cas.cz

* 10 - 12 July 2002
International conference on Physical Modelling in Geotechnics
More info at
<http://www.issmge.org/Conferences/>

* 11 - 15 August 2002
4th International Conference on Environmental Geotechnics, Rio de Janeiro, Brazil
www.4iceg.ufrj.br

* 9 - 13 September 2002
12th European Conference on Earthquake Engineering
More info at
<http://www.issmge.org/Conferences/>

* **16 - 20 September 2002**
International Association of Engineering Geology and the Environment (IAEG). 9th International Congress, Durban.
<http://stanfield.und.ac.za/Durban2002/>

* 24 - 27 September 2002
Advancing Rock Mechanics Frontiers to meet the Challenges of the 21st Century, New Dehli, India
www.cbip.org

* 22 - 27 September 2002
70th Annual meeting of the International Commission on Large Dams (ICOLD), Iguassu, Brazil

* 23 - 25 October, 2002
4th international Symposium on Geotechnical Aspects of Underground Construction in Soft Ground, Toulouse, France.
Info at www.sgu.se/hotell/iaeg/

* 17 - 20 November 2002
First International conference on Scour of Foundations, Texas, USA
<http://tti.tsmu.edu/conferences/scour>

* 23 - 28 November 2002, ISRM International Symposium on Rock Engineering in Mountainous Regions and Workshop on Volcanic Rocks, Madiera.
Info at www.sgu.se/hotell/iaeg/

2003

* 10 - 13 February 2003
Geotechnical Grouting and Deep Mixing 2003, Louisiana, USA
More info at <http://www.aegweb.org/>

* **14 - 16 April 2003**
First African Young Geotechnical Engineers Conference, Swakopmund, Namibia. Abstracts due by 1 July 2003.
Contact l.stephenson@ee.wits.ac.za

* 26 - 29 May 2003
3rd Conference on GIS for Earth Science Applications, Ljubljana, Slovenia
e-mail: marko.komac@geo-zs.si

* 16 - 20 June 2003
21st ICOLD Conference, Montreal, Canada
Call for papers, contact caa@dwaf.gov.za

* **7 - 12 September 2003**
ISRM 10th International Congress on Rock

Mechanics, Johannesburg. Note deadline for abstracts 31 May 2002.

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