A special highlight dominated the beginning of 2003: Our 3rd geosynthetic symposium that took place on 23rd and 24th January 2003 at our facility in Adorf (Vogtland/Sachsen) which celebrated its 10th anniversary. We were pleased to welcome more than 200 guests, some travelling long distances to the beautiful Vogtland to attend the lectures in the Kurhaus Bad Elster.

We were positively surprised that we had so many participants and deeply impressed about the enthusiastic speech from Dr. Tassilo Lenk, the administrative head of Vogtland-County. Lectures, supporting programme and ambience of the hotel "Hohe Reuth" were a great success which is due to the organisation team of Dr.-Ing. Ernst Reuter, Ms Christine Grothus and Ms Adriane Rux and encourages us to organize future events. Obviously, that an in Adorf manufactured product was highlighted throughout the symposium:

However, other most interesting lectures about the geosynthetic research work of Naue Fasertechnik in cooperation with various university research partners as well as lectures about successful product applications were held under the approved direction of em. Prof. Dr.-Ing. E. h. Rudolf Floss.

Our 3rd geosynthetic symposium has shown one more time that geosynthetics are an important part of the technical development in all fields of geotechnics. The users of geosynthetics for various functions in geotechnics know the advantages: Equal or even superior performance and efficiency allow users to save a lot of money and thus ensuring environmental protection. Results of field trials under scientific supervision on the landfill Kienberg/Bavaria, Germany about Secudrän® (a drainage product manufactured in Adorf) have proven exactly one of these statements with a very convincing argument: "Tests on Secudrän® have shown that this drainage mat of Naue exhibits a high reserve capacity even at extreme short-time hydraulic stresses that are far beyond the design recommendations of the German GDA [recommendation 2-20]." Quotation from "Proof of efficiency of Secudrän® 316 DS 600 / 316 in comparison to a gravel drainage system by means of lysimeter investigations on the landfill Kienberg", a report of Dr.-Ing. Steffen Ingenieurgesellschaft mbH in the frame of the Bay-Forrest Research Project (F58 (F)) "Filter and drain efficiency of capping systems on landfills with or without geosynthetics" from 3rd February 2003. There cannot be better results and proofs established from non-bias authorities in a research project financed by public authorities.

Another example is the increasing application of Bentofix® geosynthetic clay liners in the case of dyke repairs in the Elbe River after the flood desaster in August 2002. In February 2003, the TV channel MDR reported in their series "Einfach genial" (Just Great) about these Bentofix® applications for improvement and repair of dykes at the rivers Elbe and Mulde. It's just great, technically and economically.

In the last issue of Naue News in November 2003, we have already reported about the Secugrid® piles for soil reinforcement which has successfully been developed and has been and will be used in future field trials. It will have a major influence on the orientation of the Corporated Group towards increasing activities in foundation and soil reinforcement projects, especially in road and railway construction.

Since the turn of the year, considerable resin shortages have led to increases in pricing, particularly for polyolefine resins. We kindly ask our customers to understand our reasons for price increases.
Naeu Geosynthetics

At the beginning of 2003, a new company under the direction of Christopher Quirk has been founded in Birchwood near Manchester, England. The British subsidiary under the name "Naeu Geosynthetics" is responsible for all sales activities throughout England and Ireland. Besides the established family name, it also bears the additional term "Geosynthetics" thus illustrating clearly the field of activities for our customers.

In the past, the main activities centered on landfill construction and environmental protection. However, the introduction of the geogrid Secugrid® has quickly led to a successful extension of the business sections. The original team with Christopher Quirk, Fiona Bonner and Gerard Mason have been strengthened by Angus Hamilton and Mike O’Brien in the beginning of this year. On 21st and 22nd February 2003, the first geosynthetic symposium with more than 80 participants was held under the name of Naeu Geosynthetics. Besides two lectures about the long-term behaviour of Bentofix® geosynthetic clay liners and "ecological and economic aspects with the use of Secudrän® geosynthetic drainage liners", Prof. Dr. Robert Koerner gave two more excellent presentations on "Geosynthetic applications in steep walls" and "New landfill strategies". Mr. Bernhard Myles rounded off the programme with his lecture about the "CE-marking" which was also of high interest. We wish the new company to cope with the increasing challenges and to succeed in future projects.

At the location Tönisberg not only Carbofol® geomembranes are manufactured but also Carbofix® concrete liners and Secudrän® XX extruded drainage mats. A team of six staff members under the direction of Vera Olischläger is responsible for the quality control (QC) of these product groups.

To ensure the high quality of the final product, all incoming raw materials have to be carefully selected, reviewed and controlled before added into the production process. Only after acceptance of the QC team resins are allowed to be unloaded.

During production of all geosynthetic products, quality control measures are performed by the staff members at regular intervals. The final control of Carbofol®, Carbofix® and Secudrän® is carried out in accordance with our product-specific protocols based on requirements of national and international guidelines. It includes the testing of short-term properties as well as long-term properties. The most important short-term properties of e.g. the geomembrane are yield stress, yield elongation, tensile strength and elongation at rupture. On customer’s demand, the tests can be performed according to ISO standards or ASTM standards using modern equipment with partly automatic specimen feed. Long-term resistance is proved by three different stress crack tests:

- Creep tensile strength test according to BAM guide-lines
- Bell-test according to ASTM D 1693
- NCTL-test according to ASTM 5397

Naeu Fasertechnik is supposed to be the only European manufacturer that has integrated the NCTL-test into the manufacturing quality control of geomembranes in order to documentate the importance of long-term resistance.

Furthermore, special investigations and research work is performed with the objective of improving and developing products. Vera Olischläger is a member of various working groups (e.g. CEN/TC 189, WG 6 Geosynthetic Barriers) allowing her to set into practice possible new requirements in the location Tönisberg.

Projects

Landfill Meia Serra (Madeira), Portugal
Burkard Lenze, NFT

The extension works of the landfill Meia Serra started in May 2001. Our Portuguese partner BBF from Coimbra won the project using exclusively Naeu geosynthetics. The project was divided into two installation phases with one domestic waste cell and one ash cell.

The base liner consisting of a geosynthetic clay liner Bentofix® NSP 4900-1 and a 2 mm thick Carbofol® geomembrane structured on both sides (KN/MK) was installed on the more than 27,000 m² large first domestic waste section area. Upon a Secutex® protection nonwoven, a mineral drainage layer for leachate collection was placed in the centre of the landfill. In the steep slope areas, a geosynthetic drainage mat Secudrän® R301 DS601 was used.
The cross-section of the 5.500 m² large ash cell where the sediments of waste incineration were deposited was identical to the domestic waste section. In addition, the contractor and the authority decided to install two geomembranes encapsulating a drainage net to protect the groundwater against escaping leachate in this section, due to the consideration that possible escaping leachate would cause the most environmental damage.

In September 2002, the second installation phase started. The same material as described above was used for lining the 21.000 m² domestic waste cell and the 10.000 m² large ash cell. In November 2002, a cover liner was placed on the 46.000 m² large first landfill section. The capping system consists of a Carbofol® 406 1,5 KN/MK geomembrane, a drainage mat Secudrän® R301 DS601, Secutex® R304 and R404 protection nonwovens and a geogrid Secugrid® 30/30 Q6 ensuring stability in steeper slope areas.

The high requirements for the Meia Serra landfill design due to narrow spacing and the morphology of the island were perfectly met by the use of a geosynthetic combination of geosynthetic clay liners, drainage mats, protection and reinforcement elements.

Schedule of shows and conferences, 2nd quarter 2003

May
20./21.05.03 Roadware 2003, Prag
21./22.05.03 4. Karlsruher Altlastenseminar 2003

June
10.-12.06.03 CIWM, Paignton, Torbay (England)
17.06.03 1. Hildesheimer Forum zum anlagenbezogenen Gewässerschutz
17.06.03 1st IGS UK Chapter National Geosynthetics Symposium, The Nottingham Trent University (England)

Staff News

Since the last issue of the “Naue News” there have been the following changes in the group (Status 02.04.2003):

<table>
<thead>
<tr>
<th>Name</th>
<th>Company/location</th>
<th>Dept.</th>
<th>Function</th>
<th>Date</th>
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<tbody>
<tr>
<td>Sandra Brüning</td>
<td>NFT, Fiestel</td>
<td>AWL</td>
<td>SB</td>
<td>01.01.2003</td>
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<tr>
<td>Armin Leue</td>
<td>NFT, Lemförde</td>
<td>VE</td>
<td>VSB</td>
<td>01.01.2003</td>
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<tr>
<td>Mike O’Brien</td>
<td>Naue Geosynthetics, U.K.</td>
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<td>01.01.2003</td>
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<td>Angus Hamilton</td>
<td>Naue Geosynthetics, U.K.</td>
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<td>01.01.2003</td>
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<tr>
<td>Esat Naci Or</td>
<td>NFT, Ankara</td>
<td>VE</td>
<td>VSB</td>
<td>01.01.2003</td>
</tr>
<tr>
<td>Hana Rouskova</td>
<td>NFT, Prag</td>
<td>VE</td>
<td>VSB</td>
<td>15.01.2003</td>
</tr>
<tr>
<td>Holger Pohlmann</td>
<td>NFT, Lemförde</td>
<td>VE</td>
<td>VSB</td>
<td>01.01.2003</td>
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<tr>
<td>Patrizia Salerno</td>
<td>Naue Geosystem, Italy</td>
<td></td>
<td>SB (fixed-term)</td>
<td>15.03.2003</td>
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Personal leaving the company
Dr. Ernst Reuter        | NFT, Lübbecke         | Management | Managing director | 31.01.2003|
Wolfram Gödde          | NFT, Barcelona        | VE       | VSB               | 28.02.2003|
Arne Groen             | NFT, Lemförde         | VE       | VSB               | 31.03.2003|

Limited authority to act and sign
Thomas Tepper          | NSL, Tönisberg        | Tunnel construction | VSB | 01.01.2003|
Andreas Post           | NFT                    | VI       | VSB               | 01.02.2003|
Thomas Neuland         | NFT                    | VI       | VSB               | 01.02.2003|

Changes in staff
Thomas Tepper          | NSL, Tönisberg        | Tunnel construction | VSB | 01.01.2003|
Bijum Vagiakis         | NFT, Fiestel           | Accounts      | SB (fixed-term)   | 01.03.2003|
Rafal Cieselski        | Rotanes Naue, Warschau |          | Managing director | 15.01.2003|

VE: sales export, VI: sales Germany, VSB: sales engineer, SB: clerk

Naue on the road

FS-KGEO in Munich: Geosynthetics make up ground

The main objective of most of the more than 260 users, authority representatives and engineers participating in the 8th symposium of the special section “Synthetics in geotechnics” (FS-KGEO) in Munich were to be kept informed and to keep pace with the dynamic development in this section. Furthermore, it was a good occasion to exchange information. However, the need of information became apparent: more than 80 participants took part in the basic workshop about application of geosynthetics.

In the setting of the huge flood damages in the last years, the main topic of this symposium was flood and groundwater protection under the direction of Dr.-Ing. Georg Heerten, vice-president of the DGGT (German Society for Geotechnics). He was assisted by Dr.-Ing. Fokke Saathoff (BBG Consulting Geosynthetics) with a lecture about “Geosynthetics for dyke stability and improvement” and Dr.-Ing. Ernst Reuter who spoke about possibilities of “Geosynthetic clay liners as sealing elements in dyke construction and hydraulic engineering”. Both speakers drew the attention to the economic and ecological advantages resulting from the use of geosynthetics. A joint lecture of BBG, the designing office Feuerbach and the consulting office Dr. Knipschild showed clearly that groundwater protection can be designed under economic aspects using geosynthetic clay liners.

Another project example jointly presented by BBG, the consulting office Richter and the IGBE (Insti-
BBG on tour
We have already reported in the last issue of Naue News about the BBG "Engineering Days". Unfortunately, we have neglected to state the company's names of Dr. Beyersdorf and Mr. Ziegler beyond the photographs. Dr. Beyersdorf is a staff member of the consulting office Mohn in Husum and Mr. Ziegler is the managing director of the company Ludwig Kunststoffe in Berg. The "Engineering Days" are also being held this year. In Erfurt and Chemnitz, two events have already been held in cooperation with the consulting office Bauer, as well as one self-organized event in Poing near Munich. Further "Engineering Days" will take place. More information can be found on the internet site www.bbg-lf.de.

Have you already heard...?
Dr.-Ing. Walter Mühring, Building Superintendent retd.
On 16th May 2003 Dr.-Ing. Walter Mühring will turn 70. In his function as director of the "New Building Authority" he was responsible over decades for the extension of the "Mittelland" canal in Osnabrück. He is one of the pioneers of geosynthetic applications in hydraulic engineering and has always supported the development of revetment constructions in waterways with geosynthetics. He is absolutely convinced of the use of multiple-layered filter mats under grouted revetment systems in waterways which can also be applied with full grouting as sealed revetments in dammed waterways. Accompanying investigations, field trials and own dives as engineering diver are the proof of his considerable contribution to this successful development for which he stood up in fierce discussions and which have been published in many papers. In the fifties and sixties, lifetime of revetment constructions in waterways was approx. 5 years while the current construction methods ensure a lifetime of more than 25 years and full efficiency even at considerably higher ship traffic stress. The new methods have proven success and have found their way into standard guidelines. Naue Fasertechnik extends its gratitude to Dr.-Ing. Walter Mühring for his powerful commitment over decades in the development of revetment construction methods with geotextile filters which are now accepted as standard construction methods - he has rendered outstanding services for geosynthetics.

Dipl.-Ing. Karsten Johannßen - 60 years
The head of our export department with "procura" (being authorized to act on behalf of the company), Dipl.-Ing. Karsten Johannßen will be 60 on 11th May 2003. He joined our company more than 30 years ago and has contributed to its successful development from the early days to the present, one of the world-wide market leaders for technical solutions with geosynthetics. Naue Fasertechnik extends its gratitude to him for his tireless and successful commitment in sales activities over decades.

Virtual tour in our laboratory in Tönisberg
On our internet pages www.naue.com (section "products") we have now published a virtual visit through our laboratory in Tönisberg. Enjoy a visit of the test rooms and have a look of a selection of tests carried out by our staff members.

Prof. Dr.-Ing. habil. Sören Kohlhase
Prof. Dr.-Ing. habil. Sören Kohlhase turned 65 on 11th April 2003. Since 1994, he has been responsible as director of the Institute for Hydraulic Engineering at the University Rostock for several large research projects e.g. BMBF, DFG etc. working predominantly on coastal engineering research projects at the Baltic Sea. From 1993 until 2002, he directed the task group 5.1 "Geosynthetics in geotechnics and hydraulic engineering" as chairman and has always promoted "soft" coastal protection solutions with geosynthetics. Naue Fasertechnik congratulates him and wishes him all the very best and happiness and prosperity for the future.

New IVG chairman
At the symposium FS-KGEO in Munich, the members of IVG "Industrial association geosynthetics" have elected Dr.-Ing. Fokke Saathoff (BBG Consulting Geosynthetics) as chairman. Naue Fasertechnik congratulates and wishes him a further successful development of secure and economic construction methods with geosynthetics.