

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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Call for Candidates for the IGS Council: Deadline for Applications 14 February 1996

The by-laws of the IGS prescribe that up to half of the Council be elected every two years.

An election, by postal ballot, will therefore be held in May 1996 in order to elect members to the IGS Council for a four-year term, starting in July 1996.

The six members of the IGS Council whose term of office expires in June 1996 are:

- Prof. T. Akagi (Japan)
- Dr. B.R. Christopher (USA)
- Dr. R.A. Jewell (Belgium)
- Mr. C. Lawson (UK)
- Prof. C.J.F.P. Jones (UK)
- Prof. R.J. Bathurst (Canada)

Under the IGS by-laws, Prof. Jones and Prof. Bathurst are automatically members of the Council in their capacity as President and Vice-President, respectively. They do not stand for re-election in 1996. The IGS by-laws stipulate that a Council Member may serve two consecutive terms. Hence, Prof. Akagi, Dr. Christopher, Dr. Jewell and Mr. Lawson are eligible for re-election.

There are eight Council members to be elected. Under the by-laws of the IGS, only IGS members are eligible for these positions. Candidates must be able to travel to and attend the IGS Council meetings which are held once a year. Meetings of the IGS Council are generally held in

conjunction with international and regional conferences.

The next IGS Council meeting will be held in conjunction with The First European Conference on Geosynthetics (EuroGeo1) in Maastricht, The Netherlands, 30 Sep - 2 Oct 1996. At least three additional meetings will be held for those members whose terms expire in 2000. Typically these meetings are held in Asia, Europe and North America.

Signed letters of application together with a biographical note (not exceeding 12 lines) should reach the Secretary of the IGS not later than 14 Feb 1996. In their letter to the IGS Secretary, candidates must clearly identify their country of residence. Biographical notes which do not exceed 12 lines will be published in the March 1996 issue of IGS News and on the IGS World Wide Web home page.

The IGS encourages any IGS member who is able to attend all IGS Council meetings to consider standing for one of the Council positions. It is important that all geographical regions are represented on the Council and that its members reflect the scope of the geosynthetics discipline.

Should you need further information, please contact the Secretary of the IGS, Mr. P. Stevenson, or the President of the IGS, Prof. C.J.F.P. Jones (see p19 for addresses).

*reported by R.J. Bathurst
Vice President of the IGS*

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President's Message

Professor C.J.F.P. Jones

Last year the new IGS Council started a process of reviews to identify the future needs of the Society and to formulate policies which the IGS should follow in order to best serve the members. We are now beginning to see the results of these deliberations, some of which will be transparent to the members, whilst others will have a high profile.

An example of change which will have little direct impact on IGS members are the changes in the Society's financial procedures which have been introduced by IGS Treasurer Wim Voskamp. Included in these new procedures is the requirement for the Society's accounts to receive a full annual audit by an independent authority. Details of the Audit Report will be transmitted to the members through IGS News (see article p2).

One initiative which I hope will have a high profile next year is education. The IGS has produced a first video entitled "Geosynthetics in Landfills" and a second "Geosynthetics in Transportation" is being prepared. It is proposed that these, together with additional teaching material, currently being assessed, will be distributed to those members involved in the teaching of geosynthetics. To reach the widest possible audience the educational material will be distributed through the Chapters and, within the budgetary constraints of the Society, will be free (see article p3).

Next year will see the first IGS European Conference. This will be an important milestone for the Society and I should like to take this opportunity to thank the Dutch Chapter for their work so far to make this event a success, ably supported by the European Activities Committee (see article p9).

Management of the Finances of the IGS

Wim Voskamp, Treasurer of the IGS

With the growth of the Society, the yearly financial budgets have also grown. In 1994, the total budget was approximately US\$150,000 and the cash balance amounted to about US\$170,000.

In past years, the IGS Council has approved various measures to improve the financial management of the Society.

An amount of US\$100,000 is invested in marketable securities with the intention to hold these securities to maturity as non-current assets. A group of international financial experts from inside and outside the Society acts as an advisory board to the IGS Council for this investment. The investment is intended to be used as an emergency fund if unexpected financial problems arise in the future. The interest on these securities is used as regular income for the IGS.

Further, the financial records of the IGS are reviewed by a Certified Public Accountant on a yearly basis. Once every four years a financial audit is made by the CPA and the report of this audit is presented and discussed at the General Assembly of the IGS.

The CPA concluded the review of the 1994 financial records with the following statement:

"We have reviewed the accompanying statement of assets, liabilities and fund balances of the IGS as of December 31,

1994, and the related statement of receipts, disbursements and changes in the fund balances for the year then ended, in accordance with the Statements of Standards for Accounting and Review Services issued by the American Institute of Certified Public Accountants. All information included in these financial statements is the representation of the management of the IGS.

"A review consists principally of inquiries of company personnel about analytical procedures applied to financial data. It is substantially less in scope than an audit in accordance with generally accepted auditing standards, the objective of which is the expression of an opinion regarding the financial statements taken as a whole. Accordingly we do not express such an opinion. Based on our review, we are not aware of any material modifications that should be made to the accompanying financial statements in order for them to be in conformity with generally accepted accounting principles."

The review was completed on 20 August 1995.

Because of the growth of the IGS, the financial activity has become more complex. Until now the accounting was done on a cash basis. This means that payments were booked at the moment they were done. These payments were then compared with the current budget in the financial reports. However, sometimes payments are not done in the year in which the budget for the activity was approved. Such transactions which pass over the end of the year make the financial

management of the Society very complicated. It is not easy to compare budgets with actual payments. These payments can be as a credit or debit. Without a lot of detailed explanation, it becomes very hard to get an exact overview of the financial situation at the end of a year.

I have therefore, with the support of the IGS Certified Public Accountant, proposed to the IGS Officers and Council to change the accounting system from a cash based accounting system into an accrual accounting system. This change has been approved at the last Council meeting and was introduced as of 1 Jan 1995. By using the accrual method our financial statements and budget will be able to report the year's financial statements and budget without waiting for pending cash transactions to be accomplished. As a practical conse-

quence, all committees and other persons, working on behalf of the IGS, must finalize their accounts and hand in their invoices within ninety days of the end of the year.

The Council further approved the proposal that the Certified Public Accountant will make a full audit of the financial records every year. This means that every year the financial records of the IGS will be controlled and an independent accountant's report will be issued. It is the intention to publish this report every year in the IGS News. In this way, we make sure that the IGS members are fully aware of the financial situation of the Society. The independent audit of the books ensures the proper management and reporting of the IGS finances.

IGS Seeks Host for the 7th International Geosynthetics Conference

The IGS invites chapters and interested organizations to express their interest in organizing the Seventh International Conference on Geosynthetics which will be held in 2002. The history of the conferences is:

- First IGC, Paris, France 1977
- Second IGC, Las Vegas, USA 1982
- Third IGC, Vienna, Austria 1986
- Fourth IGC, The Hague, The Netherlands 1990
- Fifth IGC, Singapore, Singapore 1994
- Sixth IGC, Atlanta, USA 1998

and, finally, the Seventh IGC, ?, 2002

The IGS Secretary will provide a detailed information package that informs and instructs interested parties on the proper procedure for preparing a bid to host the conference. Interested chapters and organizations should contact the Secretary at the address on p19.

Chapters and any other interested organizations are required to submit a written letter of intent to the IGS Secretary by 3 June 1996 indicating their interest in hosting the 7th International Conference on Geosynthetics.

The IGS Program on Geosynthetics Education

In a decision taken by the IGS Council in Beaune, France, September 1995, the IGS has begun a new program focused on education. In principle, the IGS plans to take advantage of its world wide scope and its contacts around the globe to assist the world education community in teaching the application of geosynthetics. To start the program, the IGS plans to distribute copies of the IGS video "Geosynthetics in Landfills" to the education community, worldwide.

To do this, Chapters will be asked to review their membership for key educators and to recommend, to the IGS, those individuals who can provide the most benefit to the discipline and the Society's membership by receipt and use of this material.

As noted, in 1996, the IGS will provide the copies of the IGS video "Geosynthetics in Landfills" to the selected educators at no cost to the educator. In the future, the IGS expects to follow this initial step by distributing copies of the video "Geosynthetics in Transportation", which is now in production, in a similar manner. The program is expected to be further expanded and to continue with the IGS offering additional items to the education community. These additional

items will include slide presentations prepared, for example, by such organizations as The Netherlands Chapter or the North American Chapter of the IGS. Work has already commenced to adapt a slide presentation on hydraulic applications prepared in The Netherlands. This work involves translation to English of any text slides. The IGS will then fund duplication and distribution of the slides to the selected educators. Similarly, work will begin soon to adapt a NAGS presentation on waste containment applications. It is hoped, and expected, that many Chapters, national organizations and commercial agencies will offer educational materials for adaptation and distribution to the education community.

The Chapters will play two key roles in the process. As mentioned earlier, Chapters may wish to organize and offer presentations for adoption and distribution by the IGS. More importantly, the Chapters must guide the distribution of the materials to ensure the broadest benefit to the Society's membership. As with all resources, time, materials and money are finite and decisions must be made to properly distribute the materials to the education community. The IGS requests that the Chapters select and prioritize potential recipients in their membership. Presidents and officers of Chapters may rest as-

sured that the IGS will make every effort to satisfy the depth of demand in any one Chapter. However, the IGS will also make every effort to ensure that the entire global membership is well served by this opportunity. Consequently, it is vital that the Chapters prioritize their requests for copies of the video "Geosynthetics in Landfills" in light of the broadest immediate impact on their membership as well as in light of future opportunities to select recipients of the next generation of educational materials.

Chapter presidents are requested to respond to the Secre-

tary of the IGS with recommendations including the names of the institutions and the educator at the earliest convenience, but, specifically by 31 Jan 1996, in order to insure that materials can be duplicated and distributed in time to benefit the education community during the 1996-1997 academic year. Of course, any Chapter officer, or any member, is encouraged to communicate with the officers and Council of the IGS to discuss and clarify any issues concerning this program.

*reported by P.E. Stevenson
IGS Secretary*

Benefits of Corporate Membership

The benefits of Corporate Membership in the IGS are manyfold. One effective way to review them is by categorization. Alphabetically, these benefits can be grouped into advertising, economics, governance and prestige.

Low cost but effective advertising is clearly an outstanding benefit of membership. First, there is the companies descriptive insert (advertisement) in the IGS Annual Directory. This publication is a daily reference tool for more than 1600 professionals in the geosynthetics discipline. The corporate members insert can be any length up to one full page and can present the company in the precise light the firm chooses. Further, this same descriptive insert can be included in the IGS information package on the Internet (home page). For the IGS descriptive package on the Internet, the IGS will create subpages for each company that desires this representation.

Another advertising venue is the IGS News. Each corporate member is invited by the IGS News editor to prepare a company profile for publication in the IGS News. A company profile may contain news about the company as well as case histories. This benefit affords a corporate member the opportunity to inform the entire geosynthetics community about the firm's achievements. A final advertising benefit is that a list of corporate members is prominently presented in each issue of the IGS News and in the IGS

Directory. This same list is proudly displayed in the IGS booth at regional and international conferences.

There are several economic benefits to corporate membership. First, reduced cost of exhibition space and conference fees at IGS regional and international events is available to all members. Second, the IGS exhibition guidelines encourage organizers to include free conference attendance in the exhibitors' package.

Governance is a powerful benefit. Working through the corporate committee, the corporate member can advise and inform the officers and council. This gives the company an important voice in the direction of programs such as education, selection of venues for conferences and exhibitions, or the development of a code of ethics.

Prestige is also a powerful benefit of corporate membership. The companies are seen as sustaining members of a dynamic professional society with proven programs of international and regional conferences on three continents. Finally, recognition as a sponsor of the IGS efforts to teach and grow the industry may be the ultimate benefit to corporate membership in the IGS.

*contributed by P.E. Stevenson
IGS Secretary*

Benefits of IGS Membership

There are many benefits to belonging to the IGS.

The first, most powerful and important benefit is that the IGS provides its members a real opportunity to grow the discipline, influence the industry and create opportunity. For example:

1. Teachers can both create or take advantage of the work of the IGS. Two important and useful references are Dr. Giroud's "Geosynthetics Bibliography", and the "IGS Codes of Practice Bibliography". The IGS continues to support the

publication of generic documents;

2. Producers can reference IGS publications on codes of practice, standards and test methods to assess market opportunity as well as give direction to the discipline through authorship of guidelines for commercial expositions (e.g. Naue in Germany) and the development of codes of ethics (e.g. Tenax in Italy)..

3. The general membership can benefit by creating, as well as receiving, focused news and information through the IGS

News or the several publications affiliated with the IGS.

Many of the benefits of joining IGS are given in IGS brochures available to any member for file or distribution. To receive copies please contact the IGS Secretary. A quick summary follows:

Benefits to all members:

- the annual IGS Membership Directory, containing full address, telephone, telefax, telex and email address of each member, published in January.
- preferential treatment at conferences organized by the IGS or under its auspices.
- subscription to the IGS newsletter, IGS News, published three times a year.
- the possibility of receiving an IGS Award for technical excellence.
- the opportunity to join and serve on a specific international committees.
- reduced prices on documents published by the IGS.
- preferential subscription rates for the official journals of the IGS "Geotextiles and Geomembranes" and "Geosynthetics International".
- reductions in fees at all international, regional or national conferences organized by the IGS or under its auspices.

Additional benefits to corporate members include:

- the right to display the IGS logo at exhibitions and in promotional literature.
- priority (by seniority) at all exhibits organized by the IGS or under its auspices.

Student benefits:

- student discounts at IGS sponsored conferences/seminars.
- inclusion in the IGS Directory in a special student section.
- free subscription to the IGS News.
- eligibility for awards, including the Young IGS Member award.
- listing of theses related to geosynthetics in the IGS News.

So, take the challenge, get the most out of your benefits through your membership. The Society and the industry await you.

*contributed by P.E. Stevenson
IGS Secretary*

Corporate Membership Continuity... or The Merits of a Good Name

There have been many changes in the membership over the history of the IGS. One of the most confounding problems to the IGS occurs when a corporate member company is sold. Corporate memberships are dated from the time the member joins - however, when the company is sold, there has been a question of what to use as the date of corporate membership.

The sale of a company had no effect on its participation in the geosynthetics industry nor its support of the IGS, and yet the company typically took on new ownership and a new name. This has, for some time, been a concern of the IGS, as well as some cause of discomfort. How could the IGS continue to honor the founding members, who represented a continuous history of support, and also recognize that an enterprise that had a new name but was the same in every

other respect was also worthy of recognition for its long history of support?

In the past, a change in corporate ownership was treated as a new member. For example, the Exxon ownership of the Pontypool (UK) manufacturing facility is recognized from the date of Exxon ownership and not the original ICI corporate membership in the IGS. This policy was revised in Beaune, France by the IGS Council on 28 Sep 1995. Henceforth, any corporate entity that experiences a change in name or ownership will enjoy the historical recognition and seniority that ensued from the original membership. This policy will be implemented at once and will be retroactive.

*contributed by P.E. Stevenson
IGS Secretary*

1995 IGS Directories Available for IGS Student Members

The IGS is presently finalizing the 1996 IGS Directory for its members. Nevertheless, the current remaining 1995 IGS Directories are still a valuable publication. Recently, the IGS Council agreed to offer 1995 directories to IGS student members.

IGS Chapters with student members are invited to contact the IGS Secretary (p19) and request that a specified

number of 1995 directories be mailed directly to the Chapter address. The directories will be sent in the order the requests are received until the stock is exhausted.

*reported by R.J. Bathurst
Vice President of the IGS
Chairman of the Publications Committee*

IGS Awards for 1992-95: Call for Submissions ***(deadline for nominations: 31 January 1996)*** ***(deadline for submissions: 31 March 1996)***

Purpose

IGS Awards will be granted in 1996 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. Awards will be made for the recognition of achievements completed and/or the validity of which has been demonstrated during a four-year period preceding the year of the award (i.e. 1992 through 1995 inclusive).

Types of Awards

There are two awards:

- the Young IGS Member Award for IGS members who are less than 36 years of age on 31 Dec 1995.
- the IGS Award (regardless of age).

A maximum of five IGS Awards will be granted. Each award will consist of a specially commissioned medal and a diploma.

The winners will also be featured at the IGS booth at any conference held under the auspices of the IGS and will be publicized in IGS News, in special press releases, on the IGS World Wide Web home page, and in other publications.

Candidates

All candidates must be members of the IGS. All members of the IGS are eligible with the exception of the President of the IGS and the members of the Awards Committee.

In the case of a group submission to the Young IGS Member Award all members of the group must satisfy the age requirement. Any individual or group that is a candidate for the Young IGS Member Award is automatically considered for both award categories (unless requested otherwise by the candidate(s)). However, a candidate may only receive one award for the 1992-1995 period.

Nominations

Nominations of candidates should be typed in English on plain paper (not letterhead) and submitted to the IGS Secre-

tary at the address on p19. The nomination must include a clear statement of the contribution of the candidate(s) that is to be considered:

- if a product, then provide a clear definition of the product,
- if a paper(s) or book, then give a full reference of the paper(s)/book,
- if a report, provide a full reference to the report,
- if a construction method, provide a clear description of the method and any references.

A statement indicating the originality, and significance of the candidate's contribution to the discipline (i.e. in the field of geotextiles, geomembranes, related products and associated technologies).

Nominations may be made by any IGS member except members of the Awards Committee. Under the IGS Awards rules any IGS member can nominate himself/herself for any award. The Publications Committee, Education Committee, Corporate Members Committee and IGS Chapters will be invited to make nominations.

Candidates who have been nominated will be contacted by the IGS Secretary. Candidates will be asked to agree to stand for an award and will be required to submit materials as directed by the Awards Committee. All nominations and award entries will be carried out in the strictest confidence by the IGS Secretary and the Awards Committee.

IGS Awards Committee

The Awards Committee will comprise five regular members including its chairman (all members will be selected by the IGS President from a list approved by the IGS Council). The members will be selected so as to represent a broad cross-section of geosynthetic-related technologies and experience. The IGS Secretary may attend all meetings of the Awards Committee as an observer and coordinator.

Further Information

The full text of the IGS Awards rules can be obtained by contacting the IGS Secretary (see p19 for address).

*submitted by R.J. Bathurst
Vice President of the IGS*

IGS News Recognizes IGS Award winners

At its recent meeting held in Beaune, France, the IGS Council agreed that more exposure of the IGS Awards program was warranted in order to attract as many high calibre submissions as possible for the forthcoming awards (see previous article).

One way to achieve this aim is to inform the IGS membership of the achievements of past winners. Each of the IGS Award winners was honored at the Fifth International Conference in Singapore in September 1994. Each winner has been invited to submit a two-page article to IGS News that is focused on any part of the body of work described in their award citation. The award winners and their citations can be

found in Vol. 10 No. 3 of IGS News (November 1994, pp. 9-10).

It is with great pleasure that Dr. R. M. Koerner has accepted this invitation. However, the terms of reference for the article are difficult to apply in the case of Dr. Koerner because of his large number of technical contributions to the geosynthetics disciplines. Rather, Dr. Koerner was given the option to use this opportunity to address any issue of importance to the IGS and the geosynthetics community. Dr. Koerner's article can be found below.

*reported by R.J. Bathurst
Vice President of the IGS*

Some Reflections on the Practice of Geosynthetic Design **By Robert M. Koerner, Ph.D., P.E.** **(1994 Recipient of IGS Award for Design Achievement)**

From a personal perspective, it appears as though the practice of designing with geosynthetics is nicely following that of other engineering materials. This essentially utilizes a design-by-function concept whereby a designer assesses the problem at hand and then makes a conscious decision as to the primary function that the material will be called upon to serve. In a strength of materials context, this is usually a particular state of stress, e.g., tension, compression, bending, shear, torsion, etc. In a geosynthetics context, it is usually having the material serve in separation, reinforcement, filtration, drainage or as a barrier. From this point, the concept of factor-of-safety (FS) is usually formulated whereby:

Factor-of-Safety = allowable property / required property

The allowable property in the above equation should come from a laboratory test configured to simulate the primary function as closely as possible. Such tests are usually called performance tests. Standards organizations around the world are actively pursuing such standards. Needed in this regard is a group to collect, monitor, compare and contrast these standards to one another so as to advance geosynthetics testing in a logical and integrated manner.

The required property in the above equation comes from a design model appropriate for the problem and function under consideration. These models are usually an adapted form of geotechnical, hydraulics, structural or environmental engineering problems and situations. Obviously the model has to be modified for the inclusion of the geosynthetics material being considered, but this is generally a reasonable extension. In this regard, however, there is the need for the consideration of viscoelasticity to be more elegantly included in many de-

sign solutions. Rarely is time dependency considered in our models. Through a reduced modulus, or in finite element modeling, we can begin to address more realistic design models but this is not felt to be the routine situation. There are also some problems in need of more sophisticated design models than currently exists, e.g., flexible forms, erosion control, reflective crack prevention, etc.

Lastly, with respect to the above formula, the designer must address the minimum acceptable numeric value of the resulting factor-of-safety. Clearly, the extremes are critical/permanent situations vis-a-vis noncritical/temporary situations. But specifically what numeric value of the above extremes (or any one of the multitude of intermediate situations) is acceptable, is up to the site specific situation and the experience of the designer. The use of partial factors-of-safety is interesting in this regard. Current practice is to modify some part of the above equation (usually the laboratory obtained property) for nonmeasured or nondefinable details. Examples are sustained load creep, polymer degradation, long-term clogging, etc. This practice will undoubtedly continue due to the impracticality of complete simulation of the anticipated field situation in the laboratory test.

In summary, when the above methodology is practiced carefully we can certainly "design with confidence". Two decades of geosynthetic related systems built to date, with only a very few failures, attest to the fact that we are headed in the right direction.

The problem, from the writer's perspective, is that relatively few design professionals are cognizant of the idiosyncrasies and nuances of the above described methodology.

Proper test methods, appropriate design models and an engineering-feeling so as to assess the final factor-of-safety value are limited to an inner circle of individuals who are actively involved with geosynthetics technology. One might say "good for this group", but I submit that this is somewhat narrow thinking for the greater good of progress in geosynthetics. Geosynthetics cannot begin to reach its full potential until all engineering designers understand the many details of the issues involved. Clearly, a massive education effort is warranted. Lack of education is the greatest obstacle toward growth that we have. For example, there are approximately six hundred civil engineering degree offering colleges and universities in the United States. Of these, only fifteen give a course in geosynthetics. While there is no way of knowing how many faculty present some aspect of geosynthetics in standard courses such as geotechnical, hydraulics, transportation or environmental engineering, the number is probably quite small. Thus every year thousands of engineers graduate with no (or extremely limited) exposure to geosynthetics. This situation must end - but how? A few bright signs and a few suggestions follow.

The bright signs are the ongoing "Educate-the-Educators" activity sponsored by the corporate members of Industrial Fabrics Association International and others (recall the last edition of IGS News) and the newly announced effort of the IGS Education Committee under the leadership of Professor Holtz of the University of Washington. Both efforts are applauded and should be encouraged.

A few suggestions have to do with ongoing professional courses and a concept called "distance learning". The professional course concept has been quite successful for NAGS

and a set of eight-hour long courses accompany each of its biennial conferences. Other national chapters of IGS should consider this venue in planning their national or regional conferences. A traveling "road show" of such courses could also be considered. In the concept of distance learning, one has the ultimate vehicle in reaching professionals who cannot come to conferences or courses in other countries or locations. One variation of the concept is to put geosynthetics on video cassettes for viewing on household television sets. Many manufacturers have presented their materials and associated applications using this approach, but they are usually quite short (ten to thirty minutes) and obviously focused toward their particular products. This idea can be generic/introductory (an example is the current IGS/ASCE series on environment and transportation applications) or generic/advanced. In the latter category, complete design courses can be put on a series of cassettes for viewing over a long period of time. Indeed, complete graduate degree programs in engineering and science are currently available in this mode of presentation. The National Technical University in Fort Collins, Colorado, USA, has a bevy of such courses and programs. Other universities are experimenting with the concept. While such self-learning requires a motivated individual, it is possible and has the potential of reaching a wide and dispersed audience. Typically, this audience does not have available, or has not taken advantage of, the traditional route of personally attending conferences and seminars in the past.

In closing, I echo the words and thoughts of many others: that the key toward long-term implementation and success of geosynthetics is in education. In this regard everyone is a professor and should be part of such an open university to teach and share the knowledge that we possess.

Professor Fumio Tatsuoka to Give Mercer Lecture for 1996 - 1997

The Mercer Lecture is a prestigious honor awarded to individuals who have made outstanding technical contributions to the advancement of geosynthetics. Previous Mercer Lectures have been given by Dr. Robert Koerner and Dr. J-P. Gourc.

The Mercer Lecture was established under the co-sponsorship of the International Society for Soil Mechanics and Foundation Engineering, the IGS and Netlon Limited in the UK. The project is funded by Netlon Limited which underwrites the cost of sending the speaker to venues in Europe, Asia and North America.

Based on a ballot by representatives of the sponsoring organizations, Professor Fumio Tatsuoka of the University of Tokyo was invited to give the 1996-97 Mercer Lecture. Professor Tatsuoka has accepted this invitation. His lecture

will be titled "Geosynthetic-Reinforced Soil Retaining Walls as Important Permanent Structures".

At the time of this article not all of the venues for the Mercer Lecture have been finalized. These will be publicized in IGS News as they become known. The Mercer Lecture is tentatively scheduled for EuroGeo1 - the First European Conference on Geosynthetics - to be held under the auspices of the IGS in the city of Maastricht in The Netherlands, from 30 Sep until 2 Oct 1996.

The IGS wishes to congratulate Professor Tatsuoka on this prestigious honor.

*reported by R.J. Bathurst
Vice President of the IGS*

Minutes of the Meeting of the IGS European Activities Committee (EAC) 3 May 1995; Europlaza Hotel, Luxembourg

The meeting was called to order by Dr. G. Heerten, Chairman IGS EAC.

Those present were:

- Dr. G. Heerten, Chairman IGS EAC and representing Germany;
- Mr. C. Lawson, representing IGS, and EAC meeting Secretary;
- Mr. P. Mazure, representing Netherlands;
- Mr. J. Paul, representing the United Kingdom;
- Mr. D. Cazzuffi, representing Italy;
- Dr. P. Fantini, supporting Mr. D. Cazzuffi;
- Mr. P. Rimoldi, supporting Mr. D. Cazzuffi;
- Dr. J.-P. Gourc, representing France;
- Mr. P. Delmas, supporting Dr. J.-P. Gourc;
- Mr. H. Rathmayer, representing Finland, Sweden and Norway;
- Dr. A. Bolt, representing Poland;
- Mr. E. De Leeuw, representing EuroGeo1;
- Mr. H. Jas, representing EuroGeo1;
- Mr. G. den Hoedt, representing EuroGeo1.

1. IGS EAC operation items.

The Chairman noted that to conform to the rules of establishment of the IGS EAC each European IGS Chapter could have only one formal representative (with voting rights) at the meeting; however, other members were welcome to attend as supporting members. The IGS EAC Secretary has no voting rights.

The Chairman also made known his wish to extend IGS EAC membership to other European countries who do not presently have a formal participant on the EAC. With regard to this, Dr. A. Bolt, representing Poland in place of Professor Dembicki, was particularly welcome. One option might be for existing participants of EAC to obtain a mandate to represent more than one Chapter or country as Mr. Rathmayer has done in Scandinavia.

2. Progress of EuroGeo1

The major item for discussion was the proposed First European Conference on Geosynthetics "EuroGeo1" to be held in Maastricht, The Netherlands from 30 Sep to 2 Oct 1996. The points that follow represent the major items covered by the three EuroGeo1 committee members present at the EAC meeting - Mr. E. De Leeuw, Chairman EuroGeo1; Mr. H. Jas; and Mr. G. den Hoedt. The major items arising from the resulting discussion are also included below.

(a) Duration:

Conference to run Monday to Wednesday, 30 Sep to 2 Oct 1996. The RILEM conference on reflective cracking to fol-

low on Thursday and Friday, 3 and 4 Oct 1996.

(b) Conference Goals:

- To be different from previous geosynthetics conferences.
- To attract a large proportion of newcomers to the geosynthetics field - a goal is to attract 50% newcomers.
- Not to be a high level scientific affair but to cover topics of practical importance.
- It is to be a European conference with the European Chapters supplying input in the form of conference topics, etc.

(c) Conference Format:

- Duration of three days with three keynote themes - hydraulics; environment; foundations, slopes and pavements.
- At this stage it is planned to provide simultaneous translation into English, French and German for keynote lectures only. The level of translation for other sessions is still to be determined.
- Keynote lecturers' presentation materials to be vetted beforehand to ensure consistency of quality.
- Parallel sessions of workshops, plus poster sessions.
- European Chapters to provide subjects for discussions - some have already done so.
- Exhibition concurrent with conference.
- Variety of other activities - still to be finalized.

(d) Conference Management

Conference to be managed by HOC, a professional conference organizer - the same organization that managed the 4th IGC in The Hague in 1990.

(e) Budget Basics

- Budget based on approximately three hundred full time participants plus three hundred single day participants.
- At this stage an approximate registration fee of Dfl 950 for full time and Dfl 500 for single day participation.
- Magnitude of discounts for IGS members still to be determined.

(f) Exhibition

- Approximately 1250 m² of exhibition space to be made available in conference venue.
- Preference to be given to corporate members.
- Lunch and coffee breaks to be served in exhibition area.

(g) Relationship of IGS Chapters to EuroGeo1

It was stressed that this conference belongs to all of the European IGS Chapters even though the conference itself is to be held in The Netherlands. Consequently, the various Chapters would have a considerable input into the content of the con-

ference. In return, it was to be expected that the various Chapters would offer full support for the conference and participate in the promotional activities.

(h) Marketing of EuroGeo1

Assistance in the marketing of the conference was requested from the European IGS Chapters, the corporate members and the IGS. There was considerable discussion on how best to market the conference. Bulletin 1 was to be distributed to all Chapters, ISSMFE members and IGS members. However, European Chapters were requested to develop their own methods of promotion, e.g. assisted travel for some participants. In order to achieve a high level of new attendees it was recognized that a wider focus would be required.

(i) EuroGeo1

- Bulletin 1 was published at the beginning of May 1995.
- Bulletin 2 is due to be published in February 1996.

Finally after long discussion, the Chairman thanked Mr. E. De Leeuw, Chairman EuroGeo1; Mr. H. Jas; and Mr. G. den Hoedt for the work that the EuroGeo1 committee had carried out to date and looked forward to a successful conference. He also stressed the importance of the support to be given by the European Chapters to this conference.

3. EuroGeo2 in the Year 2000

The chairman noted that it was the role of the IGS-EAC to determine the venue and timing of EuroGeo2. The European IGS Chapters were requested to consider this. The Chairman would write to the European Chapters concerning the procedure to be adopted for the submission of proposals to host EuroGeo2. It will be necessary to announce the location and timing of EuroGeo2 at EuroGeo1 in 1996.

4. ISO TC21

There has been a request from the ISO Secretary to hold the next meeting of ISO TC21 on geotextiles in Maastricht to coincide with EuroGeo1. Since a RILEM conference was planned for the two days following the conference, the Chairman would advise the ISO Secretary that the Friday before the conference would be a suitable date.

5. IGS Council meeting at EuroGeo1

The Chairman noted that the IGS would hold a Council meeting to coincide with EuroGeo1. To maintain the format of the IGS Council meetings it was envisaged that the IGS officers would meet on the Friday before the conference while the IGS Council would meet on the Saturday and Sunday before the conference.

6. Next International Conference SMFE, Hamburg, 1997

The Chairman requested that the European Chapters help support the next International Conference on Soil Mechanics and Foundation Engineering to be held in Hamburg in 1997.

7. Promotion of European Chapter events

The Secretary made the point that the IGS-EAC could be an ideal means of disseminating information on local Chapter events. These events may be of interest to other Chapter members in other European countries.

The chairman closed the meeting and thanked all for attending. In particular the Dutch EuroGeo1 committee members were thanked for their professional presentation of the progress made on the EuroGeo1 conference.

*contributed by C. Lawson
IGS Council Member and EAC Secretary*

EuroGeo1 on Stream!

Preparations for EuroGeo1 are proceeding very well. This major European geosynthetics conference promises to deliver an excellent venue of topics on geosynthetics. The focus of the conference, applications of geosynthetics, will be particularly useful to practitioners. EuroGeo1 will be held 30 Sep to - 2 Oct 1996, in Maastricht. Details are listed in the Calendar on p18.

Bulletin 1, the Call for Contributions, yielded approximately 140 proposals, quite satisfactorily spread over the different activities including case studies, workshops, short courses and posters. The distribution over different themes was comparable, although Walls, (Rail)Roads & Embankments, Landfill Liners & Covers, Erosion Control/Bank Protection & Dams, Filtration & Damage were much more crowded than Monitoring. Three-fourths of the contributions were received after the deadline of 1 October, so don't feel embarrassed for sending in your discussion statements until 1 February.

The program organizers continue to welcome controversial statements for the discussion sessions. These will be accepted until 1 Feb 1996. The number of proposals for demonstrations was also remarkably low.

At the time of writing (end of October) the selection of the submitted contributions by the Technical Committee is going well. The result will be published in Bulletin 2 as the provisional program of EuroGeo1. Furthermore, the authors will be notified of their acceptance or rejection by the end of December.

The mailing for the Exhibition was recently completed. The 2500 m² exhibition room is expected to become the center of EuroGeo1, since it will host luncheons, coffee/tea breaks, demonstrations and perhaps hold posters as well as the Exhibition.

The exhibition is continued on Thursday, 3 Oct 1996, during the Third RILEM Conference on Reflective Cracking.

WHAT DO WE EXPECT FROM YOU?

If you will be attending EuroGeo1 yourself, please try and convince one of your customers that EuroGeo1 is a must for improving their geosynthetics expertise. Please remember, we are aiming for the 50% that have never attended a Geosynthetics Conference, especially designers, contractors, and project owners. We are organizing a highly practical and educational conference.

If you are unable to attend EuroGeo1 - sorry, your loss. You might convince two of your colleagues to replace you and bring home information that you would have brought yourself.

However, if you are unable to attend EuroGeo1 because of financial problems, then convince ten other people to attend, and you will have earned your own ticket to attend, free of charge.

Bulletin 2, forthcoming, will bear the IGS logo. The Organizing Committee apologizes sincerely for simply not having thought about the logo until after Bulletin 1 was presented to the European Activities Committee in Luxembourg last May (see related article on p9).

Finally, please read Bulletin 2 very carefully. Come and join your European friends in Maastricht.

*contributed by G. den Hoedt
Secretary General of EuroGeo1*

Third Edition, IGS Mathematical and Graphical Symbols

The third edition of the very popular IGS Mathematical and Graphical Symbols booklet will be available to IGS members in December 1995.

The third edition has been expanded to include definitions of geosynthetics functions and fundamental geosynthetics terminology, hence the change in the booklet title. In addition, certain mathematical symbols have been modified and others included to reflect the growing areas of

technology where geosynthetics are utilized. Additional graphical symbols have also been included.

Those wishing to obtain copies of this booklet should contact the IGS Secretary, whose address is on p19 of this issue.

*contributed by C. Lawson
Co-chair of the IGS Technical Committee*

Policy on the Preparation of the IGS Directory

The IGS Directory is published annually on the first of January. The Directory contains detailed information about the Society and its membership. Most important is the current addresses of the membership, both individual and corporate. This information is derived from a data base that contains the membership record and address for each member. This file is created from information supplied to the IGS by the member or his/her chapter.

Additions, such as new members, as well as revisions and corrections of the database are essential to insure the Directory is accurate and includes all of the membership.

The need for timely accuracy is lent great emphasis because the same data base generates the mailing lists for the IGS News, postal ballots and any other direct communication between the Society and its members.

The database is revised or corrected four times per year. After the publication of the Directory in January, information begins to be gathered and processed again. This process stops in mid-March with the preparation of the mailing list for the spring issue of the IGS News. Corrections begin again immediately and stop with the June production of the mailing

list for the summer issue of the IGS News. The program resumes and proceeds to the fall issue of the IGS News.

The final editing period closes on 1 November when preparations for printing the next Directory begin. New memberships or address changes received over the winter are included by the following March.

Accurate membership records, correct mail and email addresses, telephone and fax numbers are important to the membership. It is very important that the Directory be accurate so that members receive the IGS News and correspondence in a timely fashion.

Chapters, corporate and individual members can assist the IGS in maintaining accurate information by periodic review of their IGS records and prompt communication with the IGS Secretary when corrections and additions to the IGS database must be made.

*contributed by P.E. Stevenson
IGS Secretary*

North American Geosynthetics Society Chapter Report

Membership levels for the past five years are:

- 1991 - 402
- 1992 - 361
- 1993 - 501
- 1994 - 432
- Current 1995 - 584

Student members are an important part of the NAGS organization. The current number of student members is 79 from 7 universities.

Activities:

Geosynthetics '95 - Our biannual conference, which is cosponsored by the Industrial Fabrics Association International (IFAI), was held 21-23 Feb 1995 in Nashville, Tennessee, USA. With 1673 attendees and 99 exhibitor booths, this year's conference represented the largest geosynthetics conference held. An international assembly of authors presented 90 papers on state-of-the-practice uses and state-of-the-art developments in geosynthetics. Sessions were held in the technical areas of: Walls, Slopes and Embankments; Filtration; Roads and Railroads; Foundations and Commercial Development; Technical Advances and Innovations; Waste and Liquid Containment; Landfill Design; Geosynthetics Durability; and Geosynthetics Testing. Special sessions were held for presentation of outstanding student papers and for a panel discussion on Geosynthetic Durability. Additional details about the conference and special sessions were published in the March 1995 edition of the IGS News.

Geosynthetics '97 - The next NAGS conference will be held 11-13 Mar 1997 at the Long Beach Convention Center, Long Beach, California. The format of this conference will be changed to accommodate the Sixth International Conference. Special emphasis will be given to specific themes including: high strength reinforcement; durability; mining; remediation and containment; seismic design and construction; pavement systems; erosion control; and the economic considerations in life-cycle cost/benefit analysis. Invited papers along with the call for papers will be used to support each of these themes. A contractors' program will also be developed.

Sixth International Conference on Geosynthetics - Preparation for the 6th International Conference is well under way. R. Koerner heads the organizing committee, composed of J. Beech, J. Dieltz, J.P. Giroud, and K. Rowe. The conference is scheduled to be held 25-29 Mar 1998 at the Inforum in Atlanta, Georgia. The conference venue overlooks the Centennial Park that is being constructed for the Olympic Games. A draft schedule for promotion has been prepared. The initial announcement for the conference is scheduled to be released in early Fall 1995.

Geofilters '96 - NAGS has offered their support as a cooperating organization for the Second International Conference on Filtration and Drainage to be held in May

1996 in Montreal.

Award of Excellence - Authors of five papers at Geosynthetics '95 were recognized for their innovation, creativity and outstanding contributions in the development of geosynthetics through the NAGS Award of Excellence Program. Award categories include Environmental Technology, Research and Development, State-of-Practice Technology, Geotechnical Engineering Technology and a Grand Award. In addition to a plaque, a grant of US\$10,000 will be given to a research institute of the author's choice for geosynthetics research. The grants are sponsored by contributions from leading geosynthetics manufacturers, distributors, engineering firms, related organizations and individuals. For a list of the award recipients, see the March 1995 edition of the IGS News.

Student Awards Program - A new awards program was developed for Geosynthetics '95 to recognize and to promote student participation in NAGS conference activities. For the student awards program, full time graduate students enrolled in North American universities were invited to submit original papers to the Organizing Committee of Geosynthetics '95. Judges of the papers were from the academic community with the exclusion of professors from schools submitting papers. NAGS and IFAI funded an expenses paid trip for one author of each of the top six papers for presentation and final judging (partially based on presentation) at the Geosynthetics '95 conference. Two papers were selected for the final award and received a US\$500 cash prize. The award recipients and additional details are included in the March 1995 edition of the IGS News.

Educate the Educators - NAGS continues to use their IGS rebate to sponsor the Educate the Educators training program. The second annual program was successfully held at Auburn University Conference center from 31 Jul through 4 Aug 1995. This program was started last year by the Geotextile Division of the Industrial Fabrics Association International, the primary sponsor. Other sponsors include the United States Environmental Protection Agency, the United States Federal Highway Administration, the Geomembrane Division of IFAI, Erosion Control Technology Committee (ECTC), and PVC Geomembranes Institute (PGI). Lecturers during the program were Mr. Jerry DiMaggio, FHWA; Dr. Robert Holtz, University of Washington; Dr. Shobha Bhatia, Syracuse University; Dr. David Elton, Auburn University; Mr. Ryan Berg, R. Berg Consultants; and Dr. Robert M. Koerner, Drexel University and GRI. Twenty-one professors from major universities across the USA and Canada were in attendance at this year's all-expense paid geosynthetics training session. As compared to last year's attendees, the group selected for this year's session had a better background in geosynthetics. The attendees' response was excellent with strong commitments made to use the materials provided to augment their current course work and introduce new geosynthetics course material.

Past Presidents Program - This program was established by NAGS to help us do more for the society's members and grow the organization. The past presidents are currently working on a seminar program to be taught regionally by past presidents.

Publications:

Case Studies Book - Publication of the North American case studies book is still in progress and anticipated early in 1996 (contact Richard Bathurst for more details, p19).

Guidelines for Preparing Geomembrane Specifications - NAGS technical committee has developed a guideline for

preparing polyethylene geomembrane specifications. Publication and circulation are pending final review by the NAGS board.

Geosynthetics '95 Proceedings - This 2-volume set contains the 99 technical reviewed papers from the conference. IFAI is the publisher.

NAGS NEWS - NAGS publishes a one page news column in each issue of the Geotechnical Fabrics Report, published by the Industrial Fabrics Association International.

*contributed by B. Christopher
President, NAGS*

International Conference on Hydraulic Applications of Geosynthetics

GEOFILTERS '96 will bring together geotechnical and geosynthetic engineers, to address new developments and advances in all areas of filtration and drainage, involving natural or synthetic materials. The three day International Conference, supported by the IGS, will be held 29-31 May 1996 at the Radisson Gouverneurs Hotel in Montreal. This meeting will cover many aspects of the action of groundwater on engineering works. The participants will be brought up to date on the latest research and development as applied to environment protection, dam engineering and transportation infrastructures. More than 60 papers will be presented in technical sessions on Criteria and Design, Theoretical Developments, Long-Term Performance, Geosynthetic Testing, Compatibility Testing, Drainage and Applications. They cover natural and geosynthetic filters equally. Emphasis is put on case histories. The following partial list of paper titles highlights the diversity of the covered topics:

- Design Criteria for Geocomposites Used as Road-Edge Drains
- Bacterial Clogging of Geotextiles
- Corps of Engineers Guide Specification for Use of Geotextiles as Filters
- Hydrodynamic Sieving Tests on Geotextiles Subjected to Tensile Stresses
- A New Test Apparatus for the Study of Geotextile Behavior as Filters in Unsteady Flow Conditions
- Scattering of the Composition of Soils - An Aspect for the Stability of Granular Filters
- Effect of Mass per Unit Area on Hydraulic Properties of Nonwoven Needle Punched Geotextiles
- Self-Filtration Behavior of Broadly and Gap Graded Cohesionless Soils
- Control Tests of the Drainage of the Tailings Dam after 15 Years of Operation
- Coastal Scour Stabilization Using Granular Filters in Geosynthetic Nonwoven Containers
- Case History: Geosynthetic Drainage System Provides Drainage in Dredged Material at Spectacle Island
- Comparative Performance of Aggregate vs Geotextile

Filter in the Laboratory

- Evaluation of Geotextile Filter Behavior Using the Gradient Ratio Test
- Experiences, Lessons Learned and Evaluation of Results of Hydraulic Conductivity Ratio Testing of Three Fine Grained Soils and Five Geotextiles
- Effect of Confining Pressure on Filtration Behavior of Geotextiles
- Silt Fence Testing for Filtration of Contaminated Suspension
- Modelling Frost Heave of Roads with Geosynthetics

The program will include a special lecture by Dr. J.P. Giroud titled "The Similarities and Differences Between Natural and Geosynthetics Filters".

A preconference short course titled "The Use of Geosynthetics in Erosion Control" will be given by Andre Rollin, Jean Lafleur, Jacek Mlynarek and Daniele Cazzuffi. In addition, commercial booths will be available for manufacturers, installers and suppliers of professional services. Finally, there will be an opportunity to visit the James Bay Complex during a one day Post-Conference tour. Additional information may be obtained from:

Bureau des Congres - Ecole Polytechnique de Montreal
C.P. 6079 Succ. Centre-Ville
Montreal QC H3C 3A7 CANADA
Tel.: (514)340-3215
Fax: (514)340-4440
email: bureau.congres@mailsrv.polymtl.ca

or from
Jean Lafleur, Dept. of Civil Engineering - Ecole Polytechnique
Tel.: (514)340-4792
Fax: (514)340-5841
email: jlafleur@mailsrv.polymtl.ca

LEHRSTUHL UND PRÜFAMT FÜR GRUNDBAU,
BODENMECHANIK UND FELSMECHANIK
reported by IGS Member, J. Lafleur

Technische Universität München

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, Vol. 4, 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.

Geofabrics **Liversedge, W. Yorkshire, United Kingdom** **by B. Warwick, Company Director**

Geofabrics is one of the UK's leading manufacturers of geotextiles. Their comprehensive range of products is used principally to provide geomembrane protection in landfill sites and filters for river and coastal protection.

All products are designed and manufactured at Geofabrics' own premises, which are equipped with some of the most modern computer-controlled plants in Europe. Geofabrics is concerned with incorporating cost-efficient principles in product design. Geofabrics' plants give the company the ability to manufacture geotextiles with an increased width. This results in less overlap on site because fewer geotextile strips are laid, leading to substantial cost-saving on an overall project.

Geofabrics "Protectors" established a reputation for themselves particularly when used to protect geomembranes in landfill sites. Geofabrics also manufactures a comprehensive range of geotextiles for filters which are used in the construction of river and coastal defenses. They provide excellent filtering efficiency as well as a high level of absorption to mechanical stresses and abrasion resistance.

Company Director, Bob Warwick, began working with geotextiles in 1976 when at ICI and has experience as a contractor building motorways, roads, bridges, dockworks, airfields and industrial developments. He was a founding member of the UK Chapter of the IGS and has represented the UK on ISO committees developing geotextile testing methods.

Case Histories.

Site: Chyandour to Long Rock Coast Protection Scheme, Penzance, Cornwall, UK.

This revetment has been installed to protect the eastern part of Penzance. The construction included the use of over 14,000 m² of Geofabrics GF60, a 600 g/m² nonwoven needlepunched geotextile with a high permeability and puncture resistance. The geotextile was used as a filter layer under approximately 0.5 m thickness of corestone topped with 8-12 tonnes primary armor. Figure 1 shows construction of the project.

Site: Halliloo Valley Golf Course, Woldingham, Surrey, UK.

At Halliloo Valley, a new golf course under construction has three underground reservoirs which collect water from the golf course's drainage system. The sloping sides of the reservoirs are constructed of mass concrete, and in order to protect the reservoirs' geomembrane liners, 3,000 m² of Geofabrics Protector GP50 had been installed between the geomembrane liner and the concrete. Geofabrics GP50 is a 4mm thick needlepunched nonwoven geotextile of 500 g/m². It is specially formulated to have a very high puncture resistance. Figure 2 shows construction of the project.

Geofabrics became a Corporate Member in 1995.

a few nice pictures from their case histories, to be added a little later

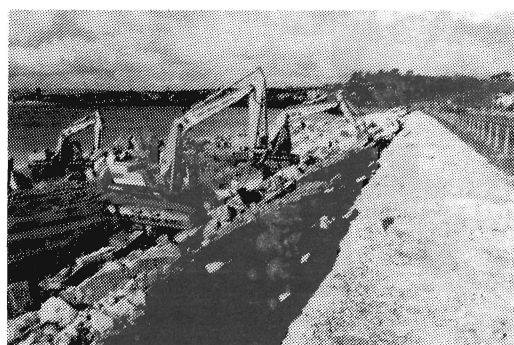


Figure 1. Chyandour to Long Rock Coast

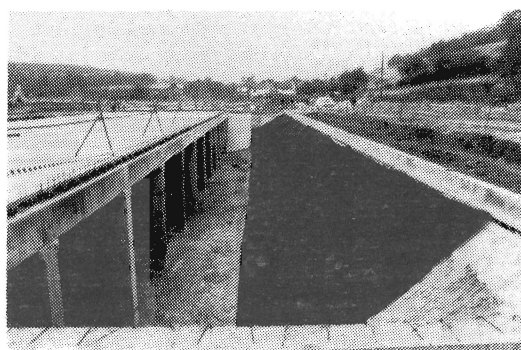


Figure 2. Halliloo Valley Golf Course

Landfill Liner Systems - A State of the Art Report Available

A report on landfill liner systems has been compiled by BAM (Federal Institute for Materials Testing), Berlin, and translated from the original German into English. The report was edited by the Solid and Hazardous Waste Research Unit (SHWRU), University of Newcastle upon Tyne.

In the compilation of the report, comprising over three hundred pages, in excess of one thousand papers of international origin were reviewed. Topics covered include chapters on each of the components collectively comprising landfill liner and capping systems, including drainage and collection systems, geomembranes and geomembrane protection layers, clay and asphalt liners and cut-off walls. Chemical and physical processes (for example, pollutant transport mechanisms, hydraulic permeability of clay liners, moisture balance and mechanical loading) are discussed as well as construction and quality assurance methods and practice.

This comprehensive volume, published in hardback as a limited edition, is available from SHWRU at the price of £47.50 Sterling plus mailing and packing (UK £4.75, Europe £5.75, USA £11.50 and other countries £13.50). Checks should be made payable to "The University of Newcastle upon Tyne" and the order should be sent to:

D.M. Anderson, Research Manager
Solid and Hazardous Waste Research Unit
Department of Civil Engineering
Drummond Building
University of Newcastle upon Tyne
Tyne and Wear
NE1 7RU
UNITED KINGDOM

Tel.: 44 (0191) 222-5099, Fax: 44 (0191) 222-6613
email: D.M.Anderson@newcastle.ac.uk

Sardinia 95 - International Landfill Symposium a Success!

The 5th International Landfill Symposium (Sardinia 95), held in S. Margherita di Pula, Sardinia, Italy, demonstrated again that this is the premier technical conference dealing with landfilling and related aspects of waste disposal. The conference was attended by over 940 delegates from 38 different countries. The conference proceedings consisted of three volumes with some 250 papers and over 2600 pages and will prove to be a valuable resource for all those working in the field. The price of the proceedings is 700,000 ITL + 19% VAT.

The conference had some 20 oral presentation sessions dealing with issues such as barrier concepts and mineral liners, new landfill concepts, geosynthetic liners and drainage systems, landfill processes, barrier performance and top covers for landfills, leachate management, legislation and administration, processes and emissions, waste mechanics, industrial landfills, biogas, combustion residues, landfill mining, landfill operation, emissions and environmental impact, pre-treatment of MSW, and aftercare and remediation. In addition, there were a number of poster presentations and 10 workshops. Two of the workshops were organized in collaboration with the IGS. The workshop on "Testing of Geosynthetic Materials for Landfill Liners and Covers" was chaired by Dr. J.P. Giroud and the workshop "Geosynthetic Clay Liners" was chaired by Dr. R. Kerry Rowe. A report on the discussions in these workshops will be published in the March 1996 issue of IGS News.

Papers presented at the conference (and contained in the conference proceedings) contain a wealth of valuable information relating to design, construction and performance of landfills. Examples of papers that are likely to be of particular

interest deal with topics such as self-forming and self-repairing seals, safety analysis of composite liner systems, design and performance considerations for geosynthetics used in landfills, the long term behavior and residual emission potential of landfills, the degradability of organic chemicals in landfills, the durability of geomembranes, the design of leachate collection systems, evaluation of water balance methods for calculating infiltration through landfills and leachate generation, the design, performance and relative advantages and disadvantages of different cover systems, the stability of landfills, the hydrogeological and geotechnical properties of refuse, gas management, the use of radioisotopes for the detection of landfill gas effects on groundwater, the closure of landfills and future land use, to name but a few of the many topics covered at the symposium.

The conference was held in an atmosphere which encouraged interaction and discussion (some of which was quite lively!). As in past years, there was an excellent series of social events and the conference was followed by two one-day technical tours to landfill sites in Sardinia. The conference Chairmen, Raffaello Cossu, Thomas Christensen and Rainer Stegmann, the Editors of the proceedings, G. Montresori and G.M. Motzo and the General Secretary, Anne Farmer, are to be congratulated on their excellent organization and for the outstanding success of the conference. The conference proceedings can be obtained from CISA - Environmental Sanitary Engineering Centre, Cagliari, Via Marengo 34, 09123 Cagliari, Italy.

*contributed by R. K. Rowe
Immediate Past President, IGS*

Publisher's Report: Geotextiles and Geomembranes an Official Journal of the IGS

During 1993, the international journal Geotextiles and Geomembranes decided to increase its frequency from eight issues a year to monthly for the 1994 volume. This ambitious change in frequency was in response to a sustained increase in the number of manuscripts submitted for publication in the journal. The journal succeeded in meeting this schedule for 1994 but now needs to respond to an increase in number of competing journals and conferences; as a result there is now a much wider variety of publishing avenues for geosynthetic research papers. We have therefore taken the decision to carry the 1995 volume of the journal over to 1996.

Subscribers to the 1995 volume have paid for and will receive twelve issues of the journal. These issues will not all be published during 1995, but will span the two years 1995 and 1996. In view of the reduced paper flow, the 1997 volume is likely to revert to the lower frequency of six issues.

At the time of preparing this report, over thirty manuscripts are under peer review. We are also planning to publish several special issues including one on 'Geosynthetics in Infrastructure Enhancements and Remediation' (from a leading conference to be held in Philadelphia, PA, USA, 12-13 Dec 1995. Contact Dr. R. M. Koerner at Drexel University, for conference details).

The journal continues to publish frontier research in the field and has an established subscriber base in over forty countries worldwide. As Geotextiles and Geomembranes is an official journal of the IGS, members of the society are eligible to subscribe to this publication at a greatly reduced rate, as shown below.

We can assure IGS members of our commitment to publishing the premier international research papers in the jour-

nal Geotextiles and Geomembranes.

The full subscription rate for volume 14 is £330UK or US\$10. Members of the IGS may subscribe at an 80% discount, i.e. £66UK or US\$102. Corporate members of the IGS may subscribe at a 50% discount, i.e. £165 or \$255. Reduced subscriptions are available directly from the publisher and may be paid for by cheque or credit card. Please write to:

Subscriptions Department
Elsevier Science Ltd.
The Boulevard, Langford Lane, Kidlington
Oxford OX5 1GB U.K.
Fax: 44(0) 865 843911

Members are reminded that to take advantage of this discount they must inform Elsevier Science Ltd. that they are a member of the IGS. IGS members are encouraged to use Geotextiles and Geomembranes as an outlet for their technical papers and thus contribute toward the continuing success of this high quality publication which now has subscribers in over 40 countries worldwide. Papers should contain work not published in full elsewhere and should be sent to:

Dr. Nigel W.M. John
Department of Civil Engineering
Queen Mary & Westfield College
University of London
Mile End Road London, E1 4NS United Kingdom

Instructions to authors are also available from Dr. Nigel John.

*contributed by J. Milne
Publishing Editor, Elsevier Science Ltd.*

Geosynthetics International an Official Journal of the IGS

Geosynthetics International is an official journal of the IGS. Consequently, each issue of Geosynthetics International is published with the IGS logo on the cover.

In recognition of the adoption of Geosynthetics International by the IGS, the Industrial Fabrics Association International, publisher of Geosynthetics International, has introduced a special reduced subscription rate for individual IGS members. For individual IGS Members the rate is now US\$99 per six issues with the standard rate of US\$225 applying to non-IGS Members, IGS Corporate Members and other corporations or institutions. IGS members are encouraged to use Geosynthetics International as an outlet for their technical papers and thus contribute toward the continuing success of this high quality publication. Papers should contain work not published in full elsewhere and should be sent to any of the following:

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Fax: 1 (612) 222-8215

Geosynthetics International: Contents of Recent Issues

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- Graphical Solutions for Determining Geosynthetic Tension in Cover Systems, J.H. Long (USA)
- The Single Point-Notched Constant Tension Load Test: A Quality Control Test for Assessing Stress Crack Resistance, Y.G. Hsuan & R.M. Koerner (USA)
- Pseudo-Static Seismic Analysis of Geosynthetic Reinforced Segmental Retaining Walls, R.J. Bathurst & Z. Cai (Canada)
- Unified Design Approach to Geosynthetic Reinforced Slopes and Segmental Walls, D. Leshchinsky, H. Ling & G. Hanks (USA)
- The Use of Geosynthetic Capillary Barriers to Reduce Moisture Migration in Soils, K.S. Henry (USA)
- Compatibility of Geosynthetic Clay Liners with Three Pennsylvania Municipal Solid Waste Leachates, D.B. Narejo (USA)

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- Geosynthetic-Reinforced Soils under Repeated Loading: A Review and Comparative Design Study, A.K. Ashmawy & P.L. Bourdeau (USA)
- Pullout Interaction Mechanism of Geogrid Strip Reinforcement, M.C. Alfaro, S. Hayashi, N. Miura & K. Watanabe (Japan)
- A Comparison of Puncture Behavior of Smooth and Textured HDPE Geomembranes, D.B. Narejo (USA)
- Calculation of Coupled Stress and Seepage for Dams with a Geotextile/Geomembrane Composite Liner, T. Tao, D.F. Li & J. Yan (China)

- An Integrated Approach to Evaluating Single-Layer Reinforced Soils, R.D. Espinoza & J.D. Bray (USA)
- Subgrade Stabilization with Geotextiles, C.R. Lawson (United Kingdom)
- Three Levels of Geomembrane Puncture Protection, D.B. Narejo (USA)
- Discussion: Modelling of Geosynthetic-Reinforced Engineered Granular Fill on Soft Soil

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- Diffusion of Chloride and Dichloromethane through an HDPE Geomembrane, R.K. Rowe, L. Hrapovic & N. Kosaric (Canada)
- Geotextile Filters for Internally Stable/Unstable Soil, S.K. Bhatia & Q. Huang (USA)
- Relationship between PVC Geomembrane Density and Plasticizer Content, J.P. Giroud & L.G. Tisinger (USA)
- Manufacturing Quality Control and Certification of Geotextiles, C.J. Sprague (USA)
- Modelling of Geosynthetic-Reinforced Engineered Granular Fill on Soft Soil, S.K. Shukla & S. Chandra (India)
- Use of Recycled Automobile Tires to Design Landfill Components, D.B. Narejo & M. Shettima (USA)
- Relaxation Behavior of Thermally-Induced Stress in HDPE Geomembranes, A.E. Lord, Jr., T.Y. Soong & R.M. Koerner (USA)
- Determination of Geosynthetic Strain due to Deflection, J.P. Giroud (USA)

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Calendar of Events

Testing and Acceptance Criteria for Geosynthetic Clay Liners; Atlanta, Georgia, USA 29 Jan 1996
Contact: Mr. Bob Held, ASTM, 1916 Race St., Philadelphia, PA 19103-117 USA
Tel.: 1 (610) 832-9500 Fax: 1 (610) 832-9666

Geofilters '96 Second International Conference on Filtration and Drainage in Geotechnical Engineering; Montreal, Quebec, Canada, 29-31 May 1996
Contact: Conference Secretariat GEOFILTERS '96, c/o Service des Congres, Ecole Polytechnique, Campus de l'Universite of Montreal, C.P. 6079 Succursale Centre Ville, Montreal, Quebec, CANADA
Tel.: 1 (514) 340-3215 Fax: 1 (514) 340-4440

Third International Symposium on Environmental Geotechnology; San Diego, California, USA, 10-12 Jun 1996
Contact: H.Y. Fang, Lehigh University, Department of Civil and Environmental Engineering, Fritz Engineering Laboratory, 13e Packer Ave., Bethlehem, PA 18015-3176, USA
Tel.: 1 (610) 758-3566 Fax: 1 (610) 758-4522

First European Conference on Geosynthetics (EuroGeo1); Maastricht, The Netherlands, 30 Sep-2 Oct 1996
Contact: EuroGeo1, c/o Holland Organizing Centre, Parkstraat29, 2514 JD The Hague, THE NETHERLANDS
Fax: 31 (70) 3614846

Third International Conference of Reflective Cracking in Pavements; Maastricht, The Netherlands, 2-4 October 1996
Contact: Foundation C.R.O.W., P.O. Box 37, NL-6710 BA EDE, THE NETHERLANDS
Tel.: 31 (8380) 20410 Fax: 31 (8380) 21112

EPS Tokyo '96; Tokyo, Japan, 29-30 Oct 1996
Contact: Mr. Kouzaburou Ohgi, No. 8 Matsuda Bldg. 2-1-9 Okubo, Shinjuku-ku, Tokyo, 169 JAPAN
Tel.: 81 (3) 3205-7911 Fax: 81 (3) 3205-7963

IS-Osaka '96 Second International Congress on Environmental Geotechnics; Osaka, Japan, 5-8 Nov 1996
Contact: Secretariat IS- Osaka '96, Geomechanics Section, Disaster Prevention Research Institute, Kyoto University, Gokacho, Uji. Kyoto 611, JAPAN
Tel.: 81 (774) 33-3521 Fax: 81 (774) 33-4115

IS- Kyushu '96 Third International Symposium on Earth Reinforcement; Fukuoka, Kyushu, Japan, 12-14 Nov 1996,
Contact: Prof. Ochiai, Dept. of Civil Engineering, Kyushu University, 6-10-1 Hakozaki, Hagashi-ku, Fukuoka 812, JAPAN
Tel.: 81 (92) 641-1101 Fax: 81 (92) 641-5195
Fax: 1 (919) 515-7908

Geosynthetics '97; Long Beach, California, USA
11-13 Mar 1997

Contact: Joseph A. Dieltz, IFAI, 345 Cedar St., Suite 800, St. Paul, MN 55101-1088 USA
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email: dieltz-ifai@aol.com

Sixth International Conference on Geosynthetics; Atlanta, Georgia, USA 25-29 Mar 1998

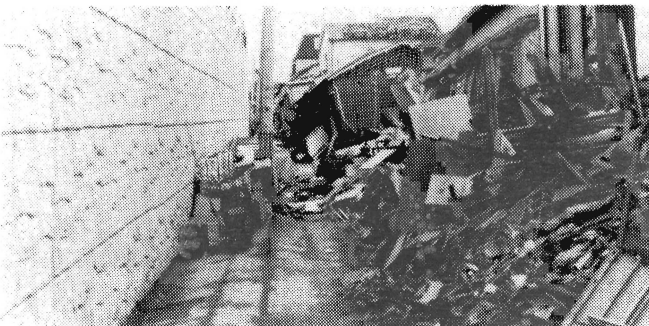
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Note: Items in bold print are organized under the auspices of the IGS or with the support of the IGS.

Errata

The captions on two photos in the IGS News, Vol. 11, No. 2, p12 were reversed. The photos accompanied the article by F. Tatsuoka, M. Tateyama, and J. Koseki titled "Geogrid

Retaining Walls Survive the Great Hanshin Earthquake, 17 January 1995". The Editor apologizes for the mistake. The photos with the correct captions are provided below.



Scene in front of a GRS-RW at Tanaka.



Failure of a conventional railway support wall.

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

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- Helps support the aims of the IGS, especially the development of geotextiles, geomembranes, related products, and associated technologies.
- Contributes to the advancement of the art and science of geotextiles, geomembranes, related products, and associated technologies.
- Provides 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:

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