IGS NEWS

NEWSLETTER OF THE INTERNATIONAL GEOSYNTHETICS SOCIETY

Dedicated to the scientific and engineering development of geotextiles, geomembranes, related products, and associated technologies

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A Message from the New IGS President for 2006 to 2010

by Fumio Tatsuoka , IGS President

It is my great honour to have been elected President of the International Geosynthetics Society, one of the well-established learned societies in the field of engineering. I would also like to thank my IGS colleagues for their support.

Before I state my thoughts and aspirations for the future of the IGS, I would like to highlight the recent IGS anniversary, which was brought to my attention by Dr. JP Giroud while I was writing this address – as of 11 November 2006, the IGS is 23 years old, and, in 2008, we will celebrate the 25th Anniversary of the IGS!

Over the last four years, the IGS played major and essential roles in geosynthetics engineering worldwide and grew under the strong leadership of our Immediate Past President, Daniele Cazzuffi. In the past four years, the number of corporate members has increased from 90 to 109 and seven new chapters have been formed. I believe this success can be attributed to the strategic and relevant policies of the IGS that were implemented by Dr. Cazzuffi i.e., 1) more and better communication; 2) more and better education; 3) more and better interaction between practitioners and academics; 4) more and better links with other international associations; and 5) expansion (chapters and structure). We should continue these policies for the coming years for further development of the IGS.

Moving forward for the new term of 2006 to 2010, I believe the following additional goals will continue to add strength to the momentum of growth of the IGS.

(1) More IGS chapters, particularly in "new" regions and more local activities of the IGS chapters

Presently, more than 93% of IGS individual members belong to IGS chapters. I believe that the IGS can grow much more and geosynthetics engineering can be much better recognized and established worldwide if more IGS chapters are established, particularly in regions of Asia, Africa, South America, and Eastern Europe, where the use of geosynthetics is expanding. The most efficient way to achieve this goal is to have more and better local activities and communications in local languages (e.g., newsletters, journals, conferences, workshops, seminars, lectures, and training courses), through local organizations and local collaborations, in addition to international IGS activities.

It is my personal experience from my many years as Chair of

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IGS MEMBERSHIP REQUIRES ELECTRONIC COMMUNICATION – PLEASE ENSURE WE HAVE YOUR CURRENT E-MAIL ADDRESS

the IGS Japan Chapter that most IGS members (individual and corporate) enjoy the local IGS activities afforded to them through their chapter membership. At the same time, we have to avoid the situation of only a small portion of the members of a given local or domestic geosynthetics society is an IGS member. It is strongly recommended that all, or as many as possible, members of local organizations be IGS members.

(2) Increase the number of IGS individual members

Over the last four years, compared with a large increase in corporate members, the individual membership did not increase noticeably. The membership fee income from the corporate members is now approximately two times that of the individual members. If this trend continues, we will lose a balance in the atmosphere of the Society. An increase in the individual membership, in particular in the young generations and in "new" regions, is our first priority for the next term. To this end, we require:

- better and clearer definitions of the benefits of IGS membership;
- more effective and efficient promotion of the IGS not only by the IGS Officers and other Council members, but also by the IGS chapters; and, possibly
- a revision of the fee system.

The current individual member annual fee is $45 US, which may be reasonable to many IGS individual members in well developed countries. However, this may not be the case with most of the current and potential individual members in developing countries and the younger generation in well-developed countries. This is one of the most difficult issues we are now facing, and the IGS must find a solution.

(3) Sound finances

Key to healthy society activities is maintaining and ensuring sound Society finances, that is, a well-organized and well-planned balance between income and expenses. There are several challenges to achieving this goal:

- First, we must always seek efficient and cost-effective administration of the IGS.
- Second, we have to keep the member fee as low as possible to increase the membership.
- Third, the Society always needs more income to achieve necessary activities.
- Fourth, it is necessary to maintain the Society structure, while responding to a number of requests from the IGS members that may need expense.

Therefore, it is reasonable to explore the IGS fee system; the following are different opinions and proposals for consideration:

No fee change?

This is what we decided during the Ordinary General Assembly held at the *8ICG*, in Yokohama. If we continue the present fee system for the long term, we cannot respond to a request of lowering the fee.

Change the fee?

- ***Increase?*** It will become more difficult to increase the numbers of individual and corporate members in developing countries and in young generations. Moreover, there is a danger of losing current members.
- ***Decrease?*** We will have to increase the number of individual and corporate members to maintain the current income.
- ***Differential fee system?*** Currently, each member has one vote at one fee. I believe that voting is not only a right, but also a duty of each IGS member. The introduction of different fees per individual member, dependent on country economic conditions, is inconsistent with the current voting system. Can we introduce associate memberships with a substantially reduced fee without voting rights? Should associate members (at greatly discounted fees) receive the same benefits as full members? Will current members seek to become associate members? This is a contradiction in our goals.

(4) Increase corporate membership

Of course, we should continue our upmost efforts to increase the number of IGS corporate members because a strong corporate member system is one of the most unique and positive features of the IGS. At the same time, we need more active interactions between practitioners and academics or among manufacturers, designers, contractors, researchers and educators taking advantage of this unique feature via conferences (e.g., the Practitioners and Academics Forum held at the *8ICG* in Yokohama), IGS committee activities, training courses, *IGS News*, and so on.

(5) More active communications

Indeed, active and efficient communications among IGS members is one of the original objectives of the IGS as a learned society. To this end, we require the following:

(i) More comprehensive content and functionality of the IGS web site. The web site should provide IGS members with exclusive membership benefits, such as free access to electronic information comprising the IGS Directory, training course materials, lecture notes, and other valued documents.

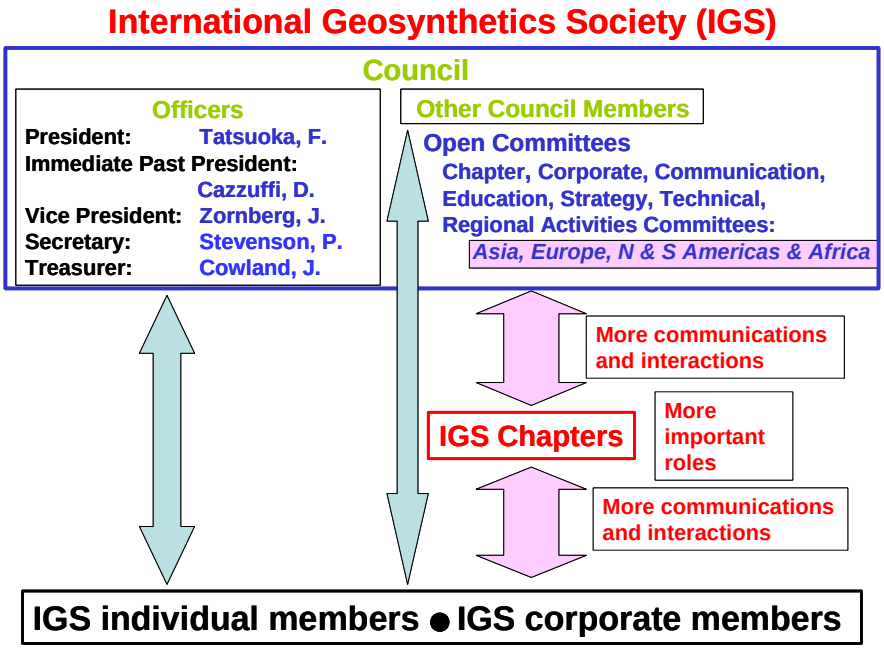
(ii) Continuation of the IGS official journals,* Geotextiles and Geomembranes *and* Geosynthetics International *and free access for IGS members. I believe that financial support for the publication of these two journals should be continued. I believe that having these high-level international official journals makes the IGS unique and different from many other geosynthetic engineering organizations.

(iii) Continued support of international conferences, symposia, and workshops held under the

auspices of the IGS. The most prestigious of these events are the International Conferences on Geosynthetics (ICGs). The *8ICG* in Yokohama was the latest of the eight conferences, which have been held every four years. The next ICG, the *9ICG*, will be held in June 2010 in Brazil. To ensure great success with the *9ICG*, we will have to help the organizing committee as much as possible by submitting a great number of high-quality technical papers and participating in the conference and exhibition as much as possible while promoting the *9ICG* outside the IGS. I will help the organizers of the *9ICG* as much as possible, not only as the IGS President, but also through my experience as Chair of the *8ICG* Organizing Committee.

The next important international conferences for the coming years are the IGS regional conferences: *GeoAmericas 2008*, 2 to 5 March 2008 (Cancun, Mexico); *Geosynthetics Asia 2008*, 17 to 20 June 2008 (Shanghai, China); and *EuroGeo4*, 17-19 September 2008 (Edinburgh, UK). Other important events that will be held under the auspices of the IGS are (in chronological order): *Geosynthetics 07*, 16 to 19 January 2007 (Washington DC, USA); *GEE 2007*, 22 to 24 May 2007 (Grenoble, France); *Sardinia 2007,* 1 to 5 October 2007 (Cagliari, Italy); and *IS Kyushu*, 14 to 16 November 2007 (Fukuoka, Japan).

(iv) IGS Auspices. I believe that we should give the IGS auspices to as many geosynthetics conferences, symposia and workshops as possible if their themes are linked to geosynthetics engineering and if they are international, open to IGS members, and benefit IGS members through fee discounts. The importance of recognition and support of local conferences, symposia, and workshops organized by IGS chapters cannot be over-emphasized.



Schematic diagram showing the structure of the IGS.

(v) Organizing training courses. One of the most effective ways to promote geosynthetics engineering as well as the IGS in regions where we have no IGS chapters is to hold IGS training courses. To this end, it is one of the responsibilities of the IGS to prepare training course logistics. Such logistics (i.e., materials, guidance, and instructors) will also be useful for training courses organized by existing chapters and held in conjunction with the IGS international events described above.

If a training course is not held in conjunction with a major geosynthetic conference, a large proportion of the expense incurred is typically travel costs for lecturers. In such cases, one method of defraying costs is to find sponsors, perhaps among the IGS corporate members. Another method is the possibility of an IGS loan to the organizers. The IGS Education Committee has prepared a set of leaflets describing geosynthetics engineering as a tool to support and promote the training courses.

(vi) More interactions between "the IGS Officers and Council" and "the IGS Chapters. I used the figure above in my closing speech of the *8ICG* Yokohama to describe the structure of the IGS. In the past, when the number of IGS chapters was quite limited, the representation of the IGS chapters in the IGS decision making process was not well defined and the Council members, including the Officers, were the major players in decision making. The IGS chapters must participate in relevant decisions on many IGS issues and the IGS must be well informed by knowing and understanding the situations, policies, opinions, and needs of the chapters.

With the advent of the regional committees (Europe, Asia, Africa, and North and South America), the chapters can be active in the regional committees and contribute to the management of the Society.

Finally, I believe that the IGS Officers should be well distributed and balanced geographically representing the major regions. This balance is well realized with the present Officers; however, the above is not an automatic guarantee. I believe that we will have to find a means by which we can always ensure that the IGS Officers represent all the major regions worldwide.

Reflecting on the Past Four Years of IGS Presidency

by Daniele Cazzuffi, Immediate Past President of the IGS

Editor's note: The following article is adapted from the address of the IGS President, Dr. Daniele Cazzuffi, at the IGS Ordinary General Assembly held on 22 September 2006 in Yokohama, Japan in conjunction with the 8th International Conference on Geosynthetics.

It is a pleasure for me to report on the activities of the International Geosynthetics Society over the past four years since I was elected President, during the last Ordinary General Assembly in Nice, France, in September 2002.

In my last Editorial (*IGS News*, July 2006), I reviewed in detail the IGS activities over the past four years in light of the five main goals of my program presented in Nice, i.e. communication, expansion (chapters and structure), education, science versus business relationships, and, finally, links with other international associations.

What I would like to emphasize, on this important occasion, are three general cross-cutting themes that I have pursued in the past four years to achieve the five main goals of my original program.

These three general themes are:

- greater involvement of the IGS Council members in the decision-making process of the Society;
- expansion of our Society to all corners of the world, particularly through new and potential chapters, but also with the official creation of the new category of the "National Interest Groups";
- better visibility of the Society among different and parallel engineering fields, such as environmental engineering and geotechnical engineering, and also better visibility of our Corporate membership in the different international events in which the IGS was increasingly involved in the past four years. For example, I have counted 20 major international conferences that were held during the last four years under the auspices or with the support, of the IGS, i.e., three in 2003, five in 2004, seven in 2005, and five thus far in 2006.

Finally, let me conclude with a special word of thanks to the individuals and institutions that strongly supported me in the past four years:

- The IGS Officers and Council members, among whom special recognition shall be given to Peter Stevenson (IGS Secretary) and Rosemary Stevenson (IGS Secretariat Manager) for the continuous dedication and the friendly availability. I would also like to pay a special tribute to Wim Voskamp, who has carefully managed the finances of the Society over many years as IGS Treasurer.
- The IGS Past Presidents and, particularly, J.P. Giroud, for our very precious stimulating discussions and his suggestions.
- The *IGS News* Editor, Karina McInnis, and the staff running the IGS website, namely Elizabeth

The New IGS Officers and Council Members

The call for candidates for the IGS President, Vice-President, and Council for **2006 to 2010** appeared in the March, July, and November 2005 issues of *IGS News*. Election of Officers and Council candidates was held by electronic ballot, which opened on 1 June and closed 31 July 2006. The new IGS President, Vice-President, and Council members were announced at the Ordinary General Assembly (OGA) held at the *8ICG* in Yokohama, Japan, September 2006. The Secretary and Treasurer (IGS Officers) were elected by the new IGS Council from amongst its Members at the first IGS Council meeting.

President Fumio Tatsuoka

Vice-President Jorge Zornberg

Immediate Past-President Daniele Cazzuffi

Treasurer John Cowland

Secretary Peter Stevenson

New Council Members

Sam Allen (USA)

Gerhard Bräu (re-elected, Germany)

Neil Dixon (United Kingdom)

Nicolas Freitag (France)

Michele Maugeri (re-elected, Italy)

Jun Otani (Japan)

Ennio Palmeira (re-elected, Brazil)

Elizabeth Peggs (USA)

New Co-opted Council Members

Yun-Min Chen (China P.R.)

Jose Ferreyros (Peru)

Peter Legg (South Africa)

Peter Stevenson (USA)

The above new IGS Council Members join the eight Council Members, who were elected in 2004 for the period 2004 to 2008, together with the 2004 Co-opted Members (see page 28).

Peggs (in the first two years) and Lara Costa (since 2005), who were always able to accommodate my requests and suggestions.

- Italian Chapter (AGI-IGS) and the Italian Geotechnical Society (AGI) for their endless support.
- My company CESI in Milano and, particularly, my colleagues in the group I lead, i.e., "Geosynthetics and Environmental Geotechnics".
- And, an exceptional thanks to my family, who registered a tremendous increase in membership in the past four years, growing from three to five – a 66% increase, even better than the IGS! Therefore, many thanks to my children, Anna, Pietro, and Lucia and, particularly, to my wife Susanna for their patience and for attending the General Assembly and the various *8ICG* social events, such as the IGS Corporate reception, the football match, and the party in the beautiful Nissan Stadium.

In closing, I have enjoyed the last four years as your IGS President. I am pleased to hand over to the next IGS Council and IGS Officers a mature society, a society with a clear mandate, a professional society that is financially sound, and also a society very well recognized among other distinguished learned societies in the world.

I wish the new Council, the new Officers, and, in particular, the new President, Fumio Tatsuoka, and all the IGS membership, the best of success over the next four years – I will be proud to contribute in my capacity as IGS Immediate Past President.

8th International Conference on Geosynthetics – A Success!

The *8ICG* was held on 18 to 22 September 2006, in Yokohama, Japan, under the auspices of the IGS and was indeed another great success following in the foot steps of the previous international geosynthetics conferences, and also taking new challenges and programs. The Conference organizer, the IGS Japan Chapter, is sincerely grateful to the strong support of the International Society for Soil Mechanics and Geotechnical Engineering with the presence of President Pedro S. Sêco e Pinto, the Japanese Geotechnical Society, and many other organizations. I believe that the participants enjoyed Yokohama, one of the most important historic trading harbours in Japan.

Australia:	8	France:	18	Mexico:	4	Slovakia:	1
Austria:	2	Germany:	24	Nepal:	2	South Africa:	14
Belgium:	6	Greece:	4	Netherlands:	8	Spain:	3
Brazil:	10	Hong Kong,China:	6	New Zealand:	4	Sri Lanka:	6
Cambodia:	6	India:	24	Norway:	1	Sweden:	5
Canada:	9	Indonesia:	5	Pakistan:	1	Switzerland:	4
China:	45	Iran:	5	Peru:	2	Taiwan:	17
Colombia:	1	Ireland:	2	Poland:	1	Thailand:	6
Czech Republic:	1	Israel:	2	Portugal:	5	Tunisia:	1
Denmark:	3	Italy:	22	Romania:	7	Turkey:	2
Egypt:	1	Japan:	417	Russia:	2	UK:	20
Estonia:	2	Korea:	39	Saudi Arabia:	3	Ukraine:	5
Finland:	4	Luxembourg:	2	Singapore:	9	USA:	38
		Malaysia:	12				
						Total:	851

Worldwide representation at the *8ICG*: 604 IGS members and 247 non-IGS members.

Pre-*8ICG* Events

One day before the *8ICG*, an *IGS Training Course*, coordinated by Prof. Ennio Palmeira, Chair of the IGS Education Committee, was held with the participation of 80 individuals. The course text is available to IGS members at ***wwwsoc.nii.ac.jp/jcigs/8ICG/SL/special-lectures.html***. Following this, two special lectures organized by the JGS and the IGS Japan Chapter were presented, the *Vienna Terzaghi Lecture* "Geosynthetics engineering: successes, failures and lessons learned" by Dr. J.P. Giroud and the *2005 Rankine Lecture* "Long term performance of contaminant barrier systems" by Prof. R. Kerry Rowe. The final event that day was the *IGS Corporate Reception*, which was very well attended.

Participation

Conference participation was global. The participants from outside Japan well exceeded the Japanese participants, which made the atmosphere of the *8ICG* truly international. This satisfactory result was accomplished by a long-term commitment to promotional activities made by our many colleagues, which included all of the Organizing Committee members, Dr. Hiroshi Miki and Mr. Masao Itoh (Chair and Secretary of the IGS Japan Chapter, respectively), and Mr. Nobuo Kiyokawa and Dr. Masaru Tateyama (Secretary and Chair of Finance Division of the *8ICG* Organizing Committee, respectively), and also our international colleagues, in particular, the members of the International Advisory Committee and the International Promotion Committee (IPC). I believe that the IPC, which was established for the first time for the *8ICG*, should also be established to effectively promote the *9ICG*. Strong personal letters by Dr. J.P. Giroud to his IGS colleagues were also very effective. I would sincerely thank all of the conference participants for their active presence during the Conference, which was the real key for this successful event.

Technical Program

High-Quality Papers

Of course, the publication of a large and sufficient number of

high-quality, relevant and well-prepared technical papers in the Conference proceedings and well-organized presentations followed by lively discussions are among the most essential factors for a successful international conference by a learned society, such as the IGS. 350 technical papers were printed, which is the largest number in the history of the ICGs. To maintain a high technical standard, all of the submitted papers were carefully reviewed by a number of eminent researchers and engineers specializing in geosynthetics engineering, who were appointed by the International Paper Selection Committee (IPSC), chaired by Prof. Jiro Kuwano. The IPSC held three meetings prior to the Conference: Seoul (June 2004), Yokohama (May 2005) and Kyoto (April 2006).

The IPSC also organized the scientific and technical programme based on the accepted papers, including the selection of the three keynote lectures and their co-authors. The policy of oral presentation of as many technical papers as possible was the right decision in attracting many of the paper authors to the *8ICG* and in achieving lively and constructive discussions during the Conference. The importance of the paper selection committee for a technically successful ICG cannot be over-emphasized. I believe that this system should continue for the coming ICGs including the *9ICG*.

Special and Keynote Lectures

The special lectures were also highlights of the *8ICG*. Dr. J.P. Giroud delivered the Special Lecture on the history of the IGS (see page 14), from which we learned about the spirit of the IGS. Mr. Chris Lawson presented the Giroud Lecture, and the three keynote lectures were presented by Prof. Junichi Koseki, Dr. Michael Heibaum, and Prof. Edward Kavazanjian. All of these lectures were very well prepared and outstanding. I should note that excellent special lectures such as these are also essential for the full satisfaction of conference participants.

The six IGS Presidents.

New Program Elements

For the first time in the history of the ICGs, we invited *case history papers* from all of the IGS chapters. The largest number of case history papers (approximately 100) were submitted with many coming from the IGS chapters. Many excellent case history papers, not only successful but also unsuccessful cases, were reported. We can learn many valuable lessons from these, which is essential for the healthy development of geosynthetics engineering. We can conclude that this new program element was an additional correct decision that made the *8ICG* successful.

Special Lectures: Dr. J.P. Giroud (left) on the history of the IGS, and Mr. Chris Lawson (right), Giroud Lecture.

Also, for the first time in the history of the ICGs, two ISSMGE-sponsored sessions, TC5 (Environmental Geotechnics) and TC17 (Ground Improvement), were successfully organized and run. I believe that this collaboration should continue for future ICGs.

Another new program element was the ***Practitioners and Academics Forum***, chaired by Prof. Richard J. Bathurst, which was organized to narrow the gap between geosynthetics practitioners and academics. Good communication between academics and practitioners is among the most characteristic and unique features of the IGS; however, it seems that the gap is growing despite the close and good collaborative efforts between the two groups. It may be that the time allocated for such an interesting session (90 minutes) was too short. I hope this forum will be continued at future conferences

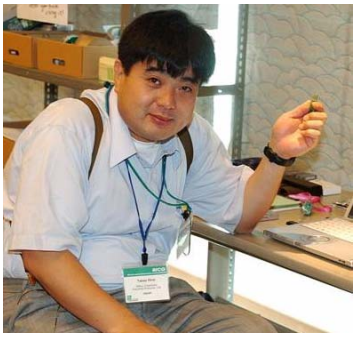
Keynote Lectures: Dr. Michael Heibaum (left), Prof. Edward Kavazanjian (center), and Prof. Junichi Koseki (right).

– we can continue to draw upon our experiences and contribute to the narrowing of this gap in the future.

Exhibitions and Other Events

The ***Technical Exhibition***, which was another essential event of *8ICG*, was held in the same building as the technical sessions. All efforts were made to invite as many conference participants as possible to the Exhibition; for example, lunches were served in the exhibition area. More than 60 booths were prepared and all were used by 50 private firms and public organizations. Japanese-style lunch boxes (called "O-bento" in Japanese) were served; originally having started for lunches in picnic and theatres during the Edo Era, O-bento have become one of the essential lifestyles in Japan. I hope that the adventure of O-bento was enjoyed by all Conference participants. The picnic lunches saved time ensuring enough time for the technical events.

The organization of the *8ICG* started under the initiative of our Immediate Past President Daniele Cazzuffi. I believe that he was the person who brought the largest number of family members to the *8ICG*! Other important events, although not technical, included an ***IGS football match*** and a ***banquet***. The celebrated IGS football matches will continue at the three IGS regional conferences in 2008 in Cancun, Shanghai and Edinburgh and, of course, in 2010 in Brazil.



Important people behind the scenes: Dr. Takao Hirai, General Affairs Division (left), and Ms. Yoko Akana, Acting Secretary (right).

A scene from the closing banquet ceremonies - the IGS participates in the ceremonial drum entertainment.

A gift from the IGS presented by IGS Secretary Peter Stevenson to Susanna Cazzuffi in appreciation of her strong support of her husband Daniele.

Word of Thanks and the Future

Finally, I would like to express my sincere thanks to all of the other members of the *8ICG* Organizing Committee, who were all responsible for the success of the event. I would like to specifically mention and thank the Acting Conference Secretary, Ms. Yoko Akana, and Dr. Takao Hirai. Despite the fact that they were nearly invisible during the Conference, we owe much of the success of the Conference to their hard work and attention to detail.

Best wishes for another great success to the individuals who have started organizing *the Ninth International Geosynthetics Conference* in Brazil in June 2010 as well as to all *9ICG* participants.

reported by Fumio Tatsuoka, Chair of the 8ICG Organising Committee and IGS President

The football match participants.

IGS Council Meeting Minutes, September 2006
Yokohama, Japan

The 18 September meeting was called to order by President D. Cazzuffi at 8:00 AM. Members present were President D. Cazzuffi; Vice President F. Tatsuoka; Past President R. Bathurst; Treasurer W. Voskamp; Secretary P. Stevenson; Council Members: M. Bouazza, G Bräu, B. Christopher, S. Corbet, J. Cowland. P. Fantini, M. Kamon, M. Maugeri, E. Palmeira, G.V. Rao, M. Sadlier, E.C. Shin, B. Myles; and IGS Manager R. Stevenson. Apologies were received from E. Alio, C.G. Bao, H. Miki, E. Peggs, and J. Zornberg.

The 23 September meeting was called to order by President Tatsuoka at 10:00 AM. Members present were President F. Tatsuoka; Past President D. Cazzuffi; Council Members: M. Bouazza, G Bräu, J. Cowland. N. Dixon, N. Freitag, P. Fantini, M. Kamon, M. Maugeri, B. Myles, E. Palmeira, M. Sadlier, E.C. Shin; and IGS Manager R. Stevenson. Apologies were accepted from E. Peggs and J. Zornberg.

Four individuals were co-opted to the Council for the term 2006 to 2010: Yun-Min Chen, Jose Ferreyros, Peter Legg, and Peter Stevenson. Peter Stevenson was elected to serve as Secretary from 2006 to 2010. John Cowland was elected Treasurer to serve from 2006 to 2010. Committee chairs, co-chairs, and secretaries were appointed (see table).

Minutes and Action Items from previous meetings were approved. ***Matters Arising*** included a request for detailed results of the election to be published. After discussion it was agreed that the Secretary would provide information to those Society members requesting such information.

The ***Corporate Committee*** was requested to explore the issue of the IGS gathering market data to be published for the corporate membership. A Corporate member request to post the IGS videos on the company website resulted in a decision to investigate the possibilities of placing the IGS videos on the IGS web site with links to corporate member's sites.

The ***2007 Directory*** will be presented on line (IGS website) in a password protected, members-only section. The ***Education Committee*** of the new council is requested to consider the proposal to initiate a Terminal Masters course and prepare an opinion.

Secretaries Report

Awards 2006

The IGS Award program was held on Friday, 22 September immediately preceding the Ordinary General Assembly (OGA). This ceremony began with the IGS awards in appreciation of service and contributions to the IGS: Honorary Membership (page 11), IGS Plaques (page 12), IGS Service, and the new IGS Achievement Award (page 12). The IGS Award and Young IGS Award recognizing excellence in research, academics, and technical achievements followed immediately (see page 11). Special arrangements will be made for the presentation of awards to R. Floss (IGS Service) and R. Koerner (Honorary Membership), who were unable to attend.

Election 2006

The electronic ballot was very successful in ease of operation for both the voting membership and for the election officers/managers and resulted in a very high number of ballots cast including 74 corporate votes (out of approximately 100 eligible) and 672 individual ballots (there are approximately 1700 eligible voters).

Journals

As evidenced by the electronic record of visits to the IGS web pages and particularly the Journal pages, access to the Journals appears to be a major benefit to the membership.

Membership

Corporate Membership is growing despite the consolidation of some corporate members. Individual membership appears to be static.

Handbook and Bylaws

Several facts pertain to the IGS Handbook. (1) The Handbook is

IGS Open Committees

Committee	Chair	Co-Chair	Secretary
Education	Ennio Palmeira	Abdelmalek Bouazza Michele Maugeri	Jun Otani
Corporate	Bernard Myles	Pierpaolo Fantini	Peter Stevenson
Communication	Daniele Cazzuffi	Sam Allen	Elizabeth Peggs
Strategy/Membership	John Cowland	Daniele Cazzuffi	Peter Legg
Technical	Mike Sadlier	Neil Dixon	Nicolas Freitag
African Activities	Peter Legg		
Asian Activities	Masashi Kamon	Abdelmalek Bouazza Yun-Min Chen	Eun-Chul Shin
European Activities	Gerhard Bräu	Nicolas Freitag	Neil Dixon
North American Activities	Jorge Zornberg	Sam Allen	Elizabeth Peggs
South American Activities	Ennio Palmeira	Jose Ferreyros	Flávio Teixeira Montez

Introducing the IGS Pioneers

IGS Pioneers. Standing (left to right): R. Holtz, C. Lawson, P. Rankilor, C. Fuller, P. Sembenelli, R. Wallace, P. Stevenson, R.K. Rowe, G. Heerten, J. Kassner, M. Fukuoka, P. Barker, J.P. Giroud. Kneeling (left to right): J.P. Gourc, D. Fayoux, C. Finazzi, D. Cazzuffi, B. Christopher.

The IGS recognized Pioneers of the IGS at the Opening Session of the *8ICG*.

An IGS pioneer is defined as an IGS Member who fulfills the following criteria:

- Attendance at the Paris Conference (1977) and all subsequent ICG conferences including Yokohama and/or
- Attendance at the Las Vegas Conference (1982), including the ad hoc meeting that initiated the planning and subsequent formation of the IGS and attendance at the next six conferences and planning to be in Yokohama and/or
- Recognized activity and contribution to the IGS and the industry over the period of 1977 to the present and planning to be in Yokohama.

increasingly a vital document in the governance and management of the Society. (2) The growth and change in the Society and the resulting change in policies have made maintenance of the Handbook a significant challenge. The main issue is the integration of new policies into the established format. (3) IGS Auspices, IGS Support: The policies governing IGS Auspices, IGS Support and the publication of information concerning geosynthetics and other geo events need review and redrafting for clarity. These policies are already in the IGS handbook and the redraft will be included in the Handbook editing process. An addition to the auspices/support policy is to be a requirement that a public recognition of IGS Corporate Members who are exhibitors be made. The public recognition can be lists on billboards, lists on facility TV monitor announcements, lists in scrolling power point announcements on meeting room screens before, between and after sessions. The plan of work and review is as follows: the Secretary will edit and post each section for editing in a separate file. The first editing stage will focus on content and no effort will be made to retain the original format. Editing stage two will address the format of the document. The first sections will be available for review and comment by officers and council on the website by November 1.

Chapter Formation Update

Two new chapters have been formed in the Americas – Chile and Mexico, with work ongoing in Colombia. The Indonesian Chapter is fully operational and efforts are underway for chapter formation in the Philippines and Vietnam. Slovenia and Russia have declared intent to form chapters in Europe.

Corporate Committee Update

The Corporate Committee is drafting a recommendation concerning the guidelines for conference organizers that will enhance the recognition of corporate members, who exhibit at IGS events. The Corporate Committee is also drafting a guideline concerning quality. The goal is to establish an IGS endorsement for a standard of quality.

Education Committee Update

The Education Committee is developing a Training Course for publication on the web site for IGS members through the member's only section.

Technical Committee Update

Steve Corbet has produced a final draft of the specification guide. A minor final edit will be performed by council members M. Sadlier and B. Christopher during the *8th ICG* with a final draft to be produced by 22 September.

9th ICG

The date is expected to be June 2010. The IGS Past President, Daniele Cazzuffi, is appointed the IGS representative to the *9th ICG*. The main task is to provide guidance to the organizers from experiences gathered in the previous international conferences. President Tatsuoka, who led the organization of the *8th ICG*, will be a key contributor.

Next Meeting of IGS Officers

January 2007 in conjunction with *Geo2007*.

reported by Peter Stevenson
IGS Secretary

Minutes for the 7th Ordinary and Special General Assemblies

held at *Eighth International Conference on Geosynthetics*, Yokohama, Japan

President Daniele Cazzuffi welcomed the membership of the IGS to the 2006 IGS Award program at 10:30 AM. The awards program began with Honorary Membership presented to Past President, R. Kerry Rowe, and continued with the presentation of the IGS Plaque to Past President Richard Bathurst and outgoing Treasurer Wim Voskamp. These awards were made in recognition of extraordinary contribution to the IGS and the industry.

The awards ceremony continued with the presentation of the IGS Achievement Award to Paulo Roberto Aguiar (Brazil), Dennes Bergado (Thailand), Sam-Deok Cho (Korea), Komei E Iwasaki (Japan), Etienne Leflaive (France), Kelvin R. Legge (South Africa), G.V. Rao (India), Leonardo Sarti (Italy), Hartmut Schroeder (Germany), and David Suits (USA). The IGS Achievement Award is a new category instituted in 2006 wherein the Chapters of the IGS can recognize members who have made outstanding contributions to their chapter and the industry.

The next presentations were for the IGS Awards, which recognize excellence in specific achievements. The IGS Award was presented to GSE, Ahmet Aylidek, and Malek Bouazza. The Young IGS Award was presented to Young In Oh and to the team of Nathalie Touze-Foltz and Francois Cartaud.

The award ceremony closed with the announcement that IGS Honorary Membership will be presented to Robert Koerner during *GeoAmericas 2008* and that the IGS Service Award will be presented to Rudolf Floss during *K-Geo* in Germany in February 2007.

The Ordinary General Assembly was declared open by President Cazzuffi at 11:00 AM. The required quorum was not present and the Ordinary General Assembly was closed at 11:05 AM. As permitted by the IGS bylaws, a Special General Assembly was convened at 11:10 AM and IGS Secretary Peter Stevenson presented the agenda for the meeting and the minutes for the 6th Ordinary and Special General Assemblies (Nice, France 2002), which were approved. President Cazzuffi delivered his address outlining a review of four stimulating years for IGS from Nice 2002 to Yokohama 2006. Secretary Stevenson then presented the results of the electronic ballot election for President, Vice President, and Council and gave the Secretaries report that emphasized the increasing importance of electronic communication for the affairs of the IGS.

Outgoing treasurer Wim Voskamp presented the Treasurers report, which was followed by the advice of the Financial Committee. Subsequently, the IGS Finances and the proposed continuation of the subscription fee (without change) were then approved by the membership. The Financial Committee nominees for 2006 to 2010 were approved: Pierpaolo Fantini (Italy) – Chair, Boyd Ramsey (USA), Chris Lawson (Malaysia), and Wim Voskamp (the Netherlands).

The IGS activities were approved by the membership followed by the selection of 2014 as the date of the *10th International Conference on Geosynthetics*. Also, 2010 was selected as the date of the 8th Ordinary General Assembly, which will take place in Brazil during the *9th International Conference on Geosynthetics*. No other business was introduced, and the incoming President Fumio Tatsuoka closed the Special General Assembly with a brief address. The Special General Assembly was closed at 12:05 PM.

reported by Peter Stevenson
IGS Secretary

IGS Student Award Recipients (Yokohama, Japan)

Eleven IGS Student Awards were granted for the period 2005 to 2006. This fifth IGS Student Award program took place at the *8ICG* in Yokohama, Japan, September 2006. The 2005 to 2006 student award winners and their representative Chapter are as follows:

- Carlos Santos Benjamin (Brazil)
- Zhueng, Yanfeng (China)
- Bastien LeHello (France)
- Florian Bussert (Germany)
- Agatino Simone Lo Grasso (Italy)

IGS Student Award Recipients for 2005 to 2006 (left to right): Andrei Mihai Baicu (Romania), Susumu Nakajima (Japan), Sun-Bin Kim (Korea), Agatino Simone LoGrasso (Italy), Florian Bussert (Germany), Yanfeng Zhuang (China), Bastien LeHello (France), Carlos V. dos Santos Benjamim (Brazil), Tawatchi Tanchaisawat (Thailand), Gary Fowmes (UK). Not present: Karina Lange (North America).

- Susumu Nakajima (Japan)
- Sun-Bin Kim (Korea)
- Andrei Mihai Baicu (Romania)
- Tawatchi Tanchaisawat (Thailand)
- Gary Fowmes (UK)
- Karina Lange (North America)

The IGS Student Award consists of a US$1,000 cheque, which has to be used for conference participation costs.

Congratulations to you all, and I wish you continued success in your future careers!

reported by Karina McInnis
IGS News *Editor*

Announcing the 2002 to 2005 IGS Award Recipients

IGS Awards for the period 2002 to 2005 were presented at the *8ICG* in Yokohama, Japan, September 2006.

The Awards are granted to individuals or groups of individuals who have made an outstanding contribution to the development and use of geotextiles, geomembranes, related products, or associated technologies through their scientific and technological achievements.

There are two categories of awards: the IGS Award and the Young IGS Member Award.

IGS Awards (left to right): Young In Oh and Nathalie Touze-Foltz (Young IGS Member Award recipients); GSE Lining Technologies, Ahmet Aylidek, and Abdelmalek Bouazza (IGS Award recipients). Not present: Francois Cartaud (Young IGS Award recipient).

The 2002 to 2005 IGS Award recipients and the respective award-winning project titles are as follows (technical articles will be published in March 2007):

- **Ahmet Aylidek**

  "Image analysis in geosynthetics engineering and remediation of high water content geomaterials using geosynthetics"
- **Abdelmalek Bouazza**

  "Gas migration through geosynthetic clay liners"
- **GSE Lining Technologies**

  "Comprehensive design guidance for geosynthetic materials

The 2002 to 2005 Young IGS Member Award recipients and the respective award-winning project titles are as follows:

- **Young In Oh** (see article, p. 21)

  "Development of submerged geotextile tubes for coastal protection"
- **Nathalie Touze-Foltz and Francois Cartaud** (see article, p. 22)

  "Advances in flow rate quantification through composite liners"

Congratulations to each of you for receiving this prestigious award!

reported by Karina McInnis
IGS News Editor

IGS Honourary Membership

Professor R. Kerry Rowe was awarded IGS Honourary Membership for his "exceptional service to the International Geosynthetics Society, as Editor of *IGS News*, and as President and Past President of the Society, and also for his outstanding contribution to the geosynthetics industry. Kerry joins the ranks of Prof. Masami Fukuoka, Japan (since 1989), Mr. Gert den Hoedt, The Netherlands (since 1994), and Dr. J.P. Giroud, USA (since 2002).

Kerry Rowe began his exceptional service to the IGS as the second Editor of *IGS News* in 1986 until 1990. In 1990, Kerry was elected President of the Society and served until 1994, when he became the third Past President of the Society serving until 1998. During his service as IGS President, the IGS gave it's support to 10 conferences, formed 6 chapters and created the Giroud Lecture. In addition to his unique efforts on behalf of the IGS, both in terms of growth and outreach, Kerry also experienced an exciting professional and academic career in the field of Geosynthetics which are best attested to in the receipt of an IGS award in 1996 and 2004 and in the number of papers and books he wrote in the field of geosynthetics engineering and environmental geotechnics.

Congratulations Kerry – an award well-deserved!

The IGS Plaque

The IGS Plaque recognizes the outstanding service of individuals to the IGS. The fourth issuing of the Award took place at the *8ICG* and was presented to Richard J. Bathurst and Wim Voskamp, in recognition of extraordinary contribution to the IGS and the industry.The first IGS Plaque recipient was Guy Massenaux for his contribution to the formation of the IGS and his services as IGS Secretary (1983 to 1990). The second recipient was Dr. Terry Ingold (1994) in recognition of his contribution to the advancement of the geosynthetics discipline as Editor of the journal *Geotextiles and Geomembranes* from 1984 to 1994. The third recipients were Profs. Liu Zong Yao and Wang Zheng Hong, and Senior Engineer Wang Yu Ren all of China, recognising their contribution to the development and use of geosynthetics in China and establishing the Chinese Chapter of the IGS.

Dr. Richard J. Bathurst

Awarded for distinguished service to the IGS as Editor of IGS News, *and as Vice President, President and Past President of the Society*

Richard Bathurst began his exemplary service to the IGS as the third Editor of the *IGS News* in 1990 until 1994. Richard also served as a member of the Council beginning in 1992. In 1994, Richard was elected Vice President of the Society and served until 1998 when he was elected President and served as such until 2002. In 2002, Dr. Bathurst became the fifth Past President of the Society serving until September 2006. During his service as IGS President, the IGS gave it's support to 12 conferences and formed 4 chapters. In addition to his heroic efforts on behalf of the IGS, Richard also experienced an exciting professional and academic career in the field of Geosynthetics, which are best attested to in the receipt of an IGS award in 1994 and 1998.

Ir. Wim Voskamp

Awarded for distinguished service to the IGS as Secretary from 1990 to 1994 and Treasurer from 1994 to 2002 and from 2004 to 2006

Wim Voskamp was elected to the IGS Council and the office of Secretary in 1990 during the conference in The Hague. Wim served as Secretary until 1994 and then was elected by Council as Treasurer of the Society, a position which he has held until 2006, with the only exception of the period 2002-2004. During his many years of service to the IGS as an officer, Wim has made many contributions not the least of which is the financial health of the Society. In addition, he was one of the initiators of the student award program started by the IGS in 2000 and made many contributions leading the Society in its growth and achievements. Wim also had an important career in industry as a part of the management team of the firm now known as Colbond Geosynthetics, and received an IGS Award in 2002.

The IGS Achievement Awards

The IGS Achievement Award was recently created to provide a vehicle for the chapters to identify and nominate a special member who has contributed to the chapter and to the IGS in a significant way, but who may not be identified to the IGS using any other regular mechanism.

The first IGS Achievement Awards were presented during the General Assembly in Yokohama at the *8ICG*. The recipients of the 2006 Achievement Award are: P. Aguiar (Brazil), Dennis Bergado (Thailand), S.D. Cho (Korea), K. Iwasaki (Japan), E. Leflaive (France), K. Legge (South Africa), G.V. Rao (India), Leonardo Sarti (Italy), H. Schroeder (Germany), and David Suits (North America).

The followng are descriptions of the award recipient's contributions to the field of geosynthetics and the IGS. Congratulations to all of you; your dedication to the promotion of the field of geosynthetics and the IGS have been outstanding!

Paulo Roberto Aguiar (Brazil)

Leadership in introducing geosynthetics to Brazil over the period of 1971 to the present

Eng Aguiar has served the Brazilian geosynthetics community in the role of project designer and he has been one of the coordinators of the development of geosynthetics standards through the Brazilian Association

for Standards. In addition, Eng Aguiar was one of the Brazilian pioneers who assisted in the formation of IGS Brazil, the Brazilian chapter of the IGS and he continues to serve the chapter when called.

Dennes Bergado (Thailand)

Contribution to the IGS Thailand Chapter and IGS activities as well as research and application of geosynthetics products

Over the past 20 years, Prof. Bergado has developed research programs on prefabricated vertical drains (PVDs), geotextiles, geogrids, and geomembranes at the Asian Institute of Technology (AIT), Bangkok, Thailand. In 1998, he established the Asian Center for Soil Improvement and Geosynthetics (ACSIG) at AIT, where he set up a research laboratory for geosynthetic testing. In 2001, Prof. Bergado was largely instrumental in founding of IGS Thailand Chapter and is currently serving as its President for 2004 to 2006. He is credited for the success of the use of PVDs for soft ground improvement on subsiding ground in Bangkok, Thailand, which resulted in important developments in the PVD technique (in particular) and soft ground improvement (in general). The Second Bangkok International Airport (SBIA) Project and the approach roads to this project successfully utilized approximately 300 million meters of PVD as well as other geosynthetic products. He worked on electro-osmotic (EO) consolidation with PVDs and, consequently, was invited as Guest Editor of the Special Issue of *Geotextiles and Geomembranes* on Vertical, Horizontal, Electric-Conducting and Dual Function PVDs (2004). Currently, he is working on the removal of the smear zone around PVDs by elevated temperatures using the innovative technique called thermo-PVD. He also organized several symposia and short courses as part of the outreach activities and continuing education to educate planners, users, designers and academics on the benefits and advantages of using geosynthetic products. Finally, Prof. Bergado developed and teaches the course on Ground Improvement and Geosynthetics, the only course offering geosynthetic engineering for graduate students in Southeast Asia.

Sam Deok Cho (Korea)

Leadership and service to the Korean Chapter of the IGS

Dr. Sam-Deok Cho is employed by the Korea Institute Construction of Technology. In his career, he systematically developed a design manual and specifications for geosynthetic-reinforced soil walls suitable for Korea, and he has included the manual and specification in the Road Design Handbook of The Ministry of Construction & Transportation. In addition, he has contributed to the revitalization of geosynthetic-reinforced soil walls by developing a program for the design and *in situ* measurement of geosynthetic reinforced earth walls. He has conducted research on geosynthetics since 1985, and he paved the way for developing the technology of geosynthetic applications. Currently, he is conducting important research to expand the applications of geosynthetics for: geosynthetic reinforcement for crack resistance of asphalt concrete pavement, natural fiber drains for ground improvement, and geosynthetic-reinforced embankment piles. Further, his leadership as a Vice President of the IGS Korean Chapter is exemplary, and, as Chair of the Technical Subcommittee, he contributed to the successful accomplishment of *GeoAsia 2004*, which was held in Seoul, Korea, in June 2004.

Komei Iwasaki (Japan)

Leadership and service to the Japan Chapter of the IGS

Mr. Komei Iwaski first joined the IGS in 1987 when he joined Prof Masami Fukuoka in managing the Japan Chapter of the IGS. Mr. Iwasaki served as the chapter Secretary for many years, 1987 to 1999, and the contribution of his management to the chapter and its members is recognized in the sound organization and health of the chapter.

Etienne Leflaive (France)

Contributions to IGS French Chapter and IGS Activities as well as preliminary research and applications of geotextiles

Dr. Etienne Leflaive worked for the US Army Corps of Engineers and then was in charge of Earthworks problems (1967-1977) at the Laboratoire Central des Ponts et Chaussées in Paris. Thus, he has been associated with the use of textiles in earthworks from the very beginning (first publication in 1969). He organized the development of geotextiles in a global manner through the participation of all pertinent competences, e.g.: civil engineering (designers, contractors), textiles (textile and chemical industries), research, government authorities, and standards organisations. Establishing fruitful dialogue between the civil engineering discipline and the textile community was essential for soundly based technical development. This activity led to (with the Ecole Nationale des Ponts et Chaussées) the 1st International Conference held in Paris in 1977, the creation of the French Geotextile Society, and the IGS (in 1983). Etienne was the first chair of the ISO Geotextile subcommittee and he supported the development of geotextiles through his involvement in international societies (e.g., Road engineering, Navigation, RILEM). He is the author of numerous papers and has visited 30 countries speaking on the use of geotextile.

Kelvin R. Legge (South Africa)

Outstanding service in the development and use of geosynthetics in Southern Africa

The IGS Achievement Award is given to Kelvin R. Legge for his outstanding service in the development and use of geosynthetics in Southern Africa, which includes the study of geotextile filter performance and use as augmentations to composite filters in embankment dams and his contribution to the understanding of

composite liner performance and mitigating the negative impacts thereof over and above his contribution to the specification of geosynthetic materials in national regulations.

G.V. Rao (India)

Leadership and service to the Indian Chapter of the IGS

Dr. G. Venkatappa Rao, Professor of Civil Engineering at the Indian Institute of Technology Delhi, initiated teaching and research in geosynthetics in 1986. He guided 12 Ph.D. Theses and over 60 Master's Theses and coordinated many sponsored research projects on testing, evaluation and application of geosynthetics in reinforced soil structures, pavements and landfills and developed products with natural fibres. He has organized national and international technical activities for promoting geosynthetics and he is listed as a prolific author in the *Geosynthetics Bibliography*, created by J.P. Giroud and published by IFAI. Professor Rao has participated in many IGS Conferences. His books on *Engineering with Geosynthetics*, *Geosynthetics in India*, *Coir Geotextiles* and *CPCB Manual for Hazardous Waste Landfills* are widely referred. His is the only name from India to be included in the "142 Names to Know in Geo", a world list compiled by Geotechnical Fabrics Report (IFAI). Dr. Rao is currently the Chairman of Committee on Geosynthetics of the Bureau of Indian Standards. Finally, Professor Rao is the President of the Indian Chapter of IGS and served as a Member of the IGS Council from 2002 to 2006.

Leonardo Sarti (Italy)

Development of innovative methods of placing geosynthetic filter mattresses in underwater applications

The IGS Achievement Award is given to Leonardo Sarti for his contribution towards the development of innovative methods of placing geosynthetic filter mattresses in underwater applications in Italy, with particular reference to the system recently applied in the Venice area. Further, he was a Board member of the AGI-IGS, the Italian IGS Chapter, and a member of the Organising Committee of the very succesful *EuroGeo 2* in Bologna, where he played an important role for the technical visit to the inland waterways in Ferrara province.

Hartmut Schröder (Germany)

Outstanding commitment and contribution to both the use of geosynthetics in Germany and to the chapter itself

Dr. Schröder started geotextile testing in 1983 at the Bundesanstalt für Materialprüfung (BAM) in Berlin. He was in charge of developing tests for tensile, puncture, and hydraulic properties. He was the only expert for those tests in working group AA 5.15 of the Road and Transportation Research Association (FGSV), and was involved in the working group from its inception. In the following years, his specialist topics were the weathering of geosynthetics, and their chemical and long-term behaviour. He has been a member of WG5 of CEN/TC 189 and ISO 221 from the very beginning and his independent contributions to this group, where his fundamental chemical knowledge has been extremely valuable, have been very much welcomed. After serious health problems, he is now actively back working in the field of geosynthetics, although in the meantime he has retired from the BAM.

David Suits (North America)

Meritorious service to the geosynthetic industry and dedication and service to the North American IGS Chapter

Mr. Suits served as President of NAGS from 2003 to 2005 and currently he is the Executive Director and the general Manager of NAGS. Dave is a well known figure in the geosynthetic society. He has devoted his career to promoting geosynthetics. He has organized and chaired numerous national geosynthetic conferences and currently is organizing the *Geosynthetic 2007* Conference in Washington D.C. He has served twice as the Chair of ASTM D 35 Geosynthetic Committee and received the ASTM Merit Award for this dedication. In 2006, Dave was named an emeritus member of the Transportation Research Board Geosynthetics Committee.

reported by Karina McInnis
IGS News*, Editor*

A Short History of the IGS

A Special Address at the Opening Session of the 8^{th} ICG

by J.P. Giroud, Past President of the IGS

The IGS is now recognized as one of the main professional societies in civil engineering; and it is so well established that we tend to take it for granted and forget the many benefits it provides to all of us. Therefore, a short history of the IGS may be useful.

The concept of the society was formulated in 1980. A committee had been appointed in the United States to organize an international conference on geotextiles. The first task was to select the name of the conference. We considered the name "Second International Conference on Geotextiles", thereby recognizing the International Conference on the Use of Fabrics in Geotechnics held in Paris in 1977

as the first such conference.

However, a member of the committee said that we could not call our conference the "second" because the conference held in Paris was not called the "first". My reply was that a good husband would not call his wife "my first wife". In other words, it makes sense to start numbering with the second. Finally, the minutes of the meeting stated: "The official name will be Second International Conference on Geotextiles. This name implies that the conference held in Paris in 1977 is recognized as the first and that a third conference could be organized in 1986 or 1987. Also implied is that an International Society on Geotextiles should be created."

Clearly, the concept of an International Society on Geotextiles is associated with international conferences. Significantly, the concept of the IGS emanated from people actively involved in this new discipline. As a result, the society was formed with a deep understanding of the needs of the new discipline. This explains in part the remarkable success of the IGS. In contrast, if the IGS had been created as a sub-division of an existing society in the field of civil engineering, the needs of our discipline could have been marginalized, and the IGS may not have survived.

The essential first step in any international activity is to generate world-wide interest. The first opportunity came with the Swiss Symposium on Geotextiles. In January 1982, I contacted Professor Schaerer, the organizer of the Swiss Symposium, and I suggested that a meeting be held to discuss the "creation of an international society on geotextiles" (as stated in the confirmation letter). Professor Schaerer agreed and we invited geotextile specialists from European countries.

The meeting held in Zurich in March 1982 was attended by 25 geotextile specialists from seven countries. At the meeting, I presented the concept of an international society. After discussion, all agreed that an international society on geotextiles should be formed. Having secured the support of European professionals, I presented the concept to North American professionals at an ASTM meeting in Toronto.

Clearly, the IGS was founded on international consensus. This gives the IGS an authority that is recognized worldwide. Also, this international consensus paved the way for the success of a meeting held on 4 August 1982 in Las Vegas (in conjunction with the Second International Conference on Geotextiles) to discuss the formation of the IGS.

The meeting was attended by 150 participants from 34 countries. The fact that 34 countries were represented in the decision to form the society is remarkable. At the meeting, I presented the concept of an international society and, after discussion, a vote was taken. The majority of the 150 participants voted for the formation of an international society of geotextiles. There were a few abstaining votes and no opposition.

Also, a vote, with 78% in favor, decided that international conferences will be organized every four years. Today, it seems that these conferences come automatically every four years. In reality, it was crucial to have an international consensus for this four-year interval. Also, the fact that the authority of the IGS is recognized worldwide has facilitated on several occasions the delicate selection between country-candidates for the venue of an international conference.

During the meeting in Las Vegas, an Interim Committee was formed, with Professor Schaerer as chairman. The main task of the Interim Committee was to prepare the bylaws of the society. One may think that the IGS has standard bylaws applicable to any professional society. In reality, the bylaws were carefully tailored to the needs of the new society.

Guy Massenaux wrote the remarkable bylaws that associate the manufacturers to the functioning of the IGS. This recognizes the fact that the geosynthetics discipline would not exist without the manufacturers. Corporate membership has attracted not only manufacturers, but also a variety of large organizations, which has been highly beneficial to the geosynthetics discipline.

On 10 November 1983, the Interim Committee met in Paris for the official founding of the International Geotextile Society — the IGS. Officers of the Interim Committee were co-opted as officers of the IGS, with Professor Schaerer, as president, which ensured continuity until the Third International Conference in 1986 where I was honored to be the first president elected by a General Assembly. Other presidents have followed — Kerry Rowe, Colin Jones, Richard Bathurst, Daniele Cazzuffi, and now Fumio Tatsuoka — while Pete Stevenson has ensured continuity, being the longest serving IGS officer, as treasurer then secretary.

What about geomembranes? In 1984, an International Conference on Geomembranes was being organized, and it became apparent that geomembranes belong to the same discipline as geotextiles. As Chairman of the organizing committee of that geomembrane conference, I arranged an international meeting to discuss the possible addition of geomembranes within the IGS or the formation of a geomembrane society

At the meeting, I indicated that the IGS Council offered to broaden the scope of the IGS to include geomembranes. An international committee of geomembrane specialists was formed. This committee accepted the offer from the IGS. The bylaws of the IGS were then amended to include not only geomembranes, but also all related products. Then, the time was right for a name change. In 1992, the IGS Council changed the name of the society from International Geotextile Society to International Geosynthetics Society.

In 23 years, the IGS has grown

remarkably. Today, the IGS has more than 2000 members, including more than 100 corporate members and about 200 student members. During these 23 years, the IGS has accomplished a lot, including six international conferences in Vienna (Austria), 1986, The Hague (The Netherlands), 1990, Singapore (Singapore), 1994, Atlanta (USA), 1998, Nice (France), 2002, and Yokohama (Japan), 2006; in addition to the two international conferences that preceded the formation of the IGS, in Paris (France), 1977, and Las Vegas (USA), 1982.

Other IGS activities include:

- coordination of regional activities, including regional conferences, in Europe, Asia and the Americas;
- development of chapters in 27 countries;
- an awards program with special emphasis on awards encouraging students;
- promotion of education, including preparation of technical documents;
- preparation of a comprehensive terminology and list of symbols, an essential tool to ensure consistency; and
- cooperation with other professional societies to promote the use of geosynthetics and the technical and scientific work of members of the geosynthetics discipline.

The primary goal of the IGS is the dissemination of information, through *IGS News*, the newsletter, published since 1985, and two official technical journals, *Geotextiles & Geomembranes* and *Geosynthetics International*. It should be noted that specialized organizations have ranked our two journals among the best in the field of civil engineering. The reason is simple: the editors and editorial boards of these two journals are driven by the same enthusiasm that drives the IGS officers and Council members. It should be acknowledged that dealing with the official journals has required a significant amount of work from the IGS officers, in addition to the work done by the editors (whereas many people think that technical journals are automatically run by publishing companies).

In conclusion, geosynthetics have been the most important innovation in geotechnical engineering in the second half of the 20th century. Such an outstanding discipline deserves an outstanding professional society. This outstanding professional society is the IGS. Today, we will honor the pioneers who laid the foundations for the remarkable success of the IGS. The great achievement of the pioneers was to bring together geotechnical engineers and polymer scientists, geosynthetics manufacturers and earthwork contractors, civil engineering design firms and material suppliers.

However, we have been so successful at bringing people together that we tend to keep together. As a result, today we have a new challenge. The challenge is to open our discipline to the outside world. The challenge is education as much as innovation; and the teacher becomes as important as the researcher. This is a challenge for the young members of the IGS. We, the pioneers, met our challenge, which was to bring together all people interested in geosynthetics to create a discipline. Young members of the IGS, your challenge is to bring this discipline to the world, to disseminate information. Our challenge was to converge. Your challenge is to diverge.

Young members of the IGS, you must meet your challenge. And, if you do, I can predict a bright future for geosynthetics and the IGS.

Thank you

The Chilean Chapter: Origin and Future Directions

Origins of the Chapter

Along with this feverish growth of the copper mining industry at beginning of the 1990s and its environmental impacts, geosynthetics manufacturers represented by local installers, a few foreign engineering companies, and local universities, sowed the seeds of what was to become the driving force that led to the formation of the IGS Chilean Chapter.

With the growth of the geosynthetics market, and the accumulated experience and emergence of local geosynthetics industries led by the geomembrane, geopipe, and geotextile industries, it was clear that the “real” geosynthetics competitor in Chile was none other than traditional (i.e., old) mining technology. Therefore, geosynthetics education and the dissemination of this knowledge became critically important, and the need for an IGS Chilean Chapter was evident. As a result, at the beginning of 2006, with the commitment of many IGS members and the advice Dr. Jorge Zornberg, we started the preparation of what was to formally become the IGS Chilean Chapter in July 2006.

Current Chapter Activities

An important part of our effort has been to create a solid organization, that is, a legal entity able to subsist in the course of the incoming years providing services to our community through the expansion and development of the geosynthetics industry in Chile.

Currently, the IGS Chile Chapter has 20 members and it is expecting to increase this number to 30 during the first half of 2007. The executive team members are:

- Luis Paredes (Vice-President)
- Rafael Lopez (Vice-President)
- Jaime Morales (Vice-President)
- Joel Peters (Vice-President)
- Fernando Castillo (Vice-President)
- Mauricio Ossa (President)

The IGS Chile Chapter executive team held its first meeting on 11

September 2006, in Santiago, and agreed to the following next steps:

- Become a legal entity
- Establish contact with "Cámara Chilena de la Construcción," which is a well-respected institution linked with the civil engineering industry (in progress)
- Establish contact with universities through their engineering departments

Future Chapter Activities

Future chapter activities are primarily related to education and promotion. On 20 November 2006, during Mr. George Koerner's visit to Santiago, there will be a geosynthetic lecture, which will likely be held at the University of Chile (Facultad de Ciencias Físicas y Matemáticas), in Santiago.

In March 2007, IGS Chile will sponsor a Geosynthetic Short Course, which will primarily address mining industry applications. Most of the lecturers will be individuals on staff at Vector Engineering and GSE. The lecture will be free and the exact date will be posted on the IGS Chile web page.

In the meantime, the Chapter is preparing its web page (***www.igs-chile.org***), which will contain a broad amount of information and web links to assist individuals who are looking for information on geosynthetics, and a database that will be useful to beginners and experienced users of geosynthetics. The goal is to have a fully operational web site no later than January 2007.

reported by Mauricio Ossa
IGS Chile President

Geosynthetics 2007

Geo Solutions for the Environment, Transportation and Homeland Security

16-19 January 2006, Washington, DC, USA

The *Geosynthetics 2007* conference and trade show will be held 16 to 19 January 2006 in Washington, DC, under the auspices of the Industrial Fabrics Association International (IFAI), the Geosynthetic Materials Association, the North American Geosynthetics Society, Geosynthetics Institute, and the IGS.

Conference participants will be able to explore both the construction outlook and regulatory issues shaping the future of geosynthetics materials and products and exchange new ideas, practices and applications affecting three important sectors of the geosynthetics community - the environment, transportation and homeland security.

The Conference technical and education committees have organized more than 75 technical papers, accredited short courses, workshops, keynotes and discussion panels for the 1,500 expected participants.

Timely and informative topics covering all aspects of geosynthetics in environment, transportation and construction applications will heighten awareness about the uses of geosynthetics. Programs will teach professionals at every level about geosynthetic materials, research, performance, testing, design, engineering, construction, case histories, and field experience.

Conference Schedule

Environment Conference

Tuesday, January 16

- Short courses
- Trade show & Welcome Party

Wednesday, January 17

- Keynote address
- Technical sessions
- Special session - Speaking Each Other's Language: Using Education to Bring Together Industry an Enforcement
- Trade show & Free VIP Day
- Panel discussion
- Welcome reception sponsored by Geosynthetics magazine

GRI 20th Anniversary Conference

Thursday, January 18

- Trade show & Breakfast with exhibitors
- Special session - NAGS Student Paper Competition
- Technical Program
- Reception
- GRI meeting

Transportation Conference

Thursday, January 18

- Trade show & Breakfast with exhibitors
- Special session - NAGS Student Paper Competition
- Short courses

Friday, January 19

- Keynote presentation
- Panel discussion
- Technical sessions
- Special session - ECTC Installation Training Program
- Closing reception

Information

For more information, visit the conference web site at ***www.geoshow.info***, or contact:

IFAI or GMA
1/651 222 2508
1/800 225 4324 (U.S. & Canada)
www.ifai.com
www.gmanow.com

Sardinia 2007

11th International Waste Management & Landfill Symposium

1-5 October 2007, S. Margherita di Pula, Cagliari, Italy

Sardinia 2007 is being held in S. Margherita di Pula, Cagliari, Italy, 1 to 5 October 200. The Conference is being organized by the International Waste Working Group and the Environmental Sanitary Engineering Centre and is being held under the auspices of the IGS.

The Symposium will include the following topics:

- Waste Policy and Legislation
- Waste Management Strategies
- Public Concern and Education
- Waste Management Assessment and Decision Tools
- Waste Characterization
- Waste Collection
- Waste Minimization and Material Recovery
- Biological Treatment
- Thermal Treatment
- Mechanical Biological Treatment Prior to Landfilling
- Sanitary Landfilling
- Integrated Wastewater and Solid Waste Management
- Waste Management in Developing and Low Income Countries

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IS Kyushu '07

5th International Symposium on Earth Reinforcement

14-16 November 2007, New Horizons in Earth Reinforcement

IS Kyushu conferences (International Symposiums on Earth Reinforcement) have been held in 1988, 1992, 1996, and 2001. It was decided to organize the *5th IS Kyushu* in Fukuoka, Japan, on 14 to 16 November 2007, which will be held under the auspices of the IGS.

Recently, the issues of disaster prevention and geo-environmental engineering have become very important and earth reinforcement techniques could be one of the effective solutions.

Topics

Reinforcing Materials

- Geosynthetics
- Steel materials
- New materials
- Natural materials
- Composite materials and others

Contents

- Testing methods
- Model tests (1g and centrifuge) and full scale tests
- Numerical analyses
- Design methods (performance based design and others)
- Construction technologies
- Case histories and others

Recent and New Topics

- Disaster prevention technologies (for earthquake, heavy rain and other hazards)
- Geo-environmental technologies (reinforcing landfill structure, recycling geomaterials and others)
- Combined technologies (standard reinforcing methods with other methods)
- New and classical technologies and others

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GeoAmericas 2008

The First Pan American Geosynthetics Conference and Exhibition

2-5 March 2008, Cancun, Mexico

GeoAmericas 2008 will be the first regional conference organized by the IGS and the Industrial Fabrics Association (IFAI). It will highlight current and potential applications of geosynthetics, provide a forum for geosynthetics design, and serve as the marketplace for the promotion of geosynthetic products across the Americas.

The technical, education, and exhibit programs have been carefully crafted to bring together geotechnical consultants and owners,

geosynthetics manufacturers and academics, project regulators and contractors.

The results of the Call for Proposals yielded a high number of high-quality program proposals. Thus, the foundation for the *GeoAmericas 2008* educational and technical forum not only has been successfully laid, but it has grown from the grassroots constituency of the geosynthetics community.

GeoAmericas 2008 will also host the annual *GSI Conference - GRI-21*. Complimenting the comprehensive technical program, the Conference will host a variety of special events including a beach-side bonfire, golf tournament, football/soccer match and receptions with some of Cancún's unique local flavor!

Abstract General Guidelines

All paper contributions will be in English. All accepted papers will appear in the proceedings of the conference in CD format only. Abstracts may be submitted on any generic geosynthetics topic or on any of the already identified focused geosynthetics topics including, but not limited to:

- case histories
- geosynthetic materials
- research
- performance analysis
- testing
- design
- construction methods
- field experience

Authors must submit a 300-word abstract by completing the appropriate form in the conference web site at ***www.geoamericas.info***. Authors may alternatively submit their abstract by uploading it as a supplemental document in MS Word format, also at the *GeoAmericas* web site.

Authors of accepted abstracts will be invited to submit a technical paper. All papers will be peer-reviewed and authors may be required to revise their papers based on reviewer comments.

Exceptional papers may be identified by the Session Leaders and those authors may be invited to submit an expanded version of the paper for review and publication with either of the two official journals of the IGS (*Geotextiles and Geomembranes* or *Geosynthetics International*).

Call for Abstracts Open until 31 January 2007

Contact Information

For complete abstract and paper guidelines, visit ***www.geoamericas***.info. For questions about Technical Sessions and abstracts, please contact the *GeoAmericas 2008* Technical Committee Co-chairs:

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Geosynthetics Asia 2008

4th Asian Regional Conference on Geosynthetics

17-20 June 2008, Shanghai, China

The *4th Asian Regional Conference on Geosynthetics* wil be held in Shanghai, China, on 17 to 20 June 2008. The Conference theme is *Geosynthetics in Civil and Environmental Engineering*. *Geosynthetics Asia 2008* is being held under the auspices of the IGS and organized by the Chinese Chapter of the IGS and the Chinese Technical Association on Geosynthetics.

Conference Topics

- Fundamental Principles and Properties of Geosynthetics
- Testing and Standards
- Reinforcement and Soil Improvement
- Filtration, Drainage and Erosion Control
- Landfill and other Environmental Engineering
- Engineering Measures for Natural Disasters
- Geosystems (geotubes, geocontainers, etc.)
- Transport (highway, railway, harbor, airport, etc.)
- Hydraulic structures (dams, canals, reservoirs, etc.)
- Special Case Histories and others (including unsuccessful applications)

Technical Events

- 1 Special Lecture
- 3 Keynote Lectures
- Invited reports on important projects
- Forum: Geosynthetics in environmental engineering
- Presentation of Papers
- Exhibition
- Technical visits
- Training Course

Important Dates to Remember

Abstracts due: 31 May 2007
Full Papers due: 30 September 2007
Final Papers due 31 January 2008

Contact

E-mail: **ccigs@4acg-2008sh.com**
Web site: ***www.4acg-2008sh.com***

EuroGeo4 -- Call for Abstracts

4th European Geosynthetics Conference

Edinburgh, Scotland, 7-10 September 2008

The *4th European Geosynthetics Conference*, *EuroGeo4*, will be held at the Edinburgh Conference Centre, Heriot-Watt University, Scotland from 7 to 10 September 2008. The Conference is being organized by the UK Chapter of the IGS under the auspices of the IGS and is supported by the British Geotechnical Association, Scottish Geotechnical Group, Ground Forum and the Engineering Group of the Geological Society.

The Conference will debate the subject of Geosynthetics in Civil Engineering Applications within a three-day event comprising keynote lectures, paper presentations, discussions and poster sessions.

Technical Session Topics

- Landfill engineering
- Hydraulic applications
- Environmental protection
- Durability and long term performance
- Transportation applications
- Soil stabilisation and improvement
- Innovative use of geosynthetics
- Reinforced soil walls and steep slopes
- Coastal applications
- Computer modelling of geosynthetics
- Lightweight soils
- Monitoring of geosynthetic structures
- Limit state design
- Geosynthetics in action: case histories
- Geosynthetics for risk mitigation
- Geosynthetic failures
- Sustainable solutions
- Geocontainers for environmental improvement
- Dynamic applications

Call for Abstracts

The submission of abstracts is invited for either verbal or poster presentation. Instructions for authors submitting abstracts are provided. Abstracts must be submitted via the Conference web site by 30th August 2007 (***www.eurogeo4.org***). Following acceptance, final versions of papers will be required to be submitted via this website by 30 April 2008.

For More Information

Visit the Conference web site given above for more details on the various planned activties, e.g., training course, exhibition and much more.

"Development of Submerged Geotextile Tubes for Coastal Protection"

by Dr. Young In Oh, 2006 Young IGS Award Recipient

Editor's Note

Dr. Young In Oh received the Young IGS Award at the 8ICG *in Yokohama, Japan, in September 2006, for his contributions to the development of techniques to prevent coastal erosion by the use of geotextile tubes.*

These techniques hold great promise to reduce coastal erosion, provide containment of dredged soft soil materials, and provide protection against tsunamis. Dr. Oh has been involved in full-scale field trials, numerical modelling, and laboratory testing of these systems.

Dr. Oh has demonstrated the practical use of geotextile tubes by his design contributions to a 33-km long sea dyke in Korea. This body of important work has been reported in many papers that appear in the proceedings of international conferences and in technical journals. The following article was contributed by Dr. Oh upon request.

It is my pleasure to inform you of the challenging research I have undertaken in the field of geosynthetics. I completed my Masters and Ph.D. at the University of Incheon, Korea, under supervision of Professor Eun Chul Shin. During this time, I had the opportunity to work in quite diverse research areas related to state-of-the-art concepts in the field of geotechnical engineering and geosynthetics, such as interface friction of geomembranes, stability analyses of waste landfills, development of geotextile tube technology, and numerical analyses of geogrid-reinforced embankment pile systems.

I received an IGS Student Award during the first year of the student award program at GeoAsia 2000, Kuala Lumpur, Malaysia. From 2003 to 2004, I completed a post-doctoral fellowship at the California State University in Sacramento under the supervision of Dr. Braja M. Das, where I wrote journal papers about geotextile tube technology. Currently, I am working at the Korea Geosynthetic Research Institute, and I am involved in two major geotextile tube projects in Korea. The first project is "*Temporary Construction Platform Using Stacked Geotextile Tube in Incheon Grand Bridge Construction Site*" and the second project is "*Geotextile Tube Mattress Filter in the Final*

Closure Section of Saemangeum (SMG) Sea Dyke".

This article is a summary of my PhD thesis titled "Behavior of Environmentally Sustainable Geotextile Tube." For this work, I performed various large-scale field model tests, hydraulic model tests, and field monitoring of a geotextile tube and numerical analysis of single unit of a geotextile tube using a finite element analysis program.

Figure 1. Temporary construction platform (Incheon Grand Bridge).

Figure 2. Geotextile tube mattress filter (SMG Sea Dyke).

Figure 3 Hydraulic model test.

Figure 4. Field monitoring.

Geotextile tubes for shoreline and coastal protection has been applied in many countries since the 1980s; however, the main problem with geotextile tube technology was lack of proper design criteria such as hydraulic stability, structural functionality, and knowledge of their behavior during and after construction. In the past, the design of these systems was mostly based on "rule of thumb" rather than general valid computational methods. On this basis, I started my research on geotextile tube technology to systemize the design method and construction procedures for coastal applications, which is of particular relevance in the Republic of Korea because it is surrounded by the East Sea, the Korean Strait in the south, and the Yellow Sea in the west (Oh & Shin, 2006).

In the eastern coastal region, the severe erosion process continues until early spring season during four months, as the shoreline has become stiffer and high energy waves from currents and storms are still an issue. In the west and south coastal areas, the erosion process in compounded by tremendous population growth of the inland region where land reclamation projects for residential complexes, industry and harbor facilities, and new airport construction continue to be carried out. Therefore, the feasibility of geotextile tube technology use in Korea is reasonably high and growing very fast (e.g., see Figures 1 and 2 for two major geotextile tube projects in Korea).

In my PhD research (Oh, 2003), laboratory hydraulic model tests (Figure 3), field monitoring (Figure 4), large-scale field model tests (Figure 5), and numerical analyses were performed to investigate the hydrodynamic stability, desired function, and behavior of geotextile tubes with various geotextile tube conditions. The laboratory hydraulic model tests were performed to estimate the stability and wave adsorption capacity of the geotextile tube with filling ratio and significant wave height. The case history of twin geotextile tube construction in the east coast in Korea (Shin et al. 2001) was analyzed. In situ measurements such as effective height, vertical stress of geotextile bottom, shoreline variation, and water depth of the near shore area were monitored.

Large-scale field model tests were performed on two types of dredged material (sand, silty clay) at the Songdo New City construction site. A dredging ship extracted the sand and silty clay and hydraulically pumped these dredged materials into the geotextile tube (Shin & Oh, 2003). Numerical analyses were executed for comparison with the results from the large-scale field model tests, 2-D plane strain analysis (GeoCoPS Version 2.0), and 3-D finite element model analysis. The results obtained comprise the 3-D shape of the tube, the mid-surface stresses that formed in the geotextile, and the relationship between the tube height and the amount of applied hydrostatic pressure. Various experimental model tests and numerical modeling were performed to analyze the behavior and design parameters of the geotextile tube.

Based on the results of my study, a single unit of geotextile tube for hydraulic and coastal structure can be designed (Figure 6). This Young IGS Award has provided me with an excellent opportunity to enhance and utilize this research experience. Lastly, I would like to acknowledge my Masters and Ph.D. supervisor, Prof. Eun Chul Shin – I am very grateful for his guidance and advice – and I wish to express my gratitude to the IGS and the IGS Awards Commit-

Figure 5. Large-scale field model test.

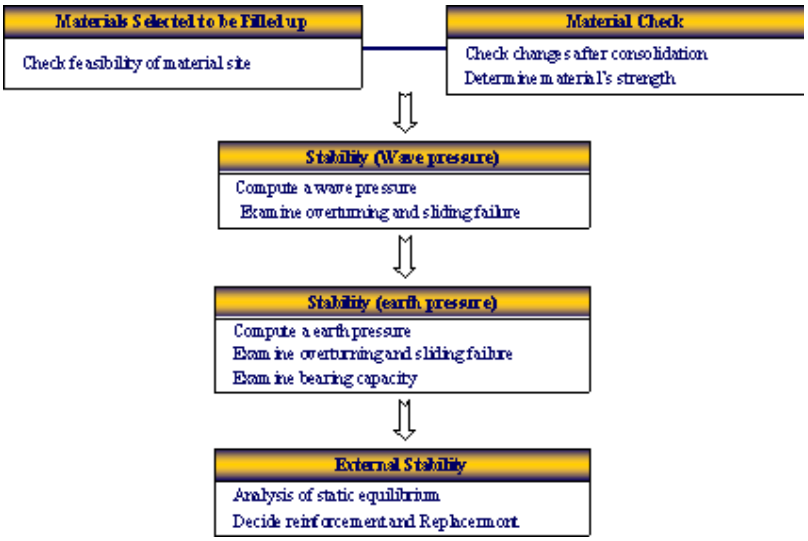

Figure 6. Design process of geotextile tube.

tee for the acknowledgement of my work with the IGS Young Award.

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Advances in Flow Rate Quantification through Composite Liners

by Drs. Nathalie Touze-Foltz and François Cartaud 2006 IGS Young Award Recipients

Editor's Note

Drs. Nathalie Touze-Foltz and François Cartaud received the Young IGS Award at the 8ICG *in Yokohama, Japan, in September 2006, for their work on the prediction of flow rates through geosynthetic composite liners. The work has involved an integrated program of experimental, analytical and numerical modelling.*

They have demonstrated the influence on flow rates through composite liner systems of defect openings, initial saturation level of a geotextile layer, geomembrane-compacted clay liner interface thickness, and saturation level of the clay interface. The results of experimental work have been used to confirm numerical modelling results. Existing equations for calculation of flow rates through composite liners have been improved, which is of great practical value to design engineers.

Numerous studies have been performed to quantify advective flow rates through composite liners due to the existence of holes in the geomembrane; these studies led to the production of analytical solutions and empirical equations. Nonetheless, the influence of some parameters on the flow rate had not been investigated yet, for example: (i) the impact of the respective locations of geomembrane holes and the spatial non-uniformities at the interface of the composite liner; (ii) the influence of partial saturation of the compacted clay liner; and (iii) the impact of the use of a geotextile at the interface of the composite liner.

The objective of the research we performed between 2002 and 2005 was to clarify the influence of these factors following three main avenues: (i) experimental investigation; (ii) development of empirical equations; and (iii) numerical modelling. These are briefly detailed in this article.

Impact of respective locations of geomembrane holes and spatial non-uniformities at the composite liner interface

Preliminary experiments performed on site have proven that similar contact conditions obtained in two composite liners made of the same materials installed in the same conditions with identical circular holes in the geomembrane could give rise to very different flow rates and extension of the wetted area as shown on Figure 1. Subse-

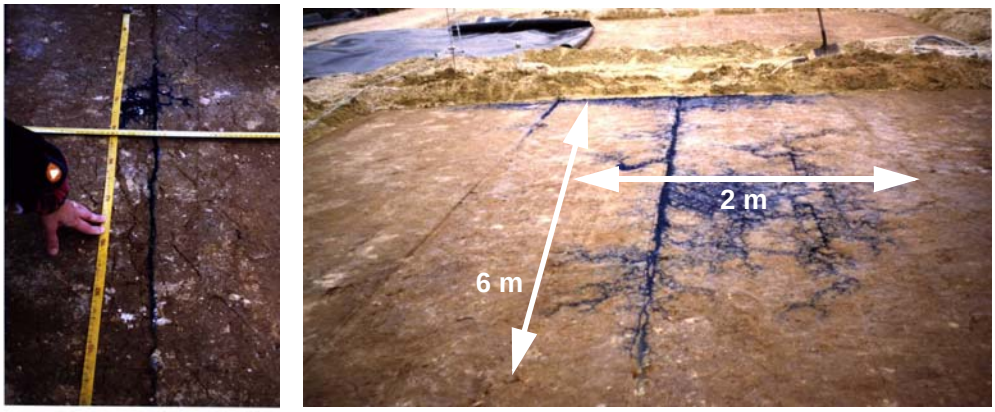

Figure 1. Aspect of wetted area obtained on two composite liners made of the same materials and having the same contact conditions.

quently, calculations were performed using analytical solutions developed for longitudinal geomembrane defects (in the case of two zones with different interface transmissivities coexisting in the composite liner) and lead to the same conclusion (Touze-Foltz 2002). Finally, 2-D numerical modelling of 1-m diameter interfaces representative of field geometries obtained from moldings performed on landfill sites was carried out.

The numerical results obtained confirmed the experimental results and analytical solutions as shown on Figure 2 (Cartaud et al. 2005b) where the impact of the hole location on the fluid velocity repartition at the interface is shown. We also demonstrated that the existence of connected apertures linking the geomembrane defect to the interface boundary is a key mechanism for fluid displacement at the interface leading to a non-negligible influence of the defect location vis-à-vis distribution of interface apertures on flow rates.

A comparison of numerical and experimental results showed that the simulated flow in interfaces of composite liners had similar hydrodynamic features to those experimentally observed.

Since 2-D modelling is not accessible to all, existing equations for the quantification of flow rates were improved, i.e. new empirical equations were developed using a clear methodology based on the use of existing analytical solutions (Touze-Foltz & Giroud 2003).

Influence of partial saturation of compacted clay liner on flow rate

2-D numerical modelling was also performed to investigate the potential influence of the partial saturation of the compacted clay liner (CCL) on flow rates in the long term (Cartaud et al. 2005a). A conceptualization of the unsaturated interface was given for the first time based on previous works performed on single fractures in porous media. The results revealed that the initial degree of saturation of the soil liner has negligible effect on flow rates and volumes infiltrated in the long term.

Impact of geotextile use at the interface of the composite liner

In France, a geotextile can be used at the interface of composite liners to prevent damage by the compacted clay liner surface, or to keep the geomembrane clean during installation prior to seaming. Consequently, we decided to study the impact of a geotextile at the composite liner interface on flow rate.

We performed experiments at the metric scale in the laboratory with three different geotextiles (Cartaud & Touze-Foltz 2004, Cartaud et al. 2005c). The results revealed that: (i) the presence of a geotextile at the interface leads to higher flow rates in the composite liner than in the case where there is no geotextile at the interface even for thin thermal-bonded products; and (ii) the hydraulic behaviour depends not only on thickness, but also on the pre-hydration and unsaturated properties of the geotextile.

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Our services include:

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- Development of projects in the area of geosynthetics
- Specialized support in the accompaniment of the work-manships
- Annotation of Technical Responsibility of the workmanships executed by Geosolutions
- Accompaniment after-workmanship

Description

The necessity of a strong and consolidated company, with operational structure capable to supply the market requirements as much as the quality of execution of geotechnical services it made to appear, in the beginning of 2005, Geosolutions Serviços de Engenharia Ltda, who since of beginning is acting in the sector of geosynthetics with know-how to guarantee the best technician results for workmanship. Having the quality as goal and the technology as allied, Geosolutions steer to success in the Geotechnical area.

Installation

Geosolutions is able to provide to its customers the most diversified geotechnicals solutions. Acting in the national market since 2005, Geosolutions supplies and installs geosynthetics in workmanships of environmental protection, e.g.:

- Sanitary Landfills
- Sewage Lagoons
- Tanks of Biological Oxidation
- Tanks of Treatment of Industrial Residues
- Water tanks
- Irrigation Channels
- Fish-breeding and Shrimp-breeding Tanks
- Manure Deposits
- Tanks of Storage of Vinhaça
- Protection of Land Barrages
- Treatment lagoons in effluent of Tannery and Cold storage rooms.

Resale

Geosolutions is credential together to the main suppliers of geosynthetics of Brazil and has a partnership of success in the commercialization of its products. Our main partner is Plastisul, a manufacturer of HDPE Geomembrane Trigeo, and also resells:

- HDPE smooth or texturized geomembrane (thickness 0.5, 0.8, 1.0, 1.5, 2.0, 2.5 mm)
- Nonwoven Geotextiles (130, 150, 180, 200, 250, 300, 400, 500, 600 g/m^2);
- HDPE Pipes and geogrid
- HDPE Profile "U" PEAD
- GCD

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Geosynthetics 2007
Washington, DC, USA
16-18 January 2007
Contact: Jill Rutledge, IFAI
E-mail: jmrutledge@ifai.com
www.geoshow.info/

EC07
Reno, Nevada, USA
12-16 February 2007
Contact: Kate Nowak
E-mail: kate@ieca.org
www.ieca.org/

Young Geotechnical African Conference (YGAC)
Tunisia
16-18 March 2007
E-mail: samia.boussetta@enit.rnu.tn

The 22nd International Conference on Solid Waste Technology and Management
Philadelphia, PA, USA
18-21 March 2007
E-mail: solid.waste@widener.edu
muse.widener.edu/%7Esxw0004/call.html

3rd Asian Conference on Unsaturated Soils
Nanjing, China
21-23 April 2007
Contact: Dr Abraham C.F. Chiu
E-mail: geotech2@hhu.edu.cn
www.geohohai.com/english/unsat.htm

16th Southeast Asian Geotechnical Conference
Subang Jaya, Selangor Darul Ehsan
8-11 May 2007
Contact: Conference Secretariat
E-mail: 16seagc@iem.org.my
www.16seagc.com

Water Resources Management 2007 Fourth International Conference on Sustainable Water Resources Management
Kos, Greece
21-23 May 2007
Contact: Wessex Institute of Technology, Zoey Bluff
E-mail: zbluff@wessex.ac.uk
www.wessex.ac.uk/conferences/2007/waterresources07/index.html

1st Middle European Conference on Landfill Technology
Budapest, Hungary
31 May - 1 June 2007
E-mail: ISSMGE@ymmfk.szie.hu

WasteTech 2007
Moscow, Russia
29 May-1 June 2007
Contact: Sergey Malygin
E-mail: s.malygin@sibico.com
w2007.sibico.com/

18th European Young Geotechnical Engineers Conference
Ancona, Italy
17-20 June 2007
E-mail: e.fratalocchi@univpm.it

IV International Conference on Earthquake Geotechnical Engineering
Thessaloniki, Greece
25-28 June 2007
Contact: Prof. Kyriazis Pitilakis
E-mail: kpitilaki@civil.auth.gr
www.4icege.org

13th Panamerican Conference on Soil Mechanics and Geotechnical Engineering
Porlamar, Nueva Esparta, Venezuela
16-20 July 2007
E-mail: svdg@telcel.net.ve
svdg.org.ve

First Sri Lankan Geotechnical Society (SLGS) International Conference on Soil and Rock Engineering
Galadari Hotel , Colombo, Sri Lanka
7-11 August 2007
Contact: Pinnaduwa H.S.W. Kulatilake
E-mail: kulatila@u.arizona.edu
www.slgssr2007.org

14th European Conference on Soil Mechanics and Geotechnical Engineering
Madrid, Spain
24-27 September 2007
Contact: secretary@ecsmge2007.org
www.ecsmge2007.org

Sardinia 2007
11th International Waste Management & Landfill Symposium
S. Margherita di Pula, Cagliari, Italy
1-5 October 2007
Email: info@sardiniasymposium.it
www.sardiniasymposium.it

10th Australia-New Zealand Conference on Geomechanics
Brisbane, Queensland, Australia
21-24 October 2007
E-mail: anzgeo2007@ccm.com.au
www.anzgeo2007.com

60th Canadian/8th CGS_IAH Conference
Ottawa, Ontario, Canada
21-24 October 2007
Contact: Dr. Sai Vanapalli
E-mail: vanapall@eng.uottawa.ca
www.genie.uottawa.ca/~vanapall/conference/index.html

IS Kyushu '07 : 5th International Symposium on Earth Reinforcement
Fukuoka, Japan
14-17 November 2007
Contact: Jun Otani
E-mail: junotani@gpo.kumamoto-u.ac.jp

14th African Regional Conference on Soil Mechanics and Geotechnical Engineering
Yaoundé, Cameroon
26-30 November 2007
www.issmge.org/addon/view.asp?EventID=329&Lang=

13th Asian Regional Conference on Soil Mechanics and Geotechnical Engineering
Kolkata,India
10-14 December 2007
Contact: Dr. N. Som
E-mail: nitin_som@vsnl.com
www.13arc2007.com/

GeoAmericas 2008
First Pan American Geosynthetics Conference and Exhibition
Cancun, Mexico
2-5 March 2008
E-mail: jmrutledge@ifai.com
www.geoamericas.info/

2nd International Conference on Geotechnical Engineering for Disaster Mitigation and Rehabilitation, GEDMAR08
Nanjing, China
16-19 May 2008
Contact person: Dr. An Deng
E-mail: gedmar08@hhu.edu.cn

6th International Conference on Case Histories in Geotechnical Engineering
Washington, D.C., USA
11-16 August 2008
Contact: Shamsher Prakash
E-mail: prakash@umr.edu
www.6icchge2008.org

Geosynthetics Asia 2008
4th Asian Regional Conference on Geosynthetics
Shanghai, China
17-20 June 2008
E-mail: ccigs@4acg-2008sh.com
www.4acg-2008sh.com

EuroGeo4
The Fourth European Geosynthetics Conference
Edinburgh, Scotland
17-19 September 2008
E-mail: eurogeo4@eurogeo4.org
www.eurogeo4.org/

XVII International Conference for Soil Mechanics and Geotechnical Engineering
Alexandria, Egypt
5-9 October 2009
www.2009icsmge-egypt.org/

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The International Geosynthetics Society

OBJECTIVES OF THE IGS

The International Geosynthetics Society was formed with the following objectives:

- to collect, evaluate, and disseminate knowledge on all matters relevant to geotextiles, geomembranes, related products, and associated technologies;
- to improve communication and understanding regarding geotextiles, geomembranes, related products, and associated technologies, as well as their applications;
- to promote advancement of the state of the art of geotextiles, geomembranes, related products, and associated technologies; and
- to encourage, through its Members, the harmonization of test methods, and equipment and criteria for geotextiles, geomembranes, related products, and associated technologies.

WHY BECOME A MEMBER OF THE IGS?

First, to contribute to the development of our profession.

By becoming an IGS Member you can:

- help support the aims of the IGS, especially the development of geotextiles, geomembranes, related products, and associated technologies;
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- provide a forum for designers, manufacturers, and users, where new ideas can be exchanged and contacts improved; and
- become increasingly informed, involved, and influential in the field of geotextiles, geomembranes, related products, and associated technologies.

Visit the IGS Web Site
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The following benefits are now available to all IGS Members:

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