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News from the Group



GAW Technologies
Pildner-Steinburg GmbH Nfg & Co KG, Graz

- Plant construction and engineering for the
 - paper industry
 - automotive industry
 - chemical industry
 - environmental technologies

www.gaw.at



MAW Styria Maschinen- und Anlagenbau GmbH & Co KG
Eisenerz

- Plant construction and engineering for the
 - paper industry
 - automotive industry
- Special purpose machinery

www.maw.at



KRESTA Anlagenbau GmbH Nfg & Co KG, St. Andrä

- Plant construction and engineering for the
 - paper industry
 - automotive industry
- Apparatus engineering
- Tank and pipeline construction

www.kresta.at



ENVIRGY
Environment Energy Engineering & Construction GmbH, Wien

- Flue gas cleaning technologies

www.envirgy.com



OSMO MEMBRANE SYSTEMS GmbH

- Membrane technologies



SPEDITION THOMAS GmbH, Graz

- Logistics and transport

www.sped-thomas.at



ThomLog GmbH, Graz

- Logistics and transport



GAW sistemas e tecnologia, Brazil

- Plant construction and engineering for the paper industry



GAW Paper Coating Systems Inc.
Chicago Illinois/USA

- Plant construction and engineering for the paper industry



CCI Modulbau GmbH, Eisenerz

- Modular construction



STYRCON GmbH, Graz

- Project development and consulting in deregulated markets



IHR GmbH, Graz

- Agencies
- Trading with second-hand-equipment

www.ihr.co.at



ETM Environmental Technology Magdeburg GmbH, Magdeburg

- Plants and components for flue gas cleaning and dedusting



- **editorial**
- **getting to know our companies**
better – GAW Brazil
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Projects and orders
- **on site** – Being in the front line
- **on focus** – Current news from
the companies

contents

editorial

As a result of some buoyant exports and investments, the Austrian economy has experienced a massive upswing in 2006, and in the next few years Austria will also experience stronger growth than its major trading partners. Industry is responsible for around 40% of wealth creation in Austria and it is therefore “the” motor behind innovation and growth. It ensures employment for more than two million people and contributes 62% of expenditure on research and development. In terms of EU expansion as well, industry has acted and continues to act as a driving force, with the result that no country has profited as much as Austria from the collapse of communism, the fall of the Iron Curtain, the subsequent opening up of Central and Eastern Europe, and EU expansion (in this connection, please see also the article on Page 6). In spite of this, the mood of Austrians continues to be characterised by scepticism and worry, appearing more negative than anywhere else. This harms the country as a location for business, as well as its firms, companies and employees. It is therefore high time people realised that Austria’s affluence is to a large extent dependent on the economic dynamic of the new EC member states and that a positive climate is needed if we are to keep our nose in front in Central and Eastern Europe.

Hand in hand with the positive economic data for Austria, there are also a lot of positive things to report on the GAW Group. The order books of our member companies are full, and prospects for 2007 also give us reason to anticipate another good business year for the Group. Among a great many interesting projects, I am also particularly pleased that this issue is presenting GAW Sistemas e Tecnologia Ltda., a GAW subsidiary recently set up in Brasil. Another newcomer is the newly designed company headquarters of KRESTA, which is now positively radiant with its new up-to-date look. In addition, we are proud to be able to report that our reference project with AUDI is moving along nicely, and, and, and... there is so much more we could say about

the expansion of the Group, but you can read it for yourself inside. I should like to take this opportunity to wish all our customers, partners, suppliers and employees a successful start to the New Year.



Mag. Jochen Pildner-Steinburg

Editorial team edition 2/2006, december
From the left to the right (sitting): Teresa Nogawka/GAW Paper Coating Systems, Rainer Purgstaller/GAW E-Abteilung, Helmut Zimmermann/GAW.
From the left to the right (standing): Nikolaus Brücke/GAW, Adam Glowacki/GAW Paper Coating Systems, Heimo Brenner/ENVIRGY, Nina Pildner-Steinburg/GAW, Wolfgang Senner/GAW, Marc Schwingenschlägl/GAW, Alexandra Pichler/Pichler-Jessenko.
In cooperation with: Joser Eder (GAW), Brigitte Paier (KRESTA).

• **Getting to know our companies better.**
companies of the GAW Group are presenting themselves.

proudly presents companies of the GAW Group are presented

GAW Sets up a Subsidiary in Brazil

Strengthening our Market Presence in South America

As part of the expansion of our global presence and in order to strengthen our market presence in South America, GAW has this year set up a subsidiary in Brazil. GAW Sistemas e Tecnologia Ltda officially opened for business on 05/10/2006.

The firm is based in Sao Paulo, capital of the federal state in Brazil bearing the same name. The city is located in the South East of Brazil around 80 kilometres from the Atlantic Ocean and it is the major state centre for economic and financial operations, transport and culture.

GAW Sistemas e Tecnologia Ltda will primarily be involved in the business sector of paper and cardboard and its major role will be to acquire or-

ders or support the parent company in all local activities relating to project realisation, with performance of its own contracts to follow in a short time.

We have been able to acquire Mr Silvio Romero as minority shareholder and also managing partner. He has already worked for many years in machinery and plant manufacture for the South American paper and cardboard industry and is very well acquainted with the market and the customers.

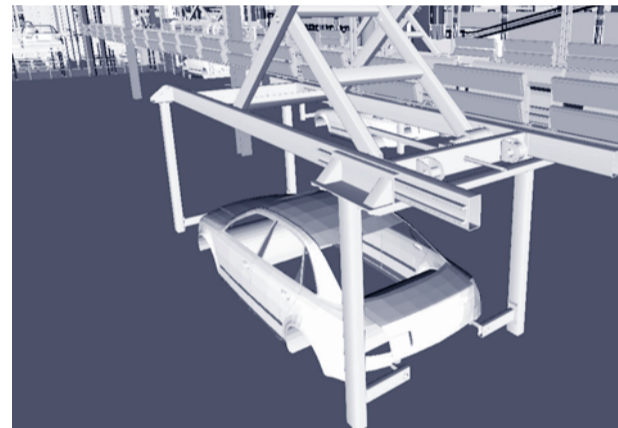
Brazil – Great Economic Potential

In terms of area and population, Brazil is the fifth largest nation in the world, and with a popu-

lation of over 186 million, it is the most populous country in South America. Its GDP is the largest of all countries in America, apart from the USA, and it has a strong high-tech industrial base. Equally, the South American customs union of Mercosul adds further support to the market in Latin America and is opening up the Brazilian economy to wide-ranging opportunities. In spite of difficulties in terms of the fiscal and monetary policy that, in spite of resistance, the government has adhered to for years, it is pleasing to note that the rate of unemployment is on the decline and average income on the increase, in other words purchasing power is soaring and economic growth is being driven forward.

GAW for Brand Leader AUDI

Conveyor System and Steel Work for New PVC Line



In the summer of this year GAW was commissioned by AUDI to construct the steel work and supply and assemble the entire conveyor system for a new PVC line at the Ingolstadt plant. The contract is being implemented by a consortium involving also ABB and Langbein & Engelbracht.

PVC Restructuring – the Project

As part of the PVC project, AUDI is having the existing PVC line 1 in Hall N51 replaced by two new lines, with the intention of automating pore detection and coarse stitch seam sealing on the underbody and engine compartment, as well as underbody protection and sill coating application. The

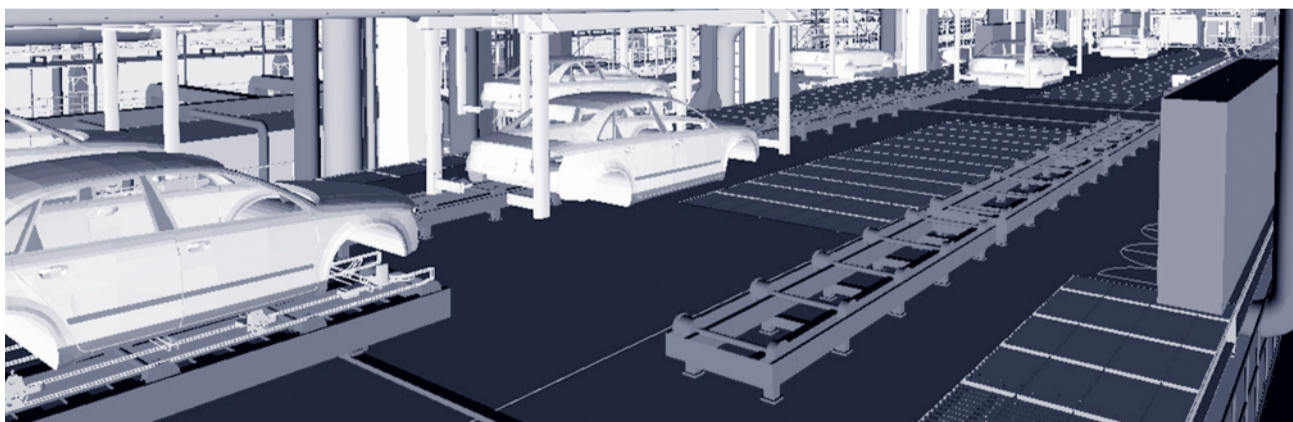
linking conveyor system areas must also be rebuilt or else constructed from scratch. The most important part of the GAW supply contract, apart from the skid conveyor system, is the 54 height-adjustable EHB electric rail trolley suspension units¹.

Using these suspended units, the car bodies can be placed in the chassis main beams and transported by means of the various robot stations and manual devices. Since this system has had to be designed with all vehicle types of the AUDI corporation in mind, it also needed a change-over station for the various adapters on the suspension units. At this station the GAW adapter pieces are type-controlled, with fully automated changeover using robots.

The particular challenge of this project lies, on the one hand, in its highly "athletic" schedule, and on the other in the numerous interfaces and additional requirements that were only formulated by Audi once design got under way, indeed during the realisation phase itself.

In this project GAW is supporting the brand leader Audi in extending its capacity at the Ingolstadt plant and in doing so underlines the expertise it offers the automotive industry.

1. EHB electric rail trolley suspension units: In German, EHB stands for Elektro-Hänge-Bahn (electric suspended railway) and is defined as a load carrying unit that can be moved forwards by means of running gear and chassis.



• **Projects and orders.**
presentation of current projects/orders of the group companies.

GAW – Starch Adhesive Preparation System for Thai Paper

Project Realisation in Record Time

After some protracted and tough negotiations, at the beginning of September 2006 the contract for the starch adhesive preparation system for the PM1 and PM2 paper machines in the Thai Paper paper works (Thailand) was signed. This may be seen as a particular success for GAW, as a year earlier a similar starch adhesive preparation system for the PM3 paper machine had been supplied by our

competitor. As long ago as 1993 Thai Paper had acquired a GAW coating kitchen.

Delivery Time as a Challenge

The project had to be realised in a very short time. There were a mere two months available for the design and manufacture of the GAW produc-

tion parts, as well as procurement of the system components. Finally all the equipment was delivered on time at the end of October. Assembly is being carried out by the customer at own risk, but in line with GAW design documents.

System automation and visualisation was implemented using Simatic S7 and WIN-CC.

Commissioning of the system and the subsequent training of the operating staff took place in December by a GAW chief fitter.

The Largest Cardboard Producer in China is Once Again Placing Orders with GAW

At the start of September 2006 GAW once again received an order from China's largest cardboard producer, Nine Dragon Paper. Nine Dragon Paper, founded in 1995, has already for a few years now been one of the best customers of GAW and is in the hands of the richest "self-made" woman in the world, Zhang Yin, herself Chinese. With the equivalent of 3,000 Euros in initial capital she opened a paper business in Hong Kong, and then found a foothold in the USA as well, becoming the largest buyer of used paper there. Today the most modern paper factories in China belong to Zhang Yin.

Scope of the Project

For the PM 12 and PM 13 cardboard machines on the Dongguan site in the Southern Chinese province of Guangdong, GAW supplies the starch-based adhesive preparation system and the work stations, as well as various chemical preparation systems. Along with design and supply, the provision of services also includes mechanical and electrical assembly supervision, commissioning and on-site training. The current order is so far the sixth that GAW has carried out for Nine Dragons Paper. GAW's initial involvement started in 2002 when GAW was given the order for the full coating colour pre-

paration system, including work stations, for the PM 4 cardboard machine, as well as chemical preparation systems for used paper and material preparation. The following further orders were carried out for this group:

- Work stations and chemical preparation systems for the PM5 and PM8, built in Taicang
- Work stations and chemical preparation systems for the PM6 and PM7 in Dongguan
- Chemical preparation systems for the PM9 and PM10 in Dongguan
- Extension of the full coating colour system, work stations and chemical preparation systems for the PM11 in Dongguan.

Confidence in GAW Quality

The number of orders already carried out shows that the high demands for quality, adherence to deadlines and flexibility in the realisation and commissioning of the systems have always been met in the past. The task is made harder today in that the

project realisation and assembly times are getting shorter and shorter.

The system parts for the PM 11 have been under assembly in Dongguan since mid November; commissioning will take place in the New Year. The start-up date for the PM 12 and PM 13 is scheduled for the end of March, with both mechanical and electrical assembly being carried out by Chinese staff under the supervision of a GAW chief fitter. The production plants in Dongguan and Taicang are growing at a very rapid pace. Since 2003 alone no less than seven cardboard machines have entered operation, and another three will start running by April 2007, and there are still more planned.

Since March 2006 the Chinese corporation has been listed on the Hong Kong stock exchange, with market capitalisation¹ of 3.7 billion Euros.

1. Market capitalisation – also called stock market capitalisation or stock market value – of a public limited company results from the multiplying factor of the share price and the total number of shares of the company that have been issued.

Follow-Up Order from Nine Dragon Paper

• **Projects and orders.**

Presentation of current projects and orders of the group's companies.

proudly presents

Contract for Erecting the SNOx Plant for the OMV Refinery Schwechat

Decision in Favour of Konsortium ENVIRGY/ILF/TECON

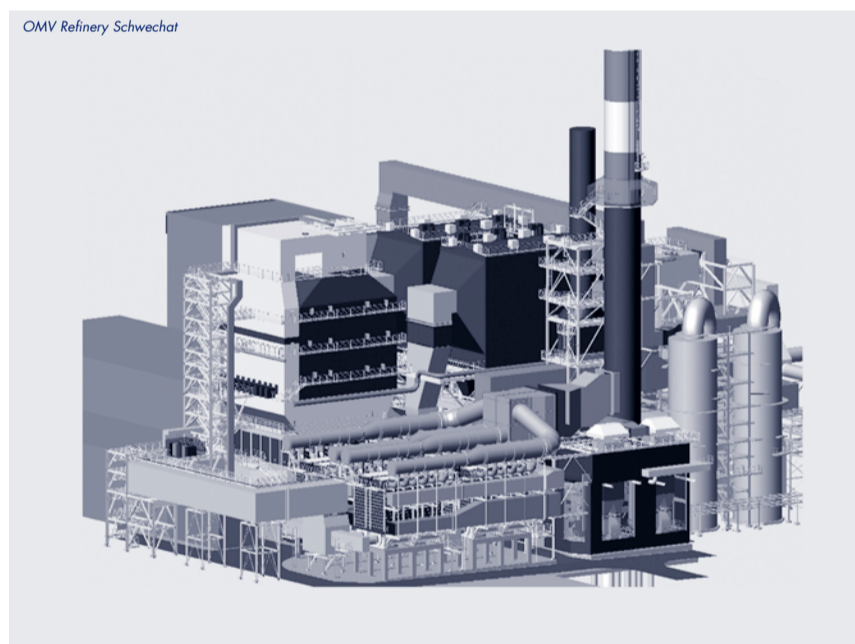
OMV – the leading petroleum and natural gas corporation in Central Europe – has chosen the Konsortium ENVIRGY/ILF/Tecon for the construction of a combined flue gas desulphurisation and denitrogenisation plant in the refinery on the OMV Refining & Marketing GmbH Schwechat site. The so-called SNOxTM plant, built under licence from Haldor Topsoe, will replace the existing Wellman-Lord plant in the power stations. In these power stations, highly viscous and sulphurous fuel is primarily used in the production of electricity and heat for refinery requirements.

The SNOx Process

The SNOx process is a special catalytic process for the purification of flue gases resulting from the combustion of sulphurous fuels of the kind that occur in the processing of crude oil. Apart from ammonia for denitrogenisation, the process requires no additional absorbents or chemicals. Apart from purified flue gas, the only resulting product is sulphuric acid of marketable quality.

Scope of Services

The Konsortium ENVIRGY/ILF/Tecon was commissioned to carry out the construction of the flue gas purification plant at a total investment sum of



around 100 million EUROS. The plant is due to be ready in only 18 months time.

ENVIRGY Environment Energy Engineering and Construction GmbH is acting as engineering manager for the entire flue gas purification system and

to oversee proper application of the licence owner's specifications. In addition, the team benefits from ENVIRGY's many years' experience in the field of catalytic flue gas denitrogenisation and project realisation of flue gas purification

GAW PAPER COATING SYSTEMS – What's Going on?

Projects at Bowater and Georgia Pacific

The GAW North American subsidiary GAW Paper Coating Systems is now looking back on its most successful business year since its inception, with large projects for major customers such as Bowater, Georgia-Pacific and Dow Chemicals above all making an important contribution.

Restructuring at Bowater Calhoun

Bowater Incorporated is one of the leading manufacturers of coated papers, special papers and newsprint, ensuring employment for as many as 7,800 people in 12 cellulose and paper works in

North America, Canada and South Korea. In the federal state of Tennessee, the Calhoun works is located right next to the Hiwassee River, and, with 5 paper machines producing an annual total of 372,000 tonnes of newsprint and 372,000 tonnes of special paper, it is one of the largest newsprint manufacturers in North America. As an alternative to wood-free uncoated paper, the PM 4 has now been retooled for the production of high-quality LWC paper made from thermomechanical pulp. At 2,47 million US dollars, GAW PCS has been awarded the contract for supply and assembly of the coating kitchen for the new production line with an annual capacity of 150,000 tonnes.

Continuous Starch System for Georgia-Pacific

GAW PCS has been awarded a contract to supply a continuous starch treatment system by the Nacheola Paperworks, Alabama, USA, which has been a member of the Georgia-Pacific Corporation since the year 2000. The new plant system produces 5600 kg of starch slurry/hour with a solid content of 32%. Georgia-Pacific is one of the world's largest manufacturers and dealers in tissue, packaging, paper, cellulose and building products such as plasterboard and constructional timber, and employs 55,000 people at 300 sites in North America and Europe.

• **Projects and orders.**

presentation of current

projects/orders of the group

companies.

proudly presents

Successful Start-Up at Dow Chemicals

Excellent Results from Dispersant Tests

Well on a year ago, GAW was commissioned by Dow Chemicals, the largest chemicals manufacturer in the world, with the supply of four VST¹ dispersant units for use in dispersant tests as part of product development and recipe creation.

Tailored Solution for the Customer

The customer's requirements were very specific, and particular attention was needed even from the design phase. In addition, the integration of the newly ordered equipment into the existing

ABB Cellier system components also proved a great challenge. A tailored solution therefore had to be developed where the full range of peripheral units, such as mixing container support, design of the container and the filling unit etc. all had to be taken into account.

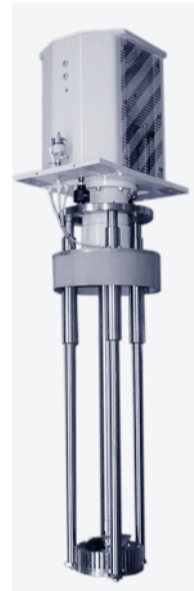
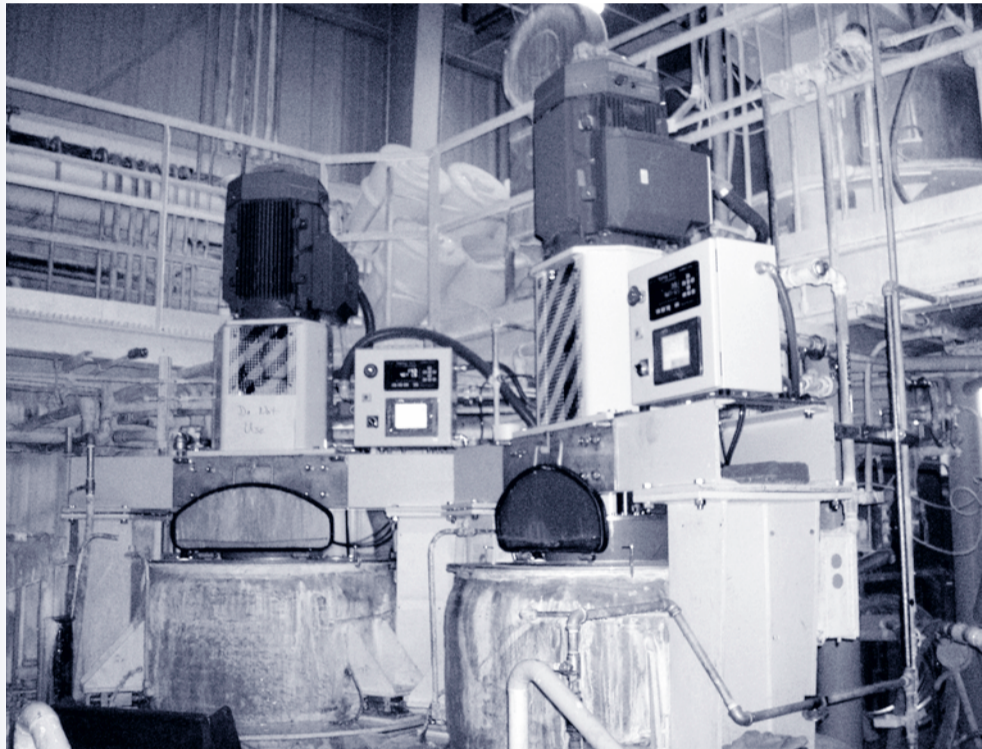
Excellent Results from Dispersant Tests

The four VST dispersant units were incorporated in the pilot coating machine on the Midland site in Michigan, USA, and commissioned in No-

vember 2006. Tests are run, for instance, to assess dispersion homogeneity, dispersant period and power consumption over changing viscosities and solid contents, and the results so far achieved are there for all to see.

Using the GAW VST dispersant units, it is now possible to prepare pigment slurries of very high solid content, as well as dry products and highly complex product recipes.

The contract was carried out jointly with GAW Papier Coating and once again shows the superior technical design of the GAW VST units.



1. VST is an acronym for Variable Shear Technology and is based on the full adjustability characteristics of the rotor/stator top cover during operation, by means of which the relevant optimum ratio of rotation and shearing can be set for all cases of application.

OSMO – Pilot System for ThyssenKrupp Nirosta

Applied Research and Development with a Grant from the Federal Government



Together with the BFI Betriebsforschungsinstitut VDEh-Institut für Angewandte Forschung (Düsseldorf) and our customer ThyssenKrupp Nirosta (Dillenburg), OSMO Membrane Systems GmbH is developing a new environmentally friendly process for recovering valuable metal from stainless steel pickling using membrane electrolysis.

The project, which comprises construction and operation of a suitable pilot plant on the premises of the customer ThyssenKrupp Nirosta, is receiving financial support from the DBU (Deutsche Bundesstiftung Umwelt – German Environment Foundation).

Process under Pilot Test

The process under analysis in the pilot test is a three-stage process, consisting of diffusion dialysis, electro dialysis and membrane electrolysis.

The electro dialysis unit (see also imteam issues 2/04 and 1/05) was supplied and commissioned by OSMO in November/December 2004.

Nitrate emissions (wastewater containing nitrate) from the diffusion dialysis unit already in existence have been effectively reduced by over 50% in this way. The free acid recovery has been increased from approx. 75% to approx. 90%.

Use of membrane electrolysis would enable the materials cycle to be closed and metal recovery to take place at the same time. Appropriate pre-tests for metal separation have already been successfully carried out at OSMO as part of a university degree study.

This pilot test should now enable data to be obtained for the accurate dimensioning of a large-scale plant, as well as conclusions to be drawn on the reusability of the metal mix obtained (nickel, chrome and iron).

Envirgy Flue Gas Purification for Waste Incineration in Moscow

Certainly Not Business as Usual

At the end of 2004, the ENVIRGY/UNGER Working Group signed an agreement for the design, supply, assembly and commissioning of a complete flue gas purification plant for the MSZ3 waste incineration facility in Moscow with the customer. Since assembly started in May 2006, ENVIRGY staff have been making periodic trips to Moscow to coordinate and check the delivery and assembly of the parts manufactured by sub-contractors.

Russian Roulette

Andreas Richter, ENVIRGY's Project Manager for the contract, can vouch for just-in-time deliveries being something akin to a game of chance: "Out of 40 lorries despatched, only half arrived on site within the appointed time period. A very large number were detained by Russian customs authorities at the border – ostensibly because the paperwork had not been properly issued." These kinds of bureaucratic obstacles can bring what is already a very demanding schedule into complete disarray. This is further aggravated by the fact that delivery of the various contract stages and technical equipment is limited by site constrictions and the large number of firms operating there.

As the ENVIRGY site manager, Andreas Richter and his team are also responsible for quality assurance and the ongoing acceptance of the plant system parts assembled on site. Here too there can be no talk of "business as usual" since, alongside the quality standards based on EN specifications, all the country-specific requirements must be met and Russian certificates obtained, such as GOST certificates and technical passports. But when it is snowing and temperatures are around freezing point, even routine operations such as assembly welding seams and maintenance repair work linked to these make higher demands both on the employees who carry them out and on-going quality assurance.

Both the customer and the city of Moscow, the future operators of the plant, give glowing reports of Envirgy, as Andreas Richter found on his latest official visit during a private meeting with the Project Manager.

To the great satisfaction of the customer, the fact that the grant of operating approval is anticipated to be on schedule is in no small way due to good teamwork with the ENVIRGY/UNGER Working Group.



2nd China International deSOx & deNOx Exhibition

Envirgy with an Exhibition Booth in Beijing

Due to the high degree of customer interest and the good quality of contact in the previous year, Envirgy was again this year represented with an exhibition booth at the 2nd China International deSOx & deNOx Exhibition and once again welcomed a very large number of interesting visitors.

At this extended exhibition booth this year specifically Chinese reference projects were on display. The folder for the Chinese market was presented in this new layout. The new ENVIRGY claim "we care about air" ought to be heard in the Cen-

tral Kingdom too, and it was therefore conveyed on various give-away items.

During this three-day event the Austrian ENVIRGY team was given staunch support by its colleagues from Taiwan.

This year too the throng of visitors has been considerable, as was the interest of operators and plant manufacturers in denitrogenisation technology. This is why Envirgy can view the market development of this future market with some optimism.



- **Being in the front line.**
Reports directly from the construction sites.
- **Current news from the companies.**
Current topics in the companies.

on site

on focus

GAW and Osmo – Synergies in the Group

Success through Strategic Sales

Synergies within the GAW Group were once more apparent as part of a project for one of the most faithful of GAW customers, the Felix Schoeller Group. For 110 years this group has been producing special papers and is a world leader in the field of decorative and special paper.

Targeted and strategic sales operations meant that the joint potential of the group could be fully exploited for this contract.

Surface Water Preparation for Improving Paper Production

What the customer required was optimisation and improvement of paper production. The aim

was to produce the best water quality suited for paper production, using the membrane technology of Osmo.

After pre-tests of the various water qualities at Osmo, a feasibility study was drawn up and a tailored Technocell quotation supplied. This comprises a reverse osmosis unit with a CIP purification stage with a capacity of 25 t/h. Surface water currently used for cooling purposes is employed. For reasons of operating safety the plant is piped throughout in stainless steel 1.4571. Instal-

lation of the reverse osmosis system (RO system) takes place in December 2006, with commissioning in the second week in January 2007.

Once the RO system is successfully installed and improvement of the water quality in paper production can be demonstrated, the RO system will be extended in stages to a maximum of 100 t/h.

This example demonstrates that the GAW Group is increasingly valued as a supplier of complete turnkey systems – and well beyond the confines of paper production and finishing alone.