

IGS NEWS



NEWSLETTER OF THE INTERNATIONAL GEOSYNTHETICS SOCIETY

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

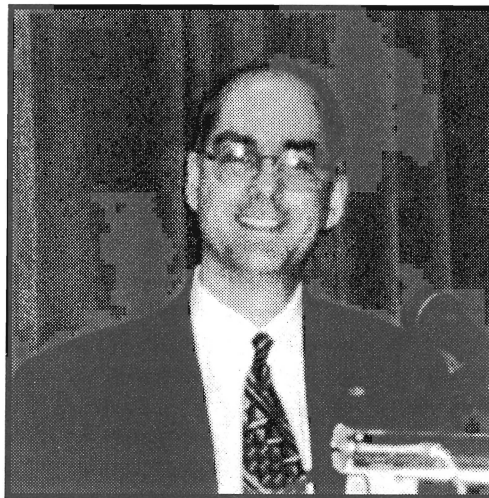
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A Message from the New IGS President Professor Richard J. Bathurst

At the Ordinary General Assembly (OGA) of the IGS held in Atlanta, USA in conjunction with the 6th International Conference on Geosynthetics (IGC) on 27 March, I was honored to be elected your president for the term 1998 to 2002.

A change of leadership of the IGS is always an opportunity to reflect on our many achievements since the formation of the IGS in 1983 and to identify objectives for the next four years. Fortunately, the society has never been in greater health. The number of individual IGS members is at a record level (close to 2000), corporate membership is at its highest level ever (74), and we have 16 chapters representing approximately 90% of our individual members. A result of the direction of Professor Colin Jones, is that the IGS is in a strong position to successfully meet its mandate to promote our geosynthetics discipline at the international and local levels. However, our success must not lull us into a sense of complacency. Much work remains to be done and I am pleased to report that the new council went to work immediately after the OGA to initiate important programs. I would like to share with you some of the initiatives that I will pursue over the next four years in concert with the other IGS officers and council members.



Professor Richard J. Bathurst,
new President of the IGS.

expect value in return for their annual membership dues. The best return on your investment that the IGS can deliver is related to education. The new council is developing a plan that will direct the IGS profits from the 6th International Conference to be put into a protected education fund. The funds will not be absorbed into the operating budget of the society. For example, education kits will be developed that include generic slide sets and supporting printed material focused on different areas of our discipline. These kits may include: reinforcement applications, geoenvironmental applications, and manufacturing processes to name a few. The IGS has already cooperated with the Federal Highway Administration in the United States to reproduce their slides and teaching aids related to geosynthetics. These materials will be made available at no charge to all chapters.

In addition, we will encourage the production of videos following the success of the two videos on geosynthetics in landfill applications and transportation applications. Specifically, in the next year the IGS will produce a third video on reinforcement applications. Industry will be invited to cooperate in this venture as co-sponsors and to contribute material to be included in the presentation.

IGS members, corporate members and our 16 chapters

The IGS will continue to encourage the development of

IN THIS EDITION:

- Past President's Message p2
- IGS Election Results p4
- IGS Ordinary General Assembly p4
- IGS Awards p5
- 6IGC Meeting in Atlanta p7

- Koerner First Giroud Lecturer p8
- IGS Football p9
- CD ROM for Teaching Geosynthetics p11
- Calendar of Events p18

Visit the IGS Web site at <http://igs.rmc.ca>

chapters. We expect to form new chapters in Australia, Columbia, Thailand, Peru and Turkey in the very near future.

The IGS will invite all chapters to submit examples of successful programs that will be passed on to other chapters as models for new initiatives. For example the North American Geosynthetics Society has an excellent Student Chapter Package that is given to each new student member and has helped to attract 60 NAGS student members in North America. We will continue to develop a program of mentored student groups in cooperation with the IGS chapters. In this program professors at universities will be supplied with educational materials on geosynthetics in return for guiding student chapters at their schools. The council is also evaluating a proposal to use the education fund to establish a fellowship that could provide financial assistance for a sabatticant to spend several months at another university in a less developed region where he can carry out research and assist with the development of new course materials on geosynthetics.

Now I will turn to other initiatives that will be pursued by the new council: The IGS is in excellent financial health. Consequently, the IGS can now play a more active role to ensure that registration fees for the next International Geosynthetics Conference to be held in Nice, France in 2002 are as low as possible. As pointed out by Professor Koerner in his opening remarks at the 6th IGC, the Industrial Fabrics Association International (IFAI) assumed the financial risk for the conference. Happily, conference registration exceeded projections. However, the financial risk that conference organizers such as the IFAI must assume carries with it the burden of greater registration fees. The IGS is seeking ways to reduce the risk so that future international conference attendees are not discouraged from attending our IGS international conferences because of prohibitive registration fees.

Our financial health allows us to undertake the initiatives outlined above without raising IGS membership dues. This means that IGS individual and corporate members are paying the same dues now as they did 14 years ago. Very few societies can record such an achievement.

At the second meeting of the new council on 29 March, council members voted to change the IGS Awards rules so that the minimum required number of IGS members for a nominated entry is one. Previously, all nominees had to be IGS members. The change in award rules will allow us to recognize deserving individuals who may not yet be members of the IGS but have nevertheless made important contributions to the technical advancement of our geosynthetics discipline. Increasing the number of nominations will add to the prestige of the award and encourage other individuals to join our society.

Turning now to the IGS council: I am delighted to welcome Mr. Stephen Corbet (UK) and Dr. Philippe Delmas (France) as newly elected members to council. These individuals bring to council a strong record of commitment to our discipline. In addition, I welcome Dr. Ennio Palmeira (Brazil) who was co-opted to council to ensure that the IGS council has representation in South America and to support new initiatives to form chapters in the Andes countries. I am pleased that Mr. Peter Stevenson, after being elected to council, has agreed to continue as IGS Secretary and thereby continue to manage the day to day operations of the IGS Secretariat in his exemplary fashion. In addition, the IGS can be assured that the financial affairs of the society will continue to be closely and responsibly managed by Mr. Wim Voskamp who has been co-opted to council and elected Treasurer. I congratulate Ing. Daniele Cazzuffi on his election as Vice President and look forward to his contributions to the team.

Finally, there is one member of the IGS team who deserves special recognition. This is Dr. David Elton, Editor of IGS News, who has worked very hard to prepare three issues of the IGS newsletter each year for the last four years. I am pleased to report that Dr. Elton has agreed to serve at least one more year as IGS Editor and thus ensure that the high quality of the newsletter is maintained in this transition year.

In closing, I am excited by the challenges of the next four years and hope that all IGS members will work with the officers and council of the IGS to continue the success of the society.

Review of the Past Four Years for the IGS

Professor Colin J.F.P. Jones

Immediate Past President of the IGS

Geosynthetic materials are relatively new and, as a consequence, the International Geosynthetics Society is a relatively young institution, being first formed in 1983. Just as geosynthetic materials and their use have developed out of all recognition, so the IGS has developed and grown into a global organization. From small beginnings the society is now an established learned society, recognized in the scientific community and instrumental in leading and setting the agenda in matters associated with geosynthetics and their related products and associated technologies. The IGS is mature.

As organizations mature so they need to change to reflect that maturity. On becoming President four years ago at the International Conference on Geosynthetics in Singapore, I set out, with the backing and support of the IGS council, to review the IGS agenda to see how the society could best serve its members. At the end of my tenure, it is appropriate to look back and see if we achieved our objectives.

Some of the changes that have occurred in the last four years may be transparent to the majority of the members but they are essential to the smooth running of the society. An

example is the initiation of new financial procedures. The finances of the IGS are sound and have always been sound, but the size of the organization is now such that full independent annual audits have been introduced.

As a society grows, so the need to transfer operational decisions and organizational matters away from the center becomes stronger. The subsidiary principle is accepted and in the last four years the IGS officers and council have tried to involve and work through the national chapters as much as possible. This close cooperation between the IGS officers and the chapters increases the efficiency and effectiveness of communication. As the chapters become a focal point for the organization of the IGS, it is especially pleasing to note the creation of the South African, Romanian, Brazilian and West Pacific regional chapters during the last four years, increasing the number to 16 in all. I expect other new chapters to follow. Where chapters do not yet exist, the Secretariat of the IGS and the Chair of the Chapters Committee remain as the prime sources of information and communication with the members.



Professor Jones gives his address at the 6IGC.

During a review of the objectives of the society in Nashville in 1995 by the council it became clear that a primary need of the society was education. Education is needed in a wide area, including education of the users of geosynthetics, education of the suppliers and designers of geosynthetic materials and also education of the educators themselves. It is a subject which is unlikely to diminish in importance as long as the uses of geosynthetics continue to grow and as long as new forms of material are developed. Have we been successful in tackling the education issue? The answer is that a start has been made but much more needs to be achieved.

Another objective set in 1995 was to increase membership with particular emphasis on the corporate and student membership. These groups are essential to the IGS with the corporate members providing essential support to the society and the students representing the future. I am pleased to report that this objective has been successfully met. In 1994 six new corporate members joined the society, in 1996 eleven further joined and in 1997 six more. In terms of membership I am pleased to report that the 1998 Membership Directory includes 1,776 individual members, 74 corporate members and 140 student members. The December 1994 equivalent records showed 1,644 members, 59 corporate members and 81 students.

The activities of the IGS are too numerous to identify in this report, but I should like to draw attention to some major developments. For some years the North American Conference has presented an example in disseminating information

relating to geosynthetics to the construction and environmental industries. A feature of these conferences has been the number of non-IGS members who attend. This is a very welcome trend. During the last four years two other regional conferences have been organized and held. The First European Conference on Geosynthetics was held in Maastricht, The Netherlands, in September 1996. The First Asian Regional Conference was held in November 1997 in Bangalore, India. The introduction of regional conferences is a clear sign that the IGS has matured into a stable global organization. Another sign of this maturity is the fact that the IGS officers are currently involved in friendly discussions with the officials of the International Society of Soil Mechanics and Geotechnical Engineering to clarify the relationship between the two societies and provide support in areas of common interest.

Every period of office passes some "milestones". In July 1997 Charles Schaerer, the first President of the IGS, died. The IGS owes a significant debt to Mr. Schaerer. The current healthy position of the society is a tribute to his leadership during its formative years.

As President of the IGS one becomes very aware of the great efforts and work of others which is freely given in support of the society. The IGS thrives on the work of the members and the best tribute to their work is the current health of the IGS. In acknowledging the work of all of the members of the society I should like to pay tribute to the service of the council members of the IGS; their dedication to the society is epitomized by Professor Fukuoka who had attended every IGS Council meeting from 1983 to the recent Maastricht meeting. The work of council members on the IGS committees, covering education, students, publications, new chapters, promotion, procedures, Asian activities and European activities, is greatly appreciated.

The day to day running of the society falls to the officers and I should like to say thank you to Wim Voskamp, treasurer of the IGS, Peter Stevenson, secretary of the IGS, and Richard Bathurst for their generous support, and to the wise counsel of the Immediate Past President Kerry Rowe.

Behind the scenes, Rosemary Stevenson keeps the wheels turning and David Elton as Editor of IGS News provides an invaluable service in communications. Finally, I should like to express the appreciation and thanks of the IGS to the North American Geosynthetics Society and IFAI for their work in organizing the 6th International Conference on Geosynthetics.

Editor's note: Professor Jones completed his term as President of the IGS in March 1998. He now serves as Immediate

Results of the IGS Elections, 1998

The IGS held elections for President and Vice President during the 6th International Conference on Geosynthetics in Atlanta, GA, USA in March 1998 as part of the Ordinary General Assembly (OGA). The elections were held by ballot at the Ordinary General Assembly (see related article below).

Professor Richard J. Bathurst, from Canada, was elected President of the society for the term 1998 - 2002. Professor Bathurst has served the society for many years in many capacities, including most recently as Vice President. The membership elected him by acclamation. Professor Bathurst addressed the assembly before the election outlining much of his program. Portions of his formal address to the IGS membership are given on p1.

Ing. Daniele Cazzuffi, from Italy, was elected Vice President of the IGS for the same term as the President.

Mr. Wim Voskamp, from The Netherlands, the former Treasurer of the IGS was co-opted to the IGS Council at the first meeting of the new council held after the Ordinary General Assembly. At that meeting, Mr. Voskamp was re-elected Treasurer of the IGS.

At the same council meeting, Mr. Peter E. Stevenson (USA) was re-elected Secretary of the IGS.

Professor Colin J.F.P. Jones (United Kingdom), having finished his term as President, now serves as Immediate Past President of the IGS. He will serve with the other officers in guiding the IGS.

IGS Council members elected by postal ballot for terms running from 1998 to 2002 are: S.P. Corbet (United Kingdom); J. Collin (USA); J-P. Gourc (France); Ph. Delmas (France); G. Heerten (Germany); P. Rimoldi (Italy); F. Tatsuoka (Japan); and P.E. Stevenson (USA). Council members co-opted in 1998 are: W. Voskamp (The Netherlands) and E. Palmeira (Brazil). The other council members, elected in 1996, are: T. Akagi (Japan); B.R. Christopher (USA); H-S. Chung (Korea); C. Lawson (Malaysia); J. Lafleur (Canada); J. Paul (United Kingdom); A.M. Scuero (Italy); and C.V.J. Varma (India).

The IGS Council includes the five IGS officers serving for the period 1998-2002.

*reported by D.J. Elton
Editor, IGS News*



Four IGS Presidents: J.P. Giroud, R.K. Rowe,
C.J.F.P. Jones, R. Bathurst.

Fifth Ordinary General Assembly of the IGS 27 March 1998

These are the minutes of the Fifth Ordinary General Assembly of the IGS and the Special Assembly of the IGS held 27 March 1998 at the Inforum Amphitheater in Atlanta, GA, USA.

The Fifth General Assembly followed immediately behind the 1998 IGS Awards Ceremony. Details of this ceremony are on p5. President Jones called the Fifth Ordinary General Assembly to order at 1545 hours. The required attendance to achieve a quorum was not present and the Fifth Ordinary General Assembly was immediately closed. A few minutes were provided for individuals in the audience who required additional time to obtain a voting package to do so. After this, President Jones opened a Special General Assembly at 1555 hours.

The Secretary presented the procedure and agenda for the Special General Assembly. Messrs. Myles, Rimoldi and Muller-Rochholz were appointed poll tellers for the upcoming elections. The minutes of the previous Special General Assembly (Singapore, 1994) were approved as read. President Jones then addressed the Special Assembly outlining the

achievements of the IGS in the four years since the Singapore meeting (see related article on p2).

Prof. Richard Bathurst, candidate for President addressed the Assembly, outlining his plan for the next four years and was elected President by acclamation (see related article on p1). The candidates for Vice President, C. Lawson and D. Cazzuffi, each addressed the Special Assembly, and the ballots for the vice presidential election were cast and collected.

The Secretary and the Treasurer (Mr. Voskamp) reported to the Special Assembly. Mr. Voskamp reported that the IGS is in fine financial health. He reviewed the sources of income for the IGS and the general financial procedures used by the IGS up to this point. The increasing size and complexity of the IGS have resulted in the decision to use professional accountants to monitor IGS finances.

The Finance Committee (Mr. Myles) reported to the Special Assembly. The Financial Report was approved by the Special Assembly. No change was proposed for the annual individual and corporate member subscription fee, and the

Society's activities were approved by the Special Assembly. The full content of the several presentations (C. Jones, R. Bathurst, C. Lawson, D. Cazzuffi, P. Stevenson and W. Voskamp) are available from the Secretary on request (see p19 for address).

Ing. Daniele Cazzuffi was elected Vice President of the IGS. The new council was announced, consisting of new members, S. Corbet (UK) and Ph. Delmas (France), and returning members J. Paul, H. Chung, A. Scuro, C. Varma, F. Tatsuoka, T. Akagi, J. Collin, J. Lafleur, P. Rimoldi, G. Heerten, J-P. Gourc, B. Christopher, P. Stevenson and C. Lawson.

Messrs. B. Myles, J. Kassner and P. Barker were appointed to serve on the Financial Committee and Messrs. S. Warner and G. Heerten were appointed to serve on the Investment Advisory Committee.

The Eighth International Conference on Geosynthetics was approved for the year 2006. The date of the Sixth Ordinary General Assembly was approved for the year 2002 in Nice, France, on the occasion of the Seventh International Conference on Geosynthetics (7IGC).

A motion was made from the floor by J. Fluet and seconded by R. Koerner that the council should be directed to explore a program of regional vice presidents, beginning with Asia, Europe, and North America.

Finally, P. Delmas gave a presentation on the attractions of Nice, France, as the venue for the 7th IGC. Immediate Past President Rowe presented President Jones with a gift on behalf of the IGS in recognition of his dedication and hard work over the past four years. As his last act as President, Professor Jones thanked the Assembly and closed the meeting.

*reported by P. Stevenson
Secretary, IGS*

IGS Recognizes Outstanding Contributions at 1998 IGS Awards Ceremony by Professor Gerald Raymond

The International Geosynthetics Society held its 1998 Awards Ceremony on Friday, 27 March 1998 at the Sixth International Conference on Geosynthetics, in Atlanta, Georgia, USA. The awards are presented to individuals, groups or organizations who have made outstanding contributions to the development and use of geotextiles, geomembranes, related products and associated technologies through their scientific and technical achievements during the four year period 1994 to 1997 inclusive.

The 1998 Award winners, starting with the Young Members Achievement Award (IGS's most important award), followed by the IGS Awards (in alphabetical order) are:

Scott Merry

Young IGS Member Achievement Award

Presented by Professor Colin Jones, President of IGS, for:

"Improvements to the multiaxial tension test for geosynthetics"

Citation: For contribution to the field of geosynthetics in testing of geomembranes. The test used strain controlled loading procedures to measure the stress/strain/time mechanical response of geomembranes. The test allows unobstructed movement of the geomembrane at large deformations. Included is a computer controlled loading algorithm to permit constant membrane stress creep tests to be performed. Results and data interpretation are included.

Richard Bathurst and Zhenqi Cai

IGS Award

Presented by Mr. Stephen Corbet, for:

"Developments in seismic analysis, design and performance of geosynthetic reinforced structures"

Citation: The team of Bathurst and Cai have contributed

greatly to the advancement of the state of knowledge and practice for geosynthetic reinforced walls and slopes under earthquake loading. This work is particularly useful in developing a level of confidence in reinforced segmental walls using geosynthetics in seismically active areas.

R. Jonathan Fannin

IGS Award

Presented by Mr. James Paul, for:

"Contribution to the advancement of soil reinforcement design using geosynthetics"

Citation: Mr. Fannin has developed a body of work which is experimental research involving laboratory tests and field measurements. The major importance is the breadth of the application of the work and its use of long term data from full scale field studies.

T. Ingold, C. Jenner, C.R. Lawson, and B. Myles

IGS Award

Presented by Ms. Yvonne Rogbeck, for:

"Development of British Standards Code of Practice for strengthened/reinforced soil and other fills"

Citation: The work involved a fundamental reassessment of the way reinforced soil structures were designed. The introduction of a partial factor of safety approach is particularly relevant to such structures and has allowed the design process to be carried out in a more consistent manner. The document is already accepted in several countries outside the United Kingdom.

H. Miki

IGS Award

Presented by Dr. Wilhelm Wilmers, for:

"Evaluation of the reinforcing mechanism of geosynthetic re-

inforced embankments”

Citation: This award is for the evaluation of the reinforcing mechanism of geosynthetics embedded in a variety of soil types including high water content cohesive soils. The work examines the reinforcement of embankment slopes and foundations exploiting the tensile properties of geosynthetics and reinforcement of embankment slopes using, in addition, the drainage properties of geosynthetics. The methods of analysis are based on the results of full scale trials.

**R.F. Wilson-Fahmy, D. Narejo, R.M. Koerner
IGS Award**

Presented by Professor Gerald Raymond, for:

“Contribution to the understanding of puncture protection of geomembranes”

Citation: The research has led to a straightforward deterministic design method for the selection of geotextiles to protect a geomembrane. The research involved theory, experimentation and worked examples for the selection of the geotextiles.

The Award rules permit awards in two categories (no awards are given if no suitable submission is forthcoming):

1. The Young IGS Member Achievement Award for IGS members who were 35 years of age or less on the 31 December of the last year of the award period (in this award period, 1997). Only one award is permitted for any one award period.

2. The IGS Award (regardless of age). A maximum of five awards are permitted in this category for any one award period. The Awards Committee were specifically directed not to nominate more than five awards or to nominate any special recognitions.

A total of 19 nominations were received by the IGS Secretariat. These nominees were asked to submit supporting material to arrive at the Secretariat by 1 December 1997. Fourteen submitted their documentation by the announced deadline and these fourteen were considered for awards (one nominee formally declined the invitation). The award process terminated at a meeting of the Awards Committee in London, UK during the week of 19 January 1998. The contributions covered all the entry categories listed in the IGS Awards Rules, namely:

- Product development
- Testing and testing equipment
- Instrumentation, monitoring and performance evaluation
- Design and design methods
- Fundamental aspects

The Committee, consisted of five voting members and a non-voting secretary (one voting member was a Council member) in accordance with the award rules. The members of the IGS Awards Committee were:

- Mr. Stephen Corbet, Maunsell Ltd., UK
- Mr. James Paul (Council Member), Tensar International, UK
- Prof. Gerald Raymond (Chair), Queen’s University, Canada
- Ms. Yvonne Rogbeck, Swedish Geotechnical Institute, Sweden
- Dr. Wilhelm Wilmers, Baustoff und Bodenprufstelle Wetzair, Germany
- Mr. Peter Stevenson, Tensar (IGS Secretary)

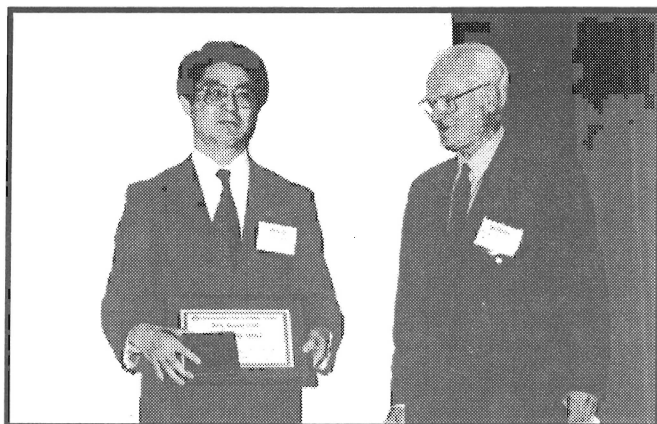
The competition was tough due to the high quality of the submitted entries. The entries reflect the commitment to the transfer of knowledge and practical experience to the improvement of appropriate standards, regulations and to the development of new or improved products. The geosynthetics community is well represented among the nominated candidates. After careful consideration a full compliment of awards was selected unanimously by the Committee. Unfortunately not all worthy nominations could be honored by an award.

The next IGS Awards will be given for work carried out during the period 1995 through 1999. All IGS members/corporations are eligible. You may nominate yourself, any member, group of members or corporation(s) who you feel have published a single or series of outstanding contribution(s) within the award period. Nomination of young members for the Young Member Achievement Award, considered the most important IGS award, is encouraged.

Editor's note: IGS President R.J. Bathurst's article (p1) notes that IGS Awards rules now require only one member of a nominated submission be an IGS member.



Dr. Scott Merry receives his award from Professor Jones.



Mr. Hiroshi Miki receives his award from Dr. Wilhelm Wilmers



The Sixth International Conference on Geosynthetics 25 - 29 March 1998

reported by D.J. Elton, IGS News Editor



The 6th International Conference on Geosynthetics was held in Atlanta, GA, USA on 25-29 March 1998. The conference was a great success, attended by over 1900 people from 61 countries and 126 exhibitors. Fifteen IGS Chapters were represented.

The conference organizers were led by Dr. Robert Koerner, Chair of the Organizing Committee. His committee consisted of:

- R. Kerry Rowe, Chairman, Technical Papers Committee and Intermediary to the IGS
- J.P. Giroud, Chairman, Special Advisory Committee
- Barry Christopher, Intermediary to the North American Geosynthetics Society
- Stephen M. Warner, Intermediary to Industrial Fabrics Association International (IFAI)
- Danette R. Fettig, Secretary-General

The conference was held at the Inforum in downtown Atlanta, GA, USA with various peripheral functions held at the Hyatt Regency Hotel.

The conference opened with the First Giroud Lecture. This is the IGS's most prestigious award. The first lecture was given by Dr. Robert Koerner on veneer cover soils. Dr. Koerner's presentation was very well received by the audience, which filled the auditorium to capacity (see related story on p8). Dr. Giroud was in attendance and recognized by IGS Immediate Past President C.J.F.P. Jones, who conducted the ceremony and introduced Dr. Koerner.

Each of the four conference days was opened with a keynote lecture. After Dr. Koerner, Professor R. Kerry Rowe spoke on temperature effects on long term landfill performance and leaks in liner systems, including the effect of wrinkles, and diffusive transport through composite liners. Professor Fumio Tatsuoka spoke on reinforced soil structures to resist seismic loads. Professor Alan McGown spoke on limit state design in reinforced structures. All keynote lecturers are very well known in these areas for their outstanding work.

Technical Presentations

There were five types of presentations - keynote lectures, technical sessions where papers were presented, workshops (where only a few papers were presented with the remaining time for discussion), a poster session, and panel sessions

where attendees could question an expert panel.

The first two days were composed of technical sessions where authors presented papers on all aspects of geosynthetics. All papers were limited to twelve minutes of presentation. Each session was concluded by a short time when attendees could ask questions of any of the authors. The moderators of the sessions took questions from the floor as well as questions submitted in writing.



Dr. Robert Koerner, First Giroud Lecturer

The last two days of the conference had a poster session, technical sessions and workshop sessions. The eighteen workshop sessions covered most areas of geosynthetic applications. Prepared papers were presented after which ample time was allowed for discussion by the attendees.

The last day, after the final technical sessions, three moderated parallel panel sessions were held. These consisted of panelists that answered questions from the audience on development and applications of geosynthetics. Questions from the floor as well as written questions were submitted, with a prize awarded for the best question. This format allowed the conference attendees to probe much deeper into the geosynthetics topics they had heard during the previous days.

IGS Activities

The IGS held its Awards Assembly during the conference. The award recipients were greeted by warm applause for their achievements. Dr. Gerald Raymond presided at the assembly. His committee honored each awardee with a short introduction and a gift. A more detailed description of the Awards Assembly is on p5.

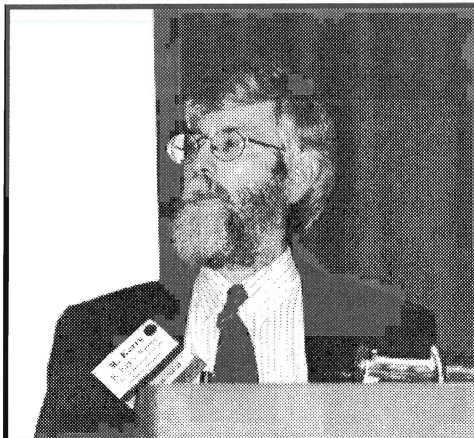
The Fifth IGS Ordinary General Assembly (OGA) was held immediately after the Awards Assembly. This assembly was used to review the IGS activities of the last four years, elect new officers and consider motions from the members. Dr. Richard Bathurst (Canada) was elected President. Ing. Daniele Cazzuffi (Italy) was elected Vice President. A new Financial Committee was appointed to oversee the financial affairs of the IGS. Messrs. Stevenson and Voskamp were re-elected Secretary and Treasurer respectively at the new IGS Council meeting following the OGA.

Social Events

The conference had three main social events. The open-

ing social, held at a ballroom in the Hyatt Regency hotel was very well attended. The attendees met to enjoy light refreshments and pleasant social interaction. Attendees used the time to get reacquainted with old friends and to meet new ones.

The closing ceremonies, also at the Hyatt Regency hotel, included a wonderful dinner accompanied by a live band. The band played contemporary American music well-suited to the occasion. After dinner, the fun began. Dr. Koerner, as Conference Chairman, conducted. He graciously thanked the many attendees for their contributions. The North American Geosynthetic Society and IFAI personnel were acknowledged and thanked. Ms. Danette Fettig, Secretary General, presented roses to several of the distinguished female attendees. In addition, she presented plaques of appreciation to several of the key people that worked diligently to make the conference such a success. Finally, the new president of the North American Geosynthetic Society, John Paulson, assembled NAGS members in front of the band and led them in singing "Great Balls of Fire", a rock-and-roll song from the 1950s. No one knows why he did this.



Professor R. Kerry Rowe delivering his lecture.

The third event was the football matches held before the Giroud Lecture which opened the technical parts of the conference. Four teams were fielded of various ages and abilities. All wore official IGS football uniforms (polyester wovens), which they were allowed to keep after their respective victories or losses. The wonderful weather in Atlanta's Piedmont Park, a few blocks from the conference site allowed a good time to be had by all. The matches were catered including breakfast foods, breads and fruit juices. While the competition was intense at times, the enjoyment was obvious at all times. The matches were organized so that teams were eliminated leading to a final match and a conference champion. Much to the chagrin of the Exsports team, the Americans won the final match 1 - 0. The losing team members (Exsports) were heard to remark that they were happy to have held the winners to only one goal! Many of the older players were easily distinguished by their sore muscles in the succeeding technical sessions. A more detailed description of the matches is on p9.

The final day of the conference, Sunday, hosted a farewell brunch, technical tours and a golf outing.

Dr. Koerner Named First IGS Giroud Lecturer and Elected to US National Academy of Engineering

Dr. Robert Koerner of Drexel University in Philadelphia, PA, USA, has been honored by two very prestigious organizations: the International Geosynthetic Society and the US National Academy of Engineering (NAE).

Dr. Koerner's formal presentation of the Giroud Lecture took place at the 6th International Conference on Geosynthetic (see related article on p7). His honorary lecture was on veneer cover soils. Dr. Koerner's presentation was very well received by the audience, which filled the auditorium to capacity. Dr. Giroud was in attendance and recognized by IGS Immediate Past President C.J.F.P. Jones, who conducted the ceremony and introduced Dr. Koerner.

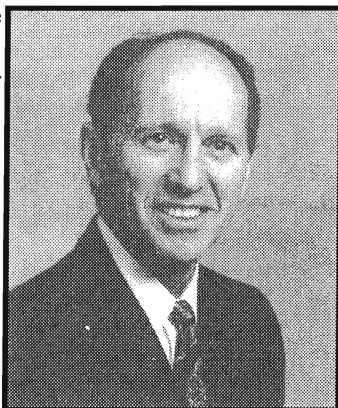
The Giroud lecture is named for Dr. J.P. Giroud, Past President of the IGS. Dr. Giroud has made many technical and professional contribution to the geosynthetic profession. The IGS announced the formation of the Giroud Lecture four years ago at the 5th International Conference on Geosynthetic (see p11).

In addition, Dr. Koerner has been elected a member of the US National Academy of Engineering. Academy membership honors those who have made "important contribu-

tions to engineering theory and practice, including significant contributions to the literature of engineering theory and practice," and those who have demonstrated "unusual accomplishment in the pioneering of new and developing fields of technology." Election to the NAE is among the highest professional distinctions accorded a US engineer. The NAE was established in 1964 under the charter of the National Academy of Sciences, as a parallel organization of outstanding engineers.

The NAE election procedure starts with the nomination by one of the members, followed by recommendation from five other members. All related information is submitted to the Committee of Peers in the Civil Engineering Section. This peer committee then makes the recommendation to the NAE committee for final selection. In 1998, eight new members were elected in the Civil Engineering Section. Induction ceremonies will be in Washington, DC on 3 October 1998 at the Academy Headquarters.

Dr. Robert Koerner graduated from Drexel University in 1956. He received his Doctoral degree from Duke University in 1968, and returned to Drexel University the same year as a faculty member in the Civil Engineering Department. His early research involved many aspects of geotechnical engi-



Dr. Robert M. Koerner

neering. In 1986, he established the Geosynthetic Institute (GSI) which is also known as GRI at Drexel University, and has been a leading figure in the geosynthetics field since then. GSI currently has 50 members which come from various sectors of the industry including government agencies, owners, manufacturers, and consultants. Recently, GSI has affiliated with FITI in Korea to form GSI-Korea.

Dr. Koerner is a dedicated teacher. He received the Lindback Award for Teaching in 1974. His contributions to the engineering community are well recognized by many organizations. A few of the many awards received by him during the

last ten years are:

- Civil Engineer-of-the-Year - Philadelphia , 1989
- Honorary Member of American Society of Civil Engineers, 1992
- Award of Merit and Fellow - American Society for Testing and Materials, 1994
- IGS Award, 1994
- 1996 American Society of Civil Engineers' Terzaghi Lecturer.

*reported by Dr. Grace Hsuan
Drexel University*

International IGS Athletes Convene In Atlanta

Fifty-eight football (soccer) enthusiasts from 14 countries contested the 6th International Conference on Geosynthetics (IGC) football competition on 25 March 1998. Four teams played the full 90 minutes, switching opponents at the half in Piedmont Park in Atlanta, Georgia, site of the IGC. Fans, supporters and the teams enjoyed the open air brunch served by the conference organizers. The two traditional competitors, the Anglo Nordic Alliance and the Latins were joined by the Americans and the Exsports.

Resplendent in their souvenir uniforms, the Latins team was comprised of players from Italy, France, Brazil, Belgium and the occasional expatriate from such unique locales as Switzerland. Northern Europe provided the core of the Anglos. The Anglos were from Norway, the Netherlands, Scotland, Germany, and England with the admirable support of one Canadian and three Americans. One could easily mis-guess the origin of the American team: based on their play it seemed they were a local professional team (including an Italian goal-keeper!) that had become lost en route to the World Cup!

Finally, the Exsports was the international group. Players



Hans von Kanel competes with Joe Cavanaugh for possession.



Wild cheering for the Anglos from the sidelines!

from Japan, Australia and Israel were joined by Americans to form this team. After play had begun, it was obvious that two of the teams could be classified as "young" (Americans and Rest of the World) while the others could be classified as "old".

The first two contests, played on parallel fields, were seriously contested by the fresh players. The first contest pitted the Anglos against the Americans and the Latins against the Exsports. The Americans came out on top 6-0. The Exsports defeated the Latins in a shootout following a 2-2 tie.

After these games, the winners played the winners and the losers played the losers. The second halves were even more competitive with the Americans scoring once against the Exsports to win 1-0, while the Latins and the Anglos drew 3 to 3. These teams opted to skip the shootout and leave the tie. Fan support was high for all teams, although cries of "Go Anglos!" was the noisiest support, coming from the north field.

*reported by P. Stevenson
Secretary, IGS*

Proceedings for the 6th IGC Available

Conference Proceedings for the Sixth International Conference on Geosynthetics are available. The prestigious conference, held 25-29 March 1998 in Atlanta, GA, USA attracted more than 1,900 participants and 126 exhibitors. The multi-volume proceedings include the Giroud Lecture, keynote lectures, as well as all papers presented at the confer-

ence in the areas of Environmental Applications, Soil Reinforcement Applications and Geotechnical & Hydraulic Applications. Individuals who did not attend the conference or conference attendees who need additional copies may order the conference proceedings in print or CD-ROM format by contacting the Industrial Fabrics Association International Book-

store, 1801 County Road B West, Roseville, MN 55113-4061 USA; Tel.: 1 (612) 222-2508 or 1 (800) 225-4324, Fax: 1 (612) 631-9334, email: bookstore@ifai.com

Prices: paper version US\$150; CD-ROM US\$75; both US\$199 (plus shipping). IGS Chapters are eligible for a discount on orders of five or more copies.

Volume 4 of the 5IGC is Now Available!

The long awaited final volume of the proceedings of the 5IGC held in Singapore in 1994 is now completed. This volume contains the special lecture by Dr. J.P. Giroud, keynote lectures, general report, and panel sessions as well as records of the discussions that took place at each and every technical session during the conference.

This post conference volume involved a tremendous effort. The Organizing Committee of the 5IGC would like to thank Professor G.P. Karunaratne who was largely responsible for completing this task.

All registered participants of the 5IGC will receive a

copy of Volume 4 of the proceedings in the near future. If you have changed your address or are interested in purchasing the four volume set of the 5IGC proceedings, please contact:

Secretariat
Southeast Asia Chapter of the IGS
510 Thomson Road
#02-03 SLF Building
Singapore 1129
Tel.: (65) 353551
Fax: (65) 3532424

*Reported by Dr. Soon-Hoe Chew
President SEAC-IGS*

IGS Committees

At the second meeting of the new IGS Council on 29 March 1998 in Atlanta, GA, USA, the following council members were elected to these IGS Committees.

Committee: Members

Chapters: D. Cazzuffi (chair), C.J.F.P. Jones (vice chair)
Education: J. Paul (chair), J-P. Gourc, J. Lafleur, T. Akagi, J. Collin, S. Corbet, C. Jones
Standards: P. Rimoldi (chair), B. Christopher, Ph. Delmas
Publications: D. Cazzuffi
Asian Activities: C. Lawson (chair), H. Chung (vice chair), C. Varma (secretary)

European Activities: G. Heerten (chair), A. Scuro (secretary)
South American Activities: E. Palmeira
Corporate Members*: R. J. Bathurst
Technical*: C. Lawson and B. Christopher (co-chairs), S. Corbet
* closed committee - IGS Council members only.

IGS members who wish to assist any open committee are invited to contact the Committee Chair directly or the IGS Secretary, P. E. Stevenson (address on p19).

reported by Prof. R. J. Bathurst, IGS President

Short News Items

ASTM Symposium

Papers are invited for an American Society for Testing and Materials (ASTM) Symposium on Grips, Clamps, Clamping Techniques, and Strain Measurements for Testing Geosynthetics. More information is available from the symposium chairman, Peter E. Stevenson, Tensar Corporation, 1230 Peachtree Street, N.W., Promenade II, Atlanta, GA, USA, 30309, Tel.: 1 (404) 713-1814, email: igspete@aol.com; or the symposium co-chairman, Sam R. Allen, TRI/Environmental, 9063 Bee Caves Road, Austin, TX 78733, Tel.: 1 (800) 880-8378, Fax: 1 (512) 263-2558, email: sallen@texasresearchintl.com

Transportation Research Board Geosynthetics Committee

The January 1999 Transportation Research Board Geosynthetics committee meeting will hold a series of presentations on determining the long term design strength of geosynthetics for reinforcement applications. This meeting is open to all conference registrants.

Professor Tatsuoka elected Japanese Chapter President

The Japan Chapter of IGS is pleased to announce that Professor Fumio Tatsuoka has been elected Chapter President, effective 16 Feb 1998 at the annual meeting of the Japan Chapter.
submitted by Prof. T. Akagi, Liaison Secretary, JC-IGS

Southeast Asian Geotechnical Society Publications Available

To celebrate their 30th anniversary, the Southeast Asian Geotechnical Society, is giving large discounts on all publications useful to the private sector, research institutes, or universities. Information on publications is available from Prof. A.S. Balasubramaniam, Hon. Secretary General, bala@ait.ac.th or at <http://www.sce.ait.ac.th/seagshome>. Tel.: 66 2 524 5519, Fax: 66 2 516 2126.

Publications of the Indian IGS Chapter Available

- 2nd International Workshop on Geotextiles - US\$100
- An Introduction to Geotextiles and Related Products in

- Civil Engineering Applications - US\$50
- Directory of Geotextiles in India - US\$30
- Proceedings of Short Course on Ground Improvement with Geosynthetics - US\$40
- Proceedings of Workshop "Engineering with Geosynthetics" - US\$40

- Geosynthetics in Dam Engineering - US\$60
- To order, please contact:
 Mr. M. L. Gupta, Member Secretary
 Central Board of Irrigation and Power, New Delhi, India
 Tel.: 91-11-6875017 or 6870117 Fax: 91-11-6116347
 http://www.cbip.org email: info@cbip.org

The Giroud Lecture

The Giroud Lecture is the most prestigious award of the IGS. The award is an honorary keynote lecture given at the International Conference on Geosynthetics, held every four years under the auspices of the International Geosynthetics Society.

This honor is named for Dr. J.P. Giroud, in recognition of his numerous contributions to the technical advancement of the geosynthetics discipline over a quarter century and his many contributions to the development of the IGS. Dr. Giroud is a Past President of IGS. The IGS announced the formation of the Giroud Lecture four years ago at the 5th International Conference on Geosynthetics.

The Giroud Lecturer is selected by the IGS Awards Committee. The committee has five regular members including its chairman (all members are appointed by the IGS Council).

The members are selected to represent a broad cross-section of geosynthetic-related technologies and experience. The Secretary of the IGS attends all meetings of the Awards Committee as an observer and coordinator. The full text of the IGS Awards rules can be obtained by contacting the Secretary of the IGS, Mr. Peter Stevenson, at the address given on p19.

The First Giroud Lecture was presented by Dr. Robert M. Koerner, of Drexel University, at the 6th International Conference on Geosynthetics. His topic was veneer cover soils (see related article on p8).

The Second Giroud Lecture has been awarded to Prof. R. Kerry Rowe, of the University of Western Ontario. Professor Rowe will present his lecture at the 7th International Conference on Geosynthetics in Nice, France, in 2002.

CD-ROM for Teaching Geosynthetics Available by Prof. Jean-Pierre Gourc

One of the aims of the IGS Education Committee (chairman Mr. James Paul) is to promote the preparation of lectures on CD-ROM. The CD-ROM format is often more convenient than 35 mm slides - more than 800 slides can be recorded on a CD-ROM with specific comments; short videos can be added.

Prof. Jean-Pierre Gourc has prepared an 800 picture CD-ROM, in English, which corresponds to his 1994 Mercer Lecture "Geosynthetics and Environmental Engineering".

It is dedicated to the various fields of application of geosynthetics in environmental engineering: pollution control (solid and liquid waste disposal), erosion control, architectural aspects, protection by energy absorption, and improvement of the domestic environment.

The CD-ROM is organized in chapters and sections to classify the 400 pictures and diagrams. It is presented as a general lesson for students and engineers about the main applications and functions of geosynthetics. An example picture is shown below.

A second CD-ROM from Prof. Jean-Pierre Gourc has also been released. It is titled: "Retaining structures with geosynthetics: a mature technique, but with some questions pending". This is based on his lecture at the First European Conference on Geosynthetics in 1996. This CD-ROM has 400 different pictures on case histories and design methods,

and contains some animation.

These CD-ROMs are available for US\$15 plus postage from the IGS Secretariat (p19) and from:

Professor J-P. Gourc
 IGS Education Committee
 LIRIGM, University Joseph Fourier
 BP 53-38041 Grenoble Cedex 9 France
 Fax: 33 4 76 82 80 70 email: gourc@ujf-grenoble.fr

Prof. Robert Koerner, of Drexel University in the US is also preparing a CD-ROM based on his Mercer Lecture.

*submitted by Prof. Jean-Pierre Gourc
IGS Council Member*



Slide in a municipal waste landfill.

Rencontres '97

The third Rencontres Conference, sponsored by the French IGS Chapter (CFG), was held on 8 - 9 October 1997 in Reims, France.

The Rencontres are the major conference of the French IGS Chapter. The conference purpose is to expand the knowledge of and the use of geosynthetics. The French Chapter has organized regional information meetings (three times a year), common workshops with civil engineering associations and the French language Rencontres Conference on geosynthetics. In addition, the chapter has produced a document of CFG Recommendations that are widely recognized by users.

For the first time, following the initiative of Ph. Delmas and D. Cazzuffi, the Rencontres Conference was held in conjunction with two other events: the PIANC conference on "Geotextiles and Geomembranes in River and Marine Works" on 7 October (Permanent International Association of Navigation Congresses - see related article in IGS News v13, no. 3, p10) and the 6th International Landfill Symposium (Sardinia '97 - see related article in IGS News v13, no. 3, p3). Holding the meetings close together was a mutually enriching experience. This format allowed experts in different geosynthetic fields to more easily exchange information and opinions.

During the meeting, several case histories were presented. These allowed non-specialists to gain a greater understanding of geosynthetics by seeing new applications and the details of geosynthetics installations. The case histories also allowed the open exchange of experiences on the use, specification, installation practices and long term behavior of geosynthetics.

The 310 participants were evenly divided between specifiers, laboratories, government, producers, contractors and installers. The technical exhibition had thirty-three participants, presenting the recent developments in geosynthetics. Thirty-seven oral presentations and ten posters covered recent appli-

cations of geosynthetics in roads, railways, tunnels, reinforcement of foundations and slopes, filtration, drainage and erosion control, canals, reservoirs and dams, and waste disposal facilities. Keynote lectures were given on the recent Recommendations of the CFG. These included not only reflective cracking applications and geosynthetic clay liners but also filtration in a lecture by Dr. J.P. Giroud. Dr. J-P. Gourc gave a lecture on the design of reinforced structures based on the recent changes in the Eurocode. Rencontres was also the opportunity to present the new French certifications for geomembranes and for geomembrane lining installers. The lessons learned from seven years of geotextile certification were also presented.

As in earlier Rencontres, a pleasant social event was part of the proceedings. This year's event took place at the Champagne De Venoge House. During an evening champagne dinner, the participants enjoyed the now well-established Organizing Committee song, a surprising geosynthetics fashion presentation, and singing by the marvelous J.P. Mazzardi, discovered during the past Rencontres in Beaune, France. The Rencontres proceedings are published in both French and English and may be ordered from: CFG Secretary c/o Eurovia, Mr. P.M. Spillemaecker, 18 place de l'Europe 95565 Rueil Malmaison, Cedex, France.

*reported by Philippe Delmas
Chairman of the IGS French Chapter*



Opening session: (left to right) Ph. Delmas, J-P. Gourc, C. Jones, P. Parisé.

IGS Chapter Reports

Brazilian IGS Chapter

Introduction

The Brazilian Chapter of IGS (IGS-Brazil) was officially formed in August 1997 after the submission of the Chapter Bylaws, evaluation and approval by the IGS Council. This report describes the activities between August and December 1997.

Chapter officers are:

Dr. Ennio M. Palmeira (President)
Dr. Delma Vidal and Dr. Mauricio Ehrlich (Vice Presidents)

Mr. Demetrius Guimaraes (General-Secretary)

Dr. Mauricio Abramento (Treasurer)

Brazilian Chapter Bulletins

In September 1997 the first local bulletin was issued to all members of the chapter and to institutions of interest. It consists of a four page (with two columns of text each) document presenting news and general information of interest to the members. It is the aim of the officers to include in all the bulletins at least one technical note consisting of a two page abstract describ-

ing a case history or research work on geosynthetics in Brazil. Two technical notes were presented in the first bulletin which dealt with a case history on road drainage using geotextiles and with the Brazilian Geosynthetics Standards. The second issue (December 1997) of the bulletin was delivered to the chapter members in the following weeks. Other materials of interest to geosynthetic professionals were also sent attached to the bulletin, such as: calls for papers or information on conferences / symposia / etc., advertisements, information on the journals *Geotextiles and Geomembranes* and *Geosynthetics International*,

information on conference proceedings and on geosynthetics software.

Increasing the Number of IGS Members

A main concern of the chapter officers, even before its official formation was to motivate and gather new members to the BIGS chapter. As a result of this effort the number of Brazilian members of the IGS increased from 14 to 48 after chapter formation. This large increase was caused by an aggressive policy of showing potential members the benefits of becoming simultaneously a member of IGS and the chapter.

The present membership composition of the chapter is:

- 15% academics
- 49% professionals in civil engineering
- 34% professionals from geosynthetics manufacturers or distributors
- 2% corporate members.

The chapter officers expect to further increase the number of chapter members during 1998.

Short Course on Geosynthetics

A short course on geosynthetics is being organized by the Brazilian Chapter of IGS (IGS-Brazil) and the Brazilian Commission on Geosynthetics of the Brazilian Geotechnical Society (CG-ABMS). This 3 day course will be held in May 1998, in São Paulo, Brazil (the largest city in the country) and is sponsored by geosynthetic manufacturers. Several distinguished professionals and academics on geosynthetics will deliver the lectures on: Basic Concepts in Soil Mechanics, Geosynthetics in Geotechnical and Environmental Engineering, Geosynthetic Properties, Drainage and Filtration with Geosynthetics, Retaining Walls and Steep Slopes, Embankments on Soft Soils (separation, reinforcement and drainage), Geosynthetics in Pavements and Railroads, Erosion Control and Environmental Protection with Geosynthetics.

The chapter intends to hold this course in different places in Brazil in 1998 with the help of local institutions and geosynthetic manufacturers.

3rd Brazilian Symposium on Geosyn-

thetics

Brazilian Symposia on geosynthetics have been held since 1992. The first one was in Brasilia (1992), the second in São Paulo (1995) and the 3rd Brazilian Symposium is being planned to be held in Rio de Janeiro, in 1999. The Brazilian Chapter of IGS, the Brazilian Commission on Geosynthetics and the Rio de Janeiro Section of the Brazilian Geotechnical Society are in charge of the organization of this event.

XI Brazilian Conference on Soil Mechanics and Geotechnical Engineering

The XI Brazilian Conference on Soil Mechanics and Geotechnical Engineering will be held in Brasilia, November 1998. Following the suggestions of the Brazilian Chapter and the Brazilian Commission on Geosynthetics (CG-ABMS) the Conference Organizing Committee included a session in the conference dealing specifically with geosynthetic applications. It will be the first time that a specific session on geosynthetics will take place at this event. Information on this event can be obtained from Prof. Ennio M. Palmeira, University of Brasilia, Department of Civil Engineering - FT, 70910-900 Brasilia, DF, Brazil, Tel.: 55-61-273 7313, Fax: 55-61-273 4644 and email: palmeira@guarany.cpd.unb.br

Acknowledgments

The IGS-Brazil would like to thank the IGS Officers and Council for the help provided to form the Brazilian Chapter and particularly Prof. Richard Bathurst for his encouragement, suggestions, and support.

*reported by Prof. Ennio M. Palmeira
President of Brazilian IGS Chapter*

Japan IGS Chapter (JCIGS)

On 16 Feb 1998, the JCIGS General Assembly was held in Tokyo. The following items were reported and approved by the membership:

- 1) Membership at the end of December, 1997:
Individual members 200

Student members 49

Corporate members 19

2) JCIGS Publications in 1997:

JCIGS Membership Directory, March
JCIGS Journal "Geosynthetic Technical Information", March, July and November

Report on the Questionnaire Survey of the Quantities of Geosynthetics used in Japan in 1995, March

Proceedings of the Third Seminar on Geomembranes, April

Introduction to Geosynthetics, July
Proceedings of the Twelfth Geosynthetics Symposium, December

3) Programs sponsored by JCIGS in 1997:

JCIGS General Assembly, Tokyo, 14 February

The Third Seminar on Geomembranes, 23 Apr, 31 participants

Seminar for Introduction to Geosynthetics, 29 Jul, 100 participants

The Twelfth Geosynthetics Symposium, Tokyo, 5 Dec, 16 papers were presented, 92 participants

Contributions to Sessions on Geosynthetics: the Annual Meeting of the Japanese Geotechnical Society (JGS), Kumamoto, 15-17 Jul and the Annual Meeting of the Japan Society of Civil Engineers (JSCE), Hachioji-shi, 10 - 12 Sep

4) Activities of JCIGS Committees

Committee meeting dates:

Steering Committee: 3/21, 6/11, 9/30

Planning Committee: 1/24, 3/21, 5/9, 6/11, 7/25, 9/30, 11/4

Programs Committee: 1/27, 4/23, 7/29, 9/5, 10/8, 10/30, 11/21

Editorial Committee for JCIGS Journal: 3/31, 8/4, 12/8

Subcommittees: 2/7, 2/14, 2/19, 3/7, 6/9, 6/17, 7/1, 10/6, 10/16, 11/5, 12/3

Geomembrane Technical Committee: 6/4, 7/4, 11/10, 12/11

Design Methodology Technical Committee:

Audit Committee: 2/14

5) Contacts with IGS

Council Meeting: Attended by Professors T. Akagi, M. Fukuoka and F. Tatsuoka in Long Beach, CA, USA, on 10 March

IGS News: The Annual Reports of JCIGS published in the March 1997 issue

List of JCIGS Members: Transmitted to IGS

6) Election of JCIGS officers for 1998 (see Appendix A)

Professor F. Tatsuoka was elected Chapter President as Professor M. Fukuoka, the Founding President, decided to step down from the presidency he has held since the official inauguration of the Japan Chapter in 1985. The new position of a Vice President was created.

7) Programs proposed for 1998 (see Appendix B)

8) Treasurer's Report: In the year 1997 the Chapter revenue was 7,897,356 yen, while the expenditures were 7,141,717 yen resulting in a nominal surplus of 755,639 yen with no reserve fund.

Appendix A: JCIGS Officers for 1998

President: Fumio TATSUOKA

Vice President: Katsuhiko MAKIUCHI

Advisors: Masami FUKUOKA, Shigeru TANAKA and Toyotoshi YAMANOUCHI

Secretary General: Komei IWASAKI

Board Members: Hiroshi ABE, Toshinobu AKAGI, Hitoshi ARAI, Naozo FUKUDA, Takashi HORIGUCHI, Shigeyosi IMAIZUMI, Makoto IMANO, Masashi KAMON, Hirotaka

KAWASAKI, Hiroshi MIKI, Kazuyuki NAKAMURA, Hidetoshi OCHIAI and Masaru TATEYAMA

Treasurer: Kiyooki FUJITA

Auditors: Kiyomaro KASAHARA and Hideo NUNOMURA

Secretary: Shiro OKURA

Appendix B: Programs for 1998

Publications of the JCIGS: Membership Directory in March; JCIGS Journals to be issued in March, July and November; Notes for the Geosynthetics Seminar on Recent International Conferences and Proceedings of the Thirteenth Geosynthetics Symposium in December.

Sponsorship of the Geosynthetics Seminar on Recent International Conferences on January 23

Sponsorship of a Geosynthetics Seminar by Mr. C. R. Lawson, an IGS Council Member on March 3

Sponsorship of the Thirteenth Geosynthetics Symposium in December

Activities by the existing Committees including Steering Committee, Planning Committee, Programs Committee, Editorial Committee for JCIGS Journal

and Geomembranes Technical Committee

Activities by the newly set up Committees including Technical Committee, Geotextiles Technical Committee, Corporate Members Committee, International Liaison Committee, Awards Committee, Educational Committee and Electronic Information (Home Page) Committee.

Participation in the IGS: JCIGS will continue to be in close contact with the IGS, send the Japanese Council Members to the IGS Council meetings to be held in Atlanta during 6IGC on 24-29 March and support Professor F. Tatsuoka, Chairman of the IGS Technical Committee on Design Methodologies.

Promotion of IGS membership drive with a goal to increase 5% by the end of 1998.

*reported by Prof. Toshinobu Akagi
Board Member, JCIGS*

Editors note: More chapter reports will be published in the next editions of the IGS News.

GeoInstitute's Committee on Geosynthetics Meets

The recently formed GeoInstitute (GI) Geosynthetics Committee held its first meeting during the 6th International Conference on Geosynthetics in Atlanta, Georgia, USA. Seventeen members and guests were in attendance. A lengthy discussion of the vision and mission of the committee was followed up with discussion of current and future activities of the committee.

Attendees were: Richard Bathurst, John Bowders (chair), David Carson, Barry Christopher, Jim Collin, Alice Comer, Mo Gabr, Bob Holtz, Hoe Ling, Mark Meyers, John Paulson, Steve Perkins, Rich Reid, Joel Sprague, David Suits, Steve Valero, and Mark Wayne.

The committee is organizing and sponsoring two sessions at the upcoming GeoCongress to be held in conjunction with the ASCE (American Society of Civil Engineers) national convention, 18 - 21 October 1998 in Boston, Massachusetts, USA. One session entitled "Geosynthetic Erosion Control Systems" has seven papers. The second session, "Geosynthetics Reinforcement Beneath Shallow Foundations", has six papers. Presenters include industry, government agencies and academics with topics from theory to case histories. The GI Geosynthetics Committee will be soliciting papers and presentations to be included in the GI conference

at Urbana, Illinois (14 - 17 June 1999). The conference theme is underground construction with parallel tracks including: urban excavation/construction, subsidence and deep rock construction. The committee encourages submission of authors/presenters with geosynthetics related topics.

Other activities include: investigating the possibility for sessions and contributed papers on geosynthetics in civil engineering applications for the upcoming ASCE national convention in Charlotte, North Carolina, USA (October 1999), developing short courses on various geosynthetics related topics and embarking on developing state-of-the-practice monographs and research needs statements for geosynthetics applications.

The committee is working to develop active liaisons with existing groups in the geosynthetic community including: the North American Geosynthetics Society (NAGS), ASTM Committee D35 on Geosynthetics, Transportation Research Board's Committee A2K07 on Geosynthetics, National Concrete Masonry Association (NCMA) and the Geosynthetics Research Institute (GRI). The GeoInstitute is part of ASCE.

*reported by Dr. John Bowders
Chair, Geosynthetics Committee, GeoInstitute*

CORPORATE PROFILES

The IGS Council has decided that in each issue of the IGS News, up to three Corporate Members will be allocated space to allow them to introduce their company or association and present their achievements. The criteria for selection of corporate profiles were described in IGS News, v4, no. 2, p7. Alternatively, you can get details by writing to the Editor. There is no charge for having a corporate profile published; it is a benefit of corporate membership.

Creative Polymer Industries Pte Ltd. ***Singapore*** ***by Sim Yong Teck, Marketing Manager***

Creative Polymer Industries Pte Ltd. was incorporated in August 1994 with a clear mission: to be a world class provider of quality prefabricated vertical drain. Our brand name is Flexi-Drain.

Creative Polymer Industries Pte Ltd. is constantly looking for effective solutions and providing quality and cost effective products and services to customers. The company philosophy is the pursuit of excellence - excellence in our products through innovative design and manufacturing process, and excellence in customer services.

Through strategic and innovative process design and control, the company has played an active role in providing industry with reliable, cost effective and quality products and helping our customers achieve market competitiveness. Our experienced professionals maintain that vital technological edge in providing our customers with specialized advice and assistance.

The company has approximately fifty thousand square feet of manufacturing space. The polypropylene products are manufactured and subject to rigorous quality control systems to ensure that they exceed the stringent requirements of various national quality standards. The products are tested by various independent laboratories. These include the Nanyang Technology University, Singapore Productivity and Standards Boards (formally known as SISIR), the Asian Institute of Technology, and TRI/Environmental Inc. (USA). Products are also tested onsite.

There are two models of Flexi-Drain. One is designed for shallow depth applications while the other is for installation depths exceeding thirty-five meters. Some of the features of Flexi-Drain are:

a) Flexi-Drain exhibits high values of mechanical properties. The filter jacket possesses consistent mechanical properties including tensile, puncture resistance, and trapezoidal tear strength. Much attention has also been given to the production of the core to ensure that sufficient mechanical properties are maintained. With this combination, Flexi-Drain offers adequate strength to withstand or minimize damage which might arise during handling and field installation.

b) Flexi-Drain has a continuous thermally bonded seam on the filter jacket. We use a continuous heat welding procedure

to weld the joint of the geotextiles which gives the seam consistent bond and tear strength. With the seam intact, it is unlikely that soil particles will pass through the joint. This is important as any gaps or voids found or accidentally created at the joint will cause soil particles to pass through, clogging the free volume of the core and affecting drain discharge performance.

c) Flexi-Drain exhibits high discharge capacity. For a vertical drain, having high discharge capacity is desirable for better performance because this speeds up the consolidation process. Our success lies in producing a core with a deeper channel depth with good mechanical properties to minimize distortion and kinking during and after installation.

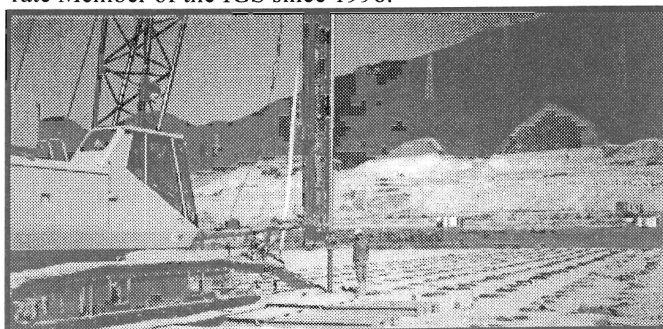
Market

Creative Polymer Industries Pte Ltd. has two manufacturing locations - one in Singapore and one in the Johor state of Malaysia. Through our distribution network, Flexi-Drain has been installed in various projects throughout Asia. Expansion into foreign countries is a top priority as our production capacity is estimated to be three million meters monthly. In order to achieve this objective we are constantly seeking enthusiastic organizations to represent and strengthen our marketing and sales network and participate in our mission.

For further information, please contact:

Sim Yong Teck, Marketing Manager
Creative Polymer Industries Pte Ltd.
33, Kian Teck Way, Singapore 628746
Tel.: 65 2616266, Fax: 65-2613337

Creative Polymer Industries Pte Ltd. has been a Corporate Member of the IGS since 1998.



Flexi-Drain being installed for a land reclamation project in Korea

Solmax International, Inc.

Varenes, Quebec, Canada

by Rene Normand

Solmax International has been installing geosynthetic containment systems for more than ten years. Solmax has recently begun manufacturing geomembranes as well, mainly in response to the needs of an increasingly demanding clientele who wish to optimize their installation quality.

Installation

Solmax International has extensive experience in the installation of high- and low-density polyethylene geomembranes and flexible polyvinyl chloride panels. Since 1981, Solmax employees have installed over 5 million square meters of geomembranes on more than six hundred environmental projects spanning three continents. These installations range from complex projects involving tank applications to vast landfill sites. Since the quality of a geomembrane is only as good as its installation, Solmax is committed to the standards of ISO 9002. For field welding, Solmax utilizes state-of-the-art heating element welding equipment. In addition, Solmax offers field personnel a nine-week (305 hour) in-house training course on "Job Site Geosynthetic Installation and Welding Methods" to keep the qualifications of the entire team at peak levels.

Technical assistance

Solmax International's internal technical support is the company's backbone. This technical assistance is closely linked to project management and is the cornerstone of successful projects. Solmax project engineers can rely on a major advantage: a practical team approach that has been developed from extensive job site experience.

Geomembrane manufacturing

Solmax International manufactures high-density and very flexible polyethylene geomembranes, utilizing a state-of-the-art blown film process to produce both smooth and textured sheets in a one-step process. By combining the principles of Total Quality Management and a commitment to continuous improvement, Solmax provides its clients with a full range of polyethylene geomembrane products, meeting the strictest industry requirements, perfectly suited to the application.

Products

The Solmax Group of Companies offers a wide range of geosynthetic products that meet the specifications of all con-

tainment and civil engineering projects. The Solmax line of geosynthetic products includes geomembranes, geotextiles, geonets, geogrids, drainage products, and other specialty products. Solmax geomembranes are available in a wide range of densities and thicknesses (smooth or textured finish). Solmax International prefabricates all of its flexible PVC geomembranes (reinforced, non-reinforced and aquaculture) through its proprietary dielectric fusion welding system, to offer panels of over 3000 m².

Quality control

All Solmax manufactured, prefabricated and installed geomembranes meet or exceed the most demanding requirements, thanks to a stringent Quality Control Program, which quantifies all manufacturing and installation procedures. This comprehensive and exhaustive program allows on-line, rapid and accurate correction of material or workmanship non-conformity. In addition to ensuring complete conformity with specifications, the Quality Assurance Program provides full written documentation as required for crucial environmental projects.

Personnel

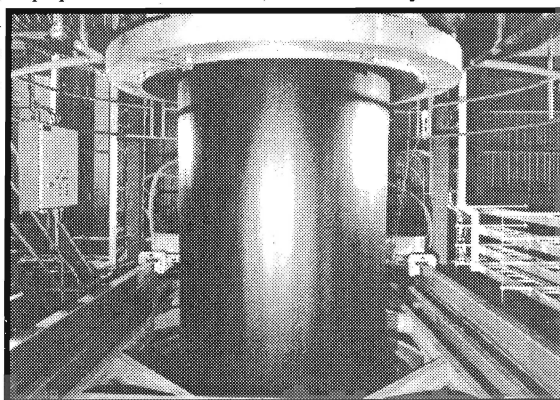
Solmax's strength lies in its multidisciplinary team, which brings together highly skilled and experienced professionals, engineers, technicians, and field personnel. Continuing training and development programs keep the qualifications of the entire team current.

Office locations

Solmax International has established a network of offices in major world markets, to offer effective solutions to all potential clients worldwide. The Solmax Group of Companies are located in Canada, the United States, Europe, and South America. For further information contact:

International Head Office
Solmax International, Inc.
2801 Marie-Victorin Blvd.
Varenes, Quebec
Canada J3X 1S7
Tel.: 1 (514) 929-1234 Fax: 1 (514) 929-1227
<http://www.solmax.com>

Solmax International, Inc. has been a Corporate Member of the IGS since 1998.



Geomembrane manufacturing at the Solmax facility.

Geosynthetics International ***an Official Journal of the IGS***

Geosynthetics International has established itself as a premier peer-reviewed journal on geosynthetics. The journal publishes technical papers, technical notes, discussions, and book reviews on all topics relating to geosynthetic materials (including natural fiber products), research, behavior, performance analysis, testing, design, construction methods, case histories and field experience.

The Editor of *Geosynthetics International* (Dr. T.S. Ingold), Co-Editor (Prof. R.J. Bathurst), and Chairman of the Editorial Board (Dr. J.P. Giroud) have more than 30 years of combined experience with the publication of technical journals. They are assisted by a first-rate Editorial Board composed of international experts that are appointed to four year terms and who represent a broad range of geosynthetics expertise. Rapid publication of papers provides subscribers with current papers covering geosynthetics research, design, construction methods and important case studies. Only papers peer-reviewed by experts are published. The journal has published over 750 pages of technical papers, technical notes, and discussions in each volume of the last two years. Special issues devoted to specific, state-of-the-art topics have included "Design of Geomembrane Applications" and "Liquid Migration Control Using Geosynthetic Liner Systems". A third special issue titled "Geosynthetics in Earthquake Engineering" was published in April 1998.

Geosynthetics International is dedicated to the mission of the IGS which is to promote the scientific and engineering development of geotextiles, geomembranes, related products, and associated technologies. *Geosynthetics International*

offers a reduced subscription rate to individual IGS members. Individual IGS members can subscribe for US\$129 per 6 issues. *Geosynthetics International* is offered to university and college libraries at US\$138 per 6 issues. The standard rate of US\$225 applies to all others.

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Geotextiles and Geomembranes ***an Official Journal of the IGS***

Volume 14 of *Geotextiles and Geomembranes* was completed earlier this year, when issue 12 was published. This issue presented the results of the First Germany/USA Geomembrane Workshop held in Berlin. S. Corbet and M. Peters served as Guest Editors.

This was rapidly followed by the publication of Vol. 15, issues 1-3. This Special Issue dedicated to the subject of Geofoam has proved very popular, mainly due to the high quality of the work compiled and edited by Professor John Hovarth.

Volume 15 will be completed with issues 4-6 being mailed out in May. This volume, containing the best papers presented at the 10th Geosynthetics Research Institute Conference, is edited by Dr. Robert Koerner.

Professor Kerry Rowe has been extremely busy editing *Geotextiles and Geomembranes* from volume 16 onwards, ensuring that the Journal returns to the publication schedule,

and raising the quality of material it contains. The publication of Volume 16, issue 1 is imminent and will herald a bright era for the Journal, as this innovative field of engineering progresses.

All technical contributions and inquiries should be directed to:

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Authors should submit four copies of any paper for review by at least two reviewers. No original figures should be included initially.

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submitted by Jim Hough, Publishing Editor

Calendar of Events

4th International Symposium on Environmental Geotechnology and Global Sustainable Development
Boston, MA, USA, 9-12 Aug 1998
Contact: Dr. Vincent O. Ogunro, Symposium Organizing Secretary, CEEST, Room E-114 University of Massachusetts Lowell, One University Avenue, Lowell, MA 01854, USA
Tel.: 1 (978) 934-3185 Fax: 1 (978) 934-4014
email: VINCENT_OGUNRO@UML.EDU

51st Canadian Geotechnical Conference, Geotechnique and Resources
Edmonton, Alberta, Canada, 4-7 Oct 1998
Contact: Don Lewycky, 2nd Floor, 11404 60th Ave. Edmonton, Alberta, Canada T6H 1J5
Tel.: 1 (403) 496 6773 Fax: 1 (403) 944 7654
email: dlewycky@gov.edmonton.ab.ca

International Seminar on Geosynthetics
Singapore, 10 Oct 1998
Contact: C-I Premier Pte Ltd., Tel.: 65 733 2922
Fax: 65 235 3530; email: cipremie@singnet.com.sg

XI Brazilian Conference on Soil Mechanics and Geotechnical Engineering
Brasilia, Brazil, Nov 1998.
Contact: Prof. E.M. Palmeira, Univ. of Brasilia, Dept. of Civil Eng. - FT, 70910-900 Brasilia, DF, Brazil
Tel.: 55-61-273 7313 Fax: 55-61-273 4644
email: palmeira@guarany.cpd.unb.br

World Road Association (PIARC)
Granada, Spain, 11-13 Nov 1998
Contact: Asociacion Tecnica de Carreteras, C/ Monte Esquinza, 24, 28010 Madrid, Spain
Tel.: 34 (1) 308 23 18
Fax: 34 (1) 308 23 19
<http://www.piarc.inrets.fr>

Geosynthetics '99
Boston, MA, USA, 28-30 Apr 1999
Contact: Danette Fettig, IFAI, 1801 County Road B West Roseville, MN 55113-4061 USA
Tel.: 1 (612) 222-2508
Fax: 1 (612) 222-8215
email: ifaidan@aol.com

EuroGeo2 Conference
Bologna, Italy, 15-18 Oct 2000
Contact: Susanna Antonielli, AGI-IGS, Piazza Bologna 22, I-00162 Roma, Italy
Tel.: +39-6 4424 9272 Fax: +39 6 4424 9274
email: agi@mercurio.it

7th International Conference on Geosynthetics
Nice, France, 22-27 Sep 2002
Contact: 7th IC IGS, BP 100, 95873 Bezons Cedex - France
Tel.: 33 (0)1 34 23 57 92 Fax: 33 (0)1 34 23 53 64

Note: Items in **bold** print are organized under the auspices of the IGS or with the support of the IGS.

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The IGS News is published three times per year. Material for publication should be submitted to the Editor or one of the Associate Editors by 16 Feb, 16 Jun, 16 Oct for the Mar, Jul and Nov issues respectively. Short articles and/or good quality photos (with a caption) are always **very welcome**.

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note: date is earliest year of continuous membership

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;
- to encourage through its members the harmonization of test methods, 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 a member of the International Geosynthetics Society you can:

- help support the aims of the IGS, especially the development of geotextiles, geomembranes, related products and associated technologies.
- contribute to the advancement of the art and science of geotextiles, geomembranes and related products, and associated technologies.
- participate in a forum for designers, manufacturers, and users, where new ideas can be exchanged and contacts improved.

Second, to enjoy the benefits.

The following benefits are available now to all IGS members:

- A directory of members, the IGS DIRECTORY, published every year, with addresses, telephone, email and fax numbers.
- Newsletter, IGS NEWS, published three times a year.
- Reduced purchase price on all documents published by the IGS.
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- A central system for ordering selected publications.
- Possibility of earning an IGS award.

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Membership of the International Geosynthetics Society (IGS) is open to individuals or corporations "...engaged in, or associated with, the research, development, teaching, design, manufacture or use of geotextiles, geomembranes, and related products or systems and their applications, or otherwise interested in such matters". The annual fee for membership is US\$45 for individuals and US\$1000 for corporate members. Individuals of corporations who voluntarily contribute a minimum of US\$200 annually to the Society, in excess of their membership dues, will be mentioned in the IGS Directory in a separate list as benefactors.

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