Issue 2007, No. 25 | The Magazine of the KAEFER Group

KAEFER GROUP Expansion in the growth market Kazakhstan – 60 years of TERMOIZOLACJA **INDUSTRY** KAEFER Shanghai insulates for BAYER – Mexico successfully completes major project **OFFSHORE** KAEFER IKM inspects oil platforms – Underwater insulation is a new market of the future **SHIPBUILDING** G+H Schiffsausbau to be integrated – Vacuum panel developed for submarines **CONSTRUCTION** Park du Bois completed after four years of building – KAEFER Belgium erects scaffolding at the Main Station in Antwerp **AEROSPACE** Last leg for the A400M in Seville – TGV gets RECORE ceiling panels

K|WERT

KAEFER 2007

JANUARY '07 | FEBRUARY '07 | MARCH '07 | APRIL '07 | MAY '07 | JUNE '07 | JULY '07 | AUGUST '07 | SEPTEMBER '07 | OCTOBER '07 | NOVEMBER '07 | DECEMBER '07

KAEFER GROUP

March 2007
Establishment of KAEFER Insulation Technology Taiwan Co. Ltd

Sommer 2007
Majority stake acquired in British insulation specialist C & D

July 2007
IMM takes place in Hamburg

September 2007
KAEFER LLP Kazakhstan established

INDUSTRY

Spring 2007
Smoke extraction system in murpark completed

June 2007
Insulation of a PET factory in Mexico completed

October 2007
Third soundproofing hood completed for pump machine trailer

OFFSHORE

Spring 2007
KAEFER Spain wins contract for Adriatic project

Summer 2007
Renovation work underway on the living quarters of the ULA oil platform

December 2007
KAEFER IKM finishes inspection of living quarters on Ekofisk 2/4

SHIPBUILDING

May 2007
Acquisition of G+H Schiffsausbau GmbH

August 2007
KAEFER WANNER Shipbuilding established

September 2007
KAEFER Shipbuilding and IPPOKAMPOS take part in Monaco Yacht Show

CONSTRUCTION

Spring 2007
BMW World shortly before completion

Summer 2007
Conversion of the military hospital Park du Bois completed

August 2007
KAEFER Construction finishes MAL industrial plant project

Autumn 2007
East Wintergarden at Canary Wharf gets MICROSORBERS

AEROSPACE

February 2007
KTN starts production of ceiling system for the TGV

Summer 2007
KAEFER Aerospace begins testing air-conditioning pipes in the climate chamber

August 2007
First section of the A400M goes off to Seville

PREFACE

Dear Employees,
Dear Friends of KAEFER,

The year 2007 has brought us further dynamic growth worldwide in almost all segments – Industrial insulation, Shipbuilding, Construction, Offshore and Aerospace – and in all regions of our global business. Developments already highlighted last year were reinforced in the current period, for example power stations in Germany and construction. This means that from 2005 to 2007 we have overseen an explosion in growth roughly equivalent to the company's total sales in 1996. This is truly something everyone can be proud of – in all countries and regions, from Hammerfest in Norway to the construction sites in Vietnam and China.

We have strengthened our market position still further by acquisitions and greater expansion in new and existing markets. Heibl in Hungary, C & D in Britain and G+H Schiffsausbau in Germany are making a great start as new members of the KAEFER family and have also made excellent contributions to our management base. We are very busy making sure that the integration process is carried out swiftly and smoothly, without neglecting the auxiliary agreements, and in managing expansion in China, India and Vietnam. In future we will continue to raise our presence in growth markets; concrete projects are in the pipeline and will be pursued on the basis of sound business judgement and with a cool head for the financial dimensions. Additional capital expenditure, in scaffolding for example, has increased our order intake over the last two years and will be continued where appropriate.

Generally speaking, the aim is never to be satisfied with average performance when times are good and to limit the downside better than the competition when markets go off the boil. We can definitely claim to have succeeded in the first part. As for second, there is currently no sight of things slowing down – quite the contrary. We must nevertheless remain vigilant and prepared for setbacks, as the sudden crisis in financial markets recently showed; even if it did not affect us seriously. In any case, outstanding performance in good times is certainly a first step towards hedging against subsequent adversity.

One particular challenge was already visible in 2006, has increased in magnitude this year and will remain with us for the foreseeable future – rocketing price increases. Whether for raw materials such as steel, aluminium and insulating materials, for sub-contractors, or for wages and salaries generally, in some cases for financing costs too – price rises are always well ahead of the general inflation rate. This creates problems with long-term contracts and insisting on flexible adjustment clauses is often difficult. This requires all those responsible to show great foresight regarding future negotiations and subsequent price rises, although in the past successful purchasing often saved the day. Our special thanks go to all those who have dealt with these challenges successfully – because sales for sales sake is neither in our interest nor in that of our customers.

Compared with the more distant past, growth rates in the coming years should still be lavish, although more modest than in the last three years. We therefore need to continue stabilising our growth though improvements to internal processes – in global costing, process engineering, especially for major projects, cash management, quality control and safety procedures. We have begun the expansion of our range of international services by opening an office in Delhi to support our corporate service departments, we have developed our training programme for engineers as well as for financial managers, and our apprenticeship scheme has produced a national prize-winner in industrial insulation for the second year running. These steps all go to make up the continual development and improvement of our global group of companies. All of us can and should continue to contribute new ideas and work hard to put ever better solutions into practice.

The shareholders, Advisory Board and Management Board of KAEFER Isoliertechnik GmbH & Co. KG would like to express their thanks to all KAEFER colleagues worldwide for the outstanding performance you have delivered to our customers and with which you have laid the foundations for our group's sustained success. Your commitment, your skills and your loyalty are the basis for our continued future together and for a new year 2008 which we hope will be as successful as this one has been. We wish you a peaceful and cheerful Christmas holiday period and a prosperous New Year.

Peter Hoedemaker	Norbert Schmelzle	Jörn M. Fetköter
Managing Director	Chairman of the Board	Managing Director

„Common spirit – local diversity“

Promoting cooperation and cohesion within the Kaefer Group.

Page 05

Versatile climate chamber available for use by KAEFER companies

Kaefer now has a test instrument that can guarantee the quality of many products under the most diverse climatic conditions.

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South-East Asia: success for refractory teams

Kaefer has set up its own business for refractory materials in South-East Asia.

Page 26

KAEFER Spain: insulation for an LNG terminal 17 km off the Italian coast

The Adriatic LNG Terminal is the first offshore LNG terminal worldwide to be erected on a concrete platform.

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KIS Yacht Solutions – our new key to the European market

The service portfolio includes turnkey packages for insulation and interior outfitting, ranging from advisory services and design to manufacture and final installation.

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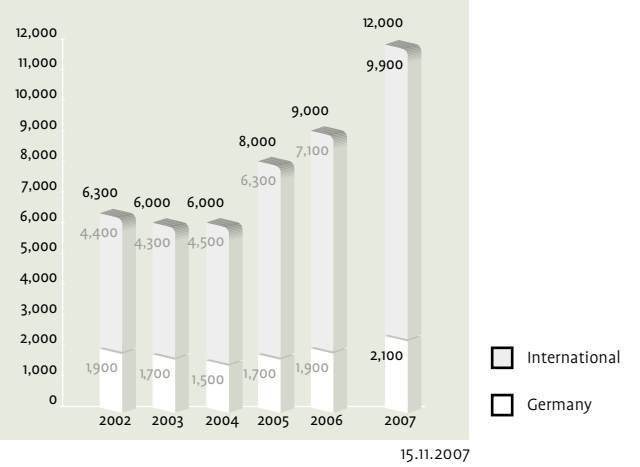
Content:

KAEFER Group sales

Turnover of the KAEFER Group
The business year 2007 was the most successfull year for the KAEFER Group so far. A considerable increase in turnover, internationally as well as nationally, led to a gross revenue of more than Euro 1 billion. Based upon organic growth and further company acquisitions, KAEFER generated an overall turnover surplus of 25%.



Employees of the KAEFER Group
Staff numbers also followed the upward trend. The number of employees outside Germany increased by 40%, thanks both to organic growth and acquisitions. In Germany staff numbers were up by 10%, partly due to the acquisition of G+H Schiffausbau GmbH.

Not the same procedure as last year: IMM 2007 in Hamburg

The internationalisation strategy is paying off: KAEFER is growing! The effects of this gratifying development were plain to see at this year's International Management Meeting (IMM 2007) in Hamburg. With almost 100 managers from 27 countries it was the biggest meeting of its kind ever held at KAEFER.

The leitmotiv for the meeting was "Common spirit – local diversity". This was particularly fitting, as the KAEFER Group now really does unite different cultures under one roof. Hosting the event, Jörn M. Fetköter compared the company to a mosaic, in which all the pieces fit together and combine to make a harmonious whole.

The Management Board's report made it clear in which direction the company is travelling. The latest developments and data, facts and figures and prospects for the nearer and longer term were presented. It all pointed in the same direction: we are a dynamic company with a wide array of skills and a great future.

The second day began with conferences and ended with a surprise. The morning was taken up with presentations on a variety of topics, including "Leadership at KAEFER", "Shipbuilding", "New overseas markets" and "Aerospace", and after lunch the managers went to sea, or rather on a trip around the port on the steamer "Klein Erna". The group got quite close to what looked like the final destination at the Airbus site, but shortly beforehand the steamer made an about turn, docked on the other side of the Elbe and left the surprised passengers standing in the infamous Hamburg drizzle. The plan was not to visit the Airbus factory in Finkenwerder, but the Edelfettwerk (refined fat factory) instead. The former industrial site is now a fashionable event location, where the participants of the IMM spent their Friday evening.

Here our managers were able to demonstrate that they could also master the most obscure challenges. They not only had to prepare their own dinner, but also make sure the tables were laid, mix the cocktails and think of some suitable dinner-party conversation. And so the 100 participants formed nine teams under the instruction of professional trainers and learnt about food, decoration, cocktails, percussion and news, in order to bring the busy day to a close with a perfect self-made party.

Young shareholders visit Poland

For the third time, following trips in 2004 and 2006, the young and future company shareholders met to gain a personal impression of the KAEFER Group's business operations. After stopping in Paris and Bremen the 'next generation' travelled to Krakow and Katowice in Poland from 14-16 June 2007.

The group had a busy schedule, including a tour of the modern headquarters, presentations by management on the successful development of the Eastern European region and two site visits. At the building sites the guests were able to learn about building facades and insulating tanks of a refinery. Time remained for a Q&A with staff from TERMOIZOLACJA and IZOKOR. The hosts brought the well-organised trip to an agreeable conclusion with an evening of Polish culture and cuisine.

"Common spirit – local diversity": Uniting corporate identity and individuality

The KAEFER Group is a decentralised organisation including more than 50 separate units which have joined us in different phases of our company history. In order to be successful together, it is important to promote cooperation and cohesion within the Group. At the same time, the units' different strengths and needs have to be recognised. Uniting the concepts of individuality and corporate identity is the purpose of the new label "Common spirit – local diversity".

"It is our goal to weld together all 50 companies and build one strong group," explains Stefan Beeg, head of communication, advertising and PR at KAEFER Isoliertechnik in Bremen. These efforts are already underway in areas such as human resources, controlling and IT, but also in projects like "Leadership at KAEFER". It is the Department of Corporate Communication's task to make sure that KAEFER is perceived as a unity from the outside. However, it is also necessary to appreciate that different countries, different cultures and different business areas require a certain amount of individuality to fit their market needs.

The label "Common Spirit – local diversity" illustrates this idea. It was introduced to help everyone understand and apply the correct amount of individuality without damaging the overall objective of strengthening the brand by maintaining consistency in look and feel. The label can be used whenever initiatives are started to strengthen the Group as a whole and to increase team spirit. For example, the label was printed on the new guidelines of "Leadership at KAEFER". It was also used inside K-NEWS to direct attention to an article about a project by KAEFER Punj Lloyd, India. K-NEWS will continue to publish stories about individual KAEFER companies, introducing one member of our global organisation in each issue.

Our companies can use the label for their local, regional or national initiatives whenever a group or a team is being set up, for example on construction sites, at events or during common activities. When the label is published, Stefan Beeg asks for a copy of the publication to be sent to the Department of Corporate Communications. The necessary files, a brief user's guide and answers to all your questions are also available from Corporate Communications. Just write to the following new mail address: cd@kaefer.com.

KAEFER acquires majority stake in British insulation specialist C & D

In mid 2007, KAEFER acquired 51% of the shares in C & D Industrial Services Ltd. based in Jarrow near Newcastle. The company has annual sales of €70m and 700 staff and is a strong player on the industrial insulation market in Britain. Insulation, scaffolding, painting and asbestos disposal are core areas of C & D's business. The majority investment is part of a systematic growth strategy in high-potential markets which KAEFER has been pursuing for many years.

The first major project acquired by KAEFER in a joint venture with C & D is the LNG Receiving Terminal and Regasification Unit South Hook in Milford Haven, South Wales. Extensive insulation work is being prepared and carried out on the project, which is worth some €30m and is due to be completed by mid 2008.

KAEFER intends to increase its stake in C & D in the years ahead. Growth potential exists in the power plant, marine shipping and oil and gas businesses. Cooperation discussions with KAEFER companies in Germany, France and Poland already started.

KAEFER is now number one on the interior finishing market in Hungary

From left to right, Robert Skrobisz, Zsolt Böröndy, Jósef Heibl, Peter Hoedemaker

KAEFER has had operations in Hungary since 1990 via its subsidiary KAEFER Építöpari Kft. In mid 2007 the company merged with Heibl Isoliertechnik in Izsak, Central Hungary (about 100km south of Budapest) to form KAEFER Heibl Isoliertechnik Kft.

Heibl operates on both industrial insulation and interior finishing markets. The company has recently been involved in building large shopping and entertainment centres such as Media Markt, Praktiker or the French supermarket chain Auchan. For its interior work on the Palace of Arts, the concert hall for the Hungarian Philharmonic Orchestra completed in 2005, Heibl received an award from the Hungarian Association of Interior Design. Last year the company reported sales of some €10m.

KAEFER Heibl Isoliertechnik intends to continue developing the interiors market and expand its industrial insulation activities. József Heibl und Zsolt Böröndy run the company together as joint Managing Directors.

Establishment of KAEFER Taiwan

KAEFER now has offices in Taiwan too, having set up KAEFER Insulation Technology Taiwan Co. Ltd in March 2007 in Taipeh. The company's operations essentially involve insulation work for LNG, nuclear and conventional power plants as well as for the chemical industry. The first major order has already been received: for supplying and installing cable ducts in the new Lungmen Nuclear Power Plant No. 4. The work will take around two years to complete.

G+H Schiffsausbau: successful integration within the KAEFER Group

By acquiring G+H Schiffsausbau GmbH in May 2007 the KAEFER Group has strengthened one of its traditional businesses and added outstanding expertise in cabinet making, decorative interior work and gas tanker insulation to its range of shipbuilding services. G+H Schiffsausbau now feels right at home at KAEFER and on 1 January 2008 the company is to be fully integrated into the KAEFER Group.

It is a gradual process. G+H and KAEFER had already worked together well on individual projects in the past; now the staff are working together in the same company. Management responsibility is shared between Hans-Jürgen Gefken, Heiko Habedank and Horst-Dieter Neumann. In future they and all 300 staff will also share the same name: the plan is that on 1 January 2008 KAEFER Schiffbau GmbH and G+H Schiffsausbau GmbH will combine to form KAEFER Schiffsausbau GmbH.

The companies are also integrating on an organisational level. In October 2007 the payroll accounting and the whole IT were switched from G+H to KAEFER. The G+H staff in Bremen are also moving in with their shipbuilding colleagues in the Getreidestraße in Bremen and the staff in Hamburg will move down the road to the KAEFER premises.

The alliance has already proved itself in practice. The five star luxury ship "Seabourn Pride" was in the Hamburg harbour for two weeks for renovation work. KAEFER and G+H were also on board, working hand in glove. Their job was to dismantle the cabins and public areas so that the pipes and air ducts behind could be repaired. Up to 40 fitters were on the site at peak times and the contract value amounted to around €400,000. Everything worked out perfectly – a great start to a long-term partnership.

Left: Jörn M. Fetköter, right: Horst-Dieter Neumann

KAEFER starts operations in Kazakhstan

Kazakhstan will be one of the promising markets for KAEFER in the next few years. One reason for that is the country's strong economic development. The gross domestic product grows by an average of 9 percent each year. The other reason is its abundance of oil reserves. One of the world's most important fields discovered in the last 30 years is Kashagan in the northern Caspian Sea. The field is being developed by the Italian company ENI, but many other industry heavyweights such as Shell, Total, ExxonMobil and ConocoPhillips are also involved. Total costs of development are expected to amount to as much as $135 billion.

To take full advantage of the opportunities offered by this former Soviet republic, KAEFER founded its subsidiary KAEFER LLP Kazakhstan in September 2007. First to occupy the new office in Atyrau was managing director Laszlo Mereg, supported by several office workers. Regional director Robert Skrobisz expects that KAEFER LLP Kazakhstan will employ several hundred people in relatively short time if the company participates successfully in the upcoming bidding processes. However, recruiting the required personnel is rather difficult because the local labour market has been exploited already and the Kazakh government limits the possibility of bringing in workers from abroad. For this reason, KAEFER currently plans to establish a training centre in Kazakhstan.

In addition to oil production, KAEFER will also pursue opportunities in the large number of upstream projects, where the processing takes place. Also, many other interesting commercial projects are being planned in the former capital Almaty and in the East of Kazakhstan. Services to be provided by KAEFER include insulation, corrosion protection, fire protection, and scaffolding. "Many of our clients are already operating in the country," explains Robert Skrobisz. KAEFER has arrived now, too.

Centre: Laszlo Mereg (Managing Director)
Left: Irina Flegentova (Business Development Manager)
Right: Tlekgul Mamakova (Assistant)

Corporate Service Centre India supports subsidiaries in the region and the headquarters

Peter Hoedemaker visiting the team in Delhi

KAEFER has been involved for many years in the Middle East, South East Asia and Australia, with growing success. As a result, not only directly project-related work is on the increase in the region, but also work at Group head office. To provide support for projects in the region, KAEFER Engineering India was set up in Delhi in 2006. Half of the office space was reserved for staff with head office functions. Since the beginning of July 2007, the Corporate Service Centre India has eleven specialists for Corporate IT, Corporate Communications, Corporate Technical Services and Corporate Controlling (Overseas Subsidiaries) in addition to the seven project staff for the Middle East.

The new staff first had an introductory course in Bremen. There they familiarised themselves with the way the head office works and built up useful networks. As of September 2007 they have been providing support both to head office and to our firms in the region from India. Their responsibilities include costing projects and preparing bids, technical support, quality and security management, IT, communications, controlling, health and safety and environmental management. The advantage for the KAEFER subsidiaries is that decisions are made quicker, reaction times are shorter and the services can be provided at a price level appropriate for the region, making them competitive.

KAEFER-Team in Mexico is growing and moving into new offices

From left to right Erasmo Chavero (Supervisor), Arturo Echeverria (ROLAN), Francisca Gorgodian (President of the Board), Luis Ortiz (Managing Director), Christoph Rottenwoehrer (Regional Director Southern Europe & Mexico).

The history of the KAEFER Group does not recount very many start-ups. One of the few is KAEFER Aislamientos in Mexico – a young company which has not stopped growing since it was founded in 2004. The joint venture between KAEFER and ROLAN Aislantes Minerales, the largest regional supplier of insulating materials, started life as a one-man operation. But in the following years business grew so rapidly that the company now has a full-time staff of ten. Until mid 2007 KAEFER Aislamientos lodged in the premises of the Mexican partner company and received a great deal of support from them. Finally, however, the time came to move out.

The new offices were opened on 28 July 2007 by Christoph Rottenwöhrer (Regional Director Southern Europe), Arturo Echeverría (Supervisory Board member of KAEFER Aislamientos and owner of ROLAN) as well as Francisca Gorgodian (Supervisory Board Chair of KAEFER Aislamientos) in the presence of all the staff at KAEFER Aislamientos and the ROLAN team.

KAEFER Mexico mainly works on refineries, power stations, chemical factories and offshore oil rigs. Its most important business areas are thermal insulation and fireproofing. This is due to be expanded to include corrosion protection and architectural services for offshore platforms.

KAEFER Spain: moving to new offices

KAEFER Spain is changing – the founding generation is gradually being replaced by younger colleagues with the same excellent technical skills. To make the succession process visible for clients and partners outside the company, the Spanish headquarters are moving to new offices.

This marks the realisation of a long-held dream, because the headquarters are moving into a new office building with spacious and well-lit rooms and large windows. It is located in a fast-growing industrial area of Bilbao and its glass front offers a beautiful view of the neighbouring Nervion river.

Around 30 KAEFER staff work on three floors with a total surface area of 450 sq m. As the offices are open-plan, particular attention was paid to the acoustics and only the highest-quality materials were used. Of course the acoustics systems were planned, fitted and inspected by our own experienced specialists.

The move to the new offices took place in October 2007. The KAEFER employees like to see that the vitality of their international company is reflected in the modern design and pleasant working atmosphere of the new premises. The old offices in Bilbao are situated in a building belonging to KAEFER and are now being refurbished before the staff of the KAEFER branch office in Bilbao move in.

Experienced HSEQ manager appointed by KAEFER IKM Norge

KAEFER IKM Norge has appointed Jan Inge Johnsen to the position of HSEQ manager (health, safety, environment and quality), relying on his extensive experience from previous positions at Rosenberg Verft and Aker Kværner. His most recent major project was Snøhvit, the world's northernmost liquefied natural gas operation, which is located in the Barents Sea. The Snøhvit project has been a collaboration between Aker Kværner Stord, KAEFER IKM and Rosenberg Verft, and Johnsen has been the responsible HSEQ manager for all three firms.

Snøhvit's five-year construction process involved some major challenges, particularly in view of the fact that 45 nationalities were represented and more than 10,000 people participated in the construction activities during the most hectic period. Snow and strong winds contributed to the difficulties. Despite these challenges, the project can now look back on excellent HSEQ results, with a lost time injury frequency (LTIF) of only 0.5.

Jan Inge Johnsen's first priority now is to become familiarised with existing projects and to take part in planning future projects. He is convinced that his own experience, but also the experience that managers and operators have accumulated, will be of great benefit, and that KAEFER will be viewed as a highly professional organisation and a preferred partner for many customers.

Johnsen says that he is very proud to be part of the KAEFER organisation and that he is looking forward to many exciting years in the industry.

Jan Inge Johnsen

Support for KAEFER Estonia

Karmo Pajo, a specialist in HVAC technology, joined the Estonian team at KAEFER Isolatsioonitehnika OÜ led by Aivo Andrekson in March 2007. Pajo was previously Technology Manager in the insulation department of a large Estonian company.

This summer KAEFER Estonia also moved into new offices to drive its expansion in the country and establish a sound base for future growth. KAEFER Isolatsioonitehnika is a subsidiary of KAEFER Finland and works on a wide range of shipping and industrial projects.

From left to right Aivo Andrekson, Karmo Pajo, Mrs. Andrekson und Markku Tammi

Australian operations restructured to meet high demands

The natural resource boom and the resulting labour shortage in the Australian market have caused KAEFER Australia to restructure its operations significantly. Under managing director Justin Cooper the company has been reorganised to empower its middle management. This has resulted in the state managers taking on more responsibility for activities involving their state. It also allows middle management to be involved in the overall business, which has led to an increase in business activity around the nation.

In the corporate head office, Victor Bogos has taken on the role of corporate secretary and has established a successful business support team covering administration, accounts and payroll. All services interact efficiently with each other and with all our site offices around Australia.

Adalbert Kruza as commercial manager has successfully negotiated better terms and conditions on various projects, allowing us to change contractual conditions and rates for the benefit of improved margins.

The top management is further supported by a strong operations and administration team at headquarters and in each state. As a result, the company has been moving forward in 2007 at a remarkable pace and has experienced unprecedented growth.

Mariano Santiago Pugés appointed Managing Director of KAEFER Aerospace Spain

Mariano Santiago Pugés

On 1 December 2006 Mariano Santiago Pugés became Managing Director of KAEFER Aerospace Spain S. L.

The engineering and business studies graduate brings over 20 years experience of the aerospace industry to the company.

Señor Pugés was responsible from 1989 to 1993 for the development, organisation and integration of a new division as Business Development Director of Grupo Inversia. After holding positions at various aeronautical companies, the Spaniard was responsible for business development at the aerospace company Synited from 2004-2006, with a particular focus on the relationship with Airbus and EADS-CASA.

Following his successful landing at KAEFER Aerospace Mariano Santiago Pugés and his team are now based at the KAEFER complex in Seville. From there he coordinates the different programmes and is responsible for business development and acquiring new orders.

We extend a very warm welcome to Señor Pugés and wish him good luck and all the best in his new job!

Change at the top at IZOKOR

In the summer of 2007 Robert Skrobisz succeeded Ryszard Borkowski as Chairman of the Management Board of IZOKOR. Borkowski was appointed to the company's Supervisory Board where he is now Chairman and also manages a new training company in Plock. In addition to IZOKOR Robert Skrobisz also heads TERMOIZOLACJA.

Interiors specialist for IPPOKAMPOS

From left to right Andreas Stamatiou (Controller), Nikolaos Amiradakis (General Manager), Vassili Tsioutsioulis (Deputy General Manager), George Amiradakis (Technical Manager)

Vassili Tsioutsioulis was appointed Deputy General Manager of our shipbuilding subsidiary IPPOKAMPOS on 1 August 2007. The Greek specialist for interior design and finishing for luxury and mega-yachts has been majority-owned by KAEFER since March 2006. Vassili Tsioutsioulis has over 20 years experience in interiors and has held numerous key positions in sales and marketing, construction, project management and general management. Before moving to KAEFER he was General Manager of the Interiors Division of façade and construction specialist Permasteelisa (UK).

Vassili Tsioutsioulis studied Industrial Design and Engineering in France and speaks fluent English and French in addition to his native Greek.

Construction specialist for KAEFER Indonesia

KAEFER is growing in Indonesia and has established a joint venture there with PT KRAZU Nusantara, a leading local insulation contractor. The JV goes under the name PT KAEFER KRAZU and provides insulation and sound proofing, fire protection and painting and is also intended to gain a foothold in international markets.

Franklyn Rapindo Bonata Hutagalung was appointed Managing Director of the new entity as of 1 May 2007. The architect began his professional career in a property development and construction firm. He worked for ten years at one of the leading property developers in Indonesia, initially in Business Development, then as project manager and finally as Deputy Head of Planning and Design.

Before moving to the KAEFER Group, he was the managing director of a group company that manufactures pipes for oil and gas industry, which also supplies insulation material for the industries.

Franklyn Rapindo Bonata Hutagalung

Pierre Vicard: Managing Director of OLUTEX FRANCE SAS

As of 1 September 2007 Pierre Vicard is Managing Director of OLUTEX FRANCE SAS, a wholly-owned subsidiary of KAEFER Aerospace GmbH. He has over 20 years of experience in the aerospace industry and has held various international positions in sales, contracting and joint ventures. Most recently he was Marketing Director at Rockwell Collins, a supplier of electronics and communications systems to the aerospace industry. There the 43 year old was responsible for sales systems, market development and key account management.

Monsieur Vicard will be managing KAEFER Aerospace's business in France from his office in Toulouse. He is in direct contact with Airbus France and will develop the company's business in France in cooperation with his German and Spanish colleagues.

We extend a very warm welcome to Pierre Vicard and wish him good luck and all the best in his new job!

Pierre Vicard

TERMOIZOLACJA: an anniversary celebration for all the family

A great party, with bouncy castle, bungee jumping and a different kind of insulation fitter

Our Polish company TERMOIZOLACJA celebrated its 60th anniversary in 2007 and the Management Board marked the occasion by inviting all the staff and their families to a big party on Father's Day, which in Poland falls in the middle of June. The weather was perfect and more than 660 people enjoyed the opportunity to have a party and a bit of fun.

For the kids there was a bouncy castle, lots of games, pony riding, a climbing wall, toy-cars and lots of other great events. The adults could test their courage and try bungee jumping or bull-riding rodeo style. There was a children's paradise with painting and toys and the fathers had also prepared an exhibition where they showed their children what their workplace looks like.

For the adults there was also cabaret and karaoke and of course a huge picnic. The party began at 1 o'clock and finished at around 10 in the evening.

The official anniversary celebration took place at the end of September, with TERMOIZOLACJA's customers and business partners. TERMOIZOLACJA staff member Jan Zientek received an award for 50 years of loyal service to the firm and MD Robert Skrobisz accepted a prize from the Polish Chamber of Power Industry and Environmental Protection on behalf of the whole company.

A reason to celebrate: 30 years of KAEFER Finland

The staff of KAEFER Finland have contributed their skills and experience to nearly all the giant ships built at the Aker shipyards in Turku, from the superlative ferries "Color Magic" and "Color Fantasy" to super luxury liners like those of the "Freedom" or "Genesis" class. KAEFER has been in Finland for 30 years now, and has never stopped growing. The anniversary was celebrated in August in typical Finnish style, with traditional food, outdoor games and a sauna, followed by a swim in the lake.

Markku Tammi, head of KAEFER Eristystekniikka Oy, recalled how he had co-founded the company 30 years ago. He was also able to share the news with the 40 KAEFER staff present that Aker shipyards had awarded more large contracts to KAEFER Finland. For the second ship of the "Genesis" series the solarium and central park were awarded to KAEFER. Project managers Kristina Ketola, Markku Virtanen und Jarmo Ikonen are delighted, as the orders will provide work until 2010.

Markku Tammi underlined how KAEFER Finland had developed over its 30 year existence from simply insulating ships to being a system provider for entire units such as solariums, spas and restaurants.

KAEFER starts operations in North West Russia

Since the KAEFER subsidiary Visman AS acquired the Norwegian Chriger AS in early 2007, their attention has been increasingly drawn to Northwestern Russia. Chriger had already developed substantial operations in Murmansk, which are now to be expanded.

Visman works with Reinertsen AS in the Murmansk region, sharing factory space and machinery to produce fire protection for steel constructions. Visman is also involved in projects for the Norwegian oil industry, for example in the oil and gas fields at Tyrihans and Heimdal.

Business is primarily centred around passive fire protection, especially the manufacture of "Chartek VII" fireproof coatings. As the local clients want to be served by local staff, Visman has started training programmes for Russian fitters. Currently there are eight Norwegian specialists working in Murmansk. In future most of the work is due to be carried out by Russian staff under instructions from Visman management.

The Russian market holds considerable potential, especially the development of the Shtokman gas field in the Barent Sea around 550km north east of Murmansk.

"Chartek VII" fireproof coating for steel constructions

Cool: LNG competence centre is growing, and the market is dynamic

LNG (Liquefied Natural Gas) is the term for natural gas which has been cooled to -163°C, making it liquid. It is ideal for transport and storage purposes as it only takes up 1/600th of the volume of natural gas. LNG's importance as a source of energy continues to grow, and has become so vital to KAEFER's business that the competence centre of excellence L (Liquid Gas) has been created specifically for this sector.

KAEFER's experience of the LNG sector goes back to 1971, when the company won its first major order in the liquid gas tanker industry. Very thick insulation panels were used to stop liquid gas held in spherical tanks on board special ships from 'evaporating'. These were later supplemented by piping and containers for land-based plants. Here too, very low-temperature insulation (cryogenic insulation) with special insulating materials were used. Cryogenic insulation requires particular care when installing the 'vapour barriers', which prevent dampness from penetrating the insulation.

In 2003 KAEFER was awarded what was and still is the largest ever single contract in the firm's history. The Statoil Group from Norway placed orders with the Norwegian joint venture Aker Kværner/KAEFER for corrosion protection and insulation work as well as scaffolding and weatherproofing on the Snøhvit project, a gas liquefaction plant in Hammerfest, north of the Arctic Circle. Total order volume by the end of the project was over €400m.

Snøhvit was a superlative project right from the start. It was the largest ever industrial insulation project for KAEFER at the time and involved managing up to 2,000 on-site construction workers. The working conditions were extreme – freezing temperatures, gusting winds, long periods of darkness and an exceptionally remote location. The site logistics also had to be adapted to meet these demands. The plant is now fully operational thanks to the outstanding team spirit of specialists from 45 different countries.

In 2003 KAEFER set up the competence centre L (Liquid Gas) in what is now the NLC division (then Export), with Henry Kohlstruk from Bremen as its head. This proved to be a sound strategic decision, as many orders for LNG plants have since been won from around the world. KAEFER is currently working on plants in Australia, Canada, Spain, Italy, Britain, Qatar, India, Indonesia, Yemen and China and is involved in more than half of all LNG insulation projects underway worldwide.

Top performance: KAEFER Thailand, Malaysia and Vietnam post excellent results

Following its success in 2006, KAEFER Thailand has now been recognised for the second time for its outstanding performance. At the IMM 2007 the KAEFER staff in Thailand and Vietnam received the award for "International Exceptional Performance 2006". At the previous year's meeting KAEFER Thailand was also awarded a prize – for the best international development of a KAEFER overseas organisation and KAEFER Malaysia was awarded the prize for best international turnaround.

With revenues of almost €20m, the year 2006 was the most successful in the history of KAEFER Thailand to date. The largest ever single order was also received in the same period: for extensive insulation and scaffolding work on the Alcan Gove Aluminium Refinery, which was successfully completed in April 2007. The work was carried out in Thailand, Malaysia und Vietnam and the modules then transported by ship to Australia.

In addition to the Alcan project, KAEFER Thailand also carried out a number of projects for the domestic chemical and petrochemical industries, including insulation and scaffolding.

KAEFER Vietnam also recorded high revenues. As well as the work on the Alcan G3 project, the company also completed a large order for the national energy industry. Insulation work was also carried out on a cement factory in Vietnam and important orders were delivered for refractory materials.

In the South-East Asia region KAEFER Malaysia had a fairly quiet year. This was mainly due to the fact that some large projects were rescheduled. Nevertheless KAEFER Malaysia has outstanding orders of €8m and looks to the future with confidence.

These recent achievements are a key milestone for KAEFER Thailand, KAEFER Malaysia and KAEFER Vietnam, and Sajid Bhombal, Naveen Kad and R. S. Yadav, respective country managers are rightly optimistic for the future.

Shipping construction modules insulated by KAEFER Thailand for the Alcan Gove aluminium refinery.

Improving the world's climate – and the bottom line

It is always nice to be altruistic and do something for yourself at the same time. So KAEFER Construction in Norway is helping its clients to ease the strains on the world's climate while cutting their energy costs significantly. The company offers an energy appraisal service for industrial plants as well as for commercial buildings, and it gets results: The payback on investments arrives usually within just a few months, as regional director Bjørn Paulsrud explains.

"Improving insulation is a very efficient way to save costs", says Paulsrud. "It's simple and it's cheap." KAEFER Construction in cooperation with partners does not only work on insulation, though, but offers a complete set of measures to optimise the energy bill. This starts with an assessment of the current situation to determine strengths and weaknesses in the energy-"consuming" systems. The KAEFER team then identifies and proposes energy-saving projects, reducing the emission of CO_2 and NO_x at the same time. These environmental benefits also help to provide funds for projects: Government programmes often support measures that address emission problems. KAEFER Construction knows where to find these funds in Norway and assists with the application process.

Once the measures have been defined and backed up financially, KAEFER also helps to implement the plan. Among the most common tasks are changing steam boilers or heat exchangers and upgrading pipelines. A very important part of the upgrading is to plan and install proper insulation systems. According to Paulsrud, installing up-to-date equipment will make a huge difference in energy performance.

Finally, when everything is done, KAEFER also helps to analyse the results. Measuring success is not very difficult, though: Clients only have to compare their current energy bills to older ones.

Comparable energy appraisal services are not on the Norwegian market yet, says Paulsrud. For KAEFER Construction in Norway it is already an important line of business. With global warming looming ahead, it should grow even more in significance.

Prizes for TERMOIZOLACJA

Quality, environmental protection, European integration and social responsibility are four buzzwords which KAEFER's Polish affiliate TERMOIZOLACJA manages to bring to life. This was recently recognised by independent third parties, who awarded our KAEFER colleagues in Poland no fewer than three prizes.

From the Polish Committee for European Integration and the Business Centre Club TERMOIZOLACJA received the European Medal. This award is made every year to a company which promotes the idea of Europe and Poland's integration into the European economy. This year the medal was awarded for the 14th time.

TERMOIZOLACJA was recognised by the Polish Chamber of Power Industry and Environmental Protection for its outstanding long-term export performance. And the editors of the newspaper "Przglad Gospodarczy" gave TERMOIZOLACJA a prize for being the "most solid employer in Schlesia 2006".

GTZ partner with KAEFER Thermal in the KAEFER Aids Relief Programme (KARP)

From left to right Sister P. Holani (Sister at wellness clinic near Secunda), Steven Malete (KAEFER Safety Officer at the Secunda site), Dr. Lindiwe Mabuya-Ngwe (Doctor in charge at wellness clinic near Secunda), Lindiwe James (HIV/AIDS Co-ordinator KAEFER Thermal)

KAEFER Thermal in South Africa is very pleased to welcome the gtz as a partner in the KARP programme. The gtz is an implementing agency of the German government, involved in developmental work.

In South Africa, only 20% of people who need Anti-Retroviral Treatment (ART) are currently receiving it. The Department of Health's target for 2011 is to increase this figure to 80%. It is unlikely that the government will achieve this without public/private partnerships.

Employees in the low-wage sector in South Africa generally do not have access to health insurance. Access to cheap or free state health care is often problematic due to infrastructure issues. This has a severe impact on HIV positive people in both the industry and particularly those in the employ of KAEFER. It is important to KAEFER that employees who are HIV positive are given correct information and advice and, when necessary, have access to appropriate and effective public sector treatment.

The partnership aims to achieve the following in the next three years:

> effectively implement the KARP programme in KAEFER Thermal;
> address the "case holding" issue, which is the process of ensuring that HIV positive employees are confidentially monitored and timeously referred for appropriate public sector treatment;
> facilitate and improve access to treatment within the public sector, by evaluating and (where necessary and possible) capacitating government and other facilities; and
> through a round table process, under the lead of SABCOHA (South African Business Coalition against HIV/Aids) and with other players, develop a model that can be used by other companies in the low-wage sector.

A team consisting of Pebetse Maleka from gtz as well as Lindiwe James and Colin Cane from KAEFER will be working on the programme.

Competence Centre Fire Protection is a national and international service provider for engineering and expertise

Fire protection is one of KAEFER's core competencies, and the Competence Centre Fire Protection (CCFP) of the Corporate Technical Services does everything possible to reinforce and extend this expertise. As this isn't just something to be done after lunch on a Friday, Thomas Heuermann and his team organised another fire protection day and have published the KAEFER Fire Protection Compendium.

The practical part of the Fire Protection Day – how to use a fire extinguisher properly

The very positive feedback from the first KAEFER Fire Protection Day in May 2006 made it clear that others would follow, to keep up to date with technical developments and facilitate networking. So this year the CCFP invited everyone to the Hamburg Fire Brigade School for the second KAEFER Fire Protection Day on 5 October 2007. Around 70 sales and project staff from the Industrial and Construction divisions took part, and for the first time business partners were invited as well.

There were interesting presentations on fire protection in ventilation equipment, fire protection in industrial buildings and the German Directive on Fire Protection for Wiring and Plumbing Systems (LAR), as well as an exhibition of new and innovative fire protection products from well-known suppliers. The day was rounded off by the Hamburg Fire Brigade, with facts and demonstrations of the correct behaviour in case of fire.

To ensure that everyone involved has rapid access to the most important information on fire protection in buildings, the CCFP has produced the KAEFER Fire Protection Compendium, which covers the entire subject from the principles of fire prevention to comparisons between different systems. The handbook is updated regularly and is intended to make sure that KAEFER staff are properly qualified and informed of all the latest technical developments.

The experts from the Competence Centre Fire Protection have mainly worked in Germany until now, but that is about to change. Systems that have been approved for use in Germany are to be installed abroad under the KAEFER label. To date the department has provided support services in developing new fire protection and insulation systems for offshore, shipbuilding and LNG applications, but has also worked on fire protection concepts for nuclear power plants. In future the services provided by will be more and more international in scope.

Without growth there's no cash, but without cash there's no growth either

If you want to save money with a new heating system, or earn more money with a new machine, you have to invest money. If you do it properly, that is followed by the 'return on investment', but only later. In the last five years KAEFER has almost doubled its sales, and that also needed to be financed in advance, so the capital required grew accordingly. Here we take a look at the sources of finance for such ambitious development.

Classical financing

Around half the capital required by an engineering company like KAEFER is used to pay for raw materials and staff expenses in advance. The classical solution is to go to the bank and borrow money, i.e. arrange more loans to cover the new orders and then pay interest on the debt.

The second chunk, roughly the same size, is used for bank guarantees. Bank guarantees are provided for fulfilment of contracts, for advance payments and finally for warranties. These 'aval guarantees', which are cheaper than loans, are provided not only by banks, but also by insurance companies, who guarantee the client that they will get their money even if the contractor can't pay.

Then there is the possibility of turning invoices into cash before they are due for payment by the client, which is called 'factoring' and involves selling these trade receivables to specialised banks. The banks pay straight away, so much earlier than the client would, but of course they take a cut for their service and for assuming the risk that some of the clients may default. The main advantage of this 'financial instrument' is that it doesn't count as borrowing. If the company were to run an overdraft instead until the client paid, this would not only cost interest but also reduce the scope for other borrowing.

Of course KAEFER has been using these classical instruments for a long time and always on very decent terms, by virtue of the

confidence it has built up over decades by being reliable and keeping its word. Even when times were more difficult and business wasn't so good, KAEFER always avoided giving its financial partners nasty surprises and stuck to its plans and forecasts – and this behaviour pays off.

"Investment Grade" and new types of financial instruments

However, the strong growth and especially the company acquisitions of recent years could not have been financed by these means alone. But the commercial success which came with the growth and the higher earnings meant that the company could finance more of its capital expenditure itself, which in turn entitled it to the status of "Investment Grade", i.e. a higher international credit rating. This 'promotion' gave it access to three attractive financial instruments which are not available to everyone:

ABS (Asset Backed Securities) are a high-tech sort of factoring, in which a large volume of receivables from different companies is packaged by financial services providers to form an structured blend of risks and sold to institutional investors. Lower discounts for risk mean that the proceeds for KAEFER are considerably higher.

Mezzanine capital is a special form of borrowing. It strengthens the balance sheet and improves the overall credit rating as it is treated like equity and lenders can only demand repayment when the company's financial position is healthy – otherwise they bear the same risk as shareholders.

The third and final instrument is a type of commercial paper known as open-market-credit. These are loans made not by a bank, but by a pool of institutional investors and documented by promissory notes. This direct access to the capital markets gives the company much greater latitude in raising capital, but is dependent on a number of conditions. In addition to the Investment Grade rating, the company's financial reporting must be of a high standard and certain financial ratios must be maintained.

These new possibilities have enabled KAEFER to increase its borrowing capacity by even more than its new businesses require, and the equity ratio has also been improved from 11% to over 20% – a comparatively impressive figure. KAEFER has invested steadily in developing its market position in recent years and this has created a strong foundation from which to progress to the next level. As we said at the beginning, it's all about investment and return, sowing and reaping. You can't reap without sowing, although people will always want to try.

New methods of vocational and professional training

KAEFER apprentices learn how to insulate wall ducts

The paths of apprentices and management trainees do not usually cross very often, but at KAEFER that has changed recently. The vocational training for insulation apprentices at KAEFER includes a special Fire Protection course run by Thomas Heuermann, head of the Competence Centre Fire Protection, in cooperation with Würth GmbH. Now the course is not only open to the apprentices but also to the management trainees undergoing training for work in the LNG sector. On 5 May 2007 they had a training day together, learned about the theory and practice of fire protection, handled different materials and practised applying fireproofing. Both groups also learnt a lot from the other's different experiences and ways of approaching things.

This is also the idea behind cross-mentoring. Since January 2007 KAEFER has been taking part in the Mentoring Programme run by bremer arbeit gmbh. Ralf König, Head of Corporate Human Resources Germany, is one of the mentors. There are also three 'mentees' from KAEFER, who are mentored for a year by someone from a different company. He or she helps them define career goals and work on their strengths and weaknesses. "The close contact between mentor and mentee is a great framework for personal development", says Ralf König. "Individual seminars aren't always as good."

New programmes for junior managers, middle and senior management

In the course of developing new management principles at KAEFER, the orientation and contents of the junior management programmes have been changed, in some cases quite considerably. From now on the new JLP (Junior Leadership Programme) will prepare junior managers for their future responsibilities. The JEP (Junior Executive Programme) is to be completely overhauled and adapted to the different target groups. Another programme for senior management is also in preparation. Engineering graduates are prepared for their future assignments with KITE (KAEFER International Training Programme for Engineers).

The new JLP has been adapted to the target groups and is designed especially for junior managers with little or no management experience, who are being coached for their first management post. JLP consists of four modules, which are closely coordinated by the trainers amongst themselves. One JLP course can have a maximum of 16 participants from KAEFER and runs for a maximum of twelve months. The first JLP year started in late October 2007.

The current JEP is not being abandoned but just undergoing some major alteration work. It is aimed at more experienced managers who are intended for positions of greater responsibility. It is due to begin in 2008, together with a programme for senior management currently being put together.

KITE is focused on junior technical managers, i.e. engineers. The KAEFER International Training Programme for Engineers replaces the two programmes IGET (International Graduate Engineer Trainee) and ETP (European Trainee Programme), which both ran in parallel. Both were also aimed at junior technical managers, but had different catchment areas and different durations. “We’ve smoothed out the differences and made the new KITE programme more pragmatic,” explains Alexander Lüder, HR Director of the KAEFER Group. In detail this means that KITE lasts for a total of 18 months, is aimed at technical graduates (FH, Bachelor or Dipl.-Ing.) and includes two obligatory stays abroad of up two six months each. The KITE trainees’ country of origin prepares the syllabus in coordination with Corporate Human Resources in Bremen and creates the subsequent management position. The first KITE year is due to start in 2008.

Living leadership! 22 commandments for KAEFER managers

‘Leadership at KAEFER’ is the title of the code of conduct describing the ground rules for managers within the company. Four chapters with a total of 22 principles lay down the leadership philosophy for the Group.

“Act as a leader”, “Be entrepreneurial”, “Promote a common spirit”, “Live your values” – four appeals to KAEFER managers which are more than just rhetoric. They are the leadership principles applicable to all levels of management and are intended to secure the company’s long-term commercial success.

The titles of the four chapters go straight to the point, and so do the 22 principles. “Lead by example”, is one, or “Challenge yourself and others”. It continues with “Take the initiative and foster creativity”, “Keep searching for better solutions” and “Keep it short and simple”. And of course the managers of an international company are expected to “Respect cultural differences” and “Take advantage of diversity”.

The idea for the Leadership Commandments came from a joint initiative by the Management Board and the Human Resources department of the KAEFER Group. “At the end of 2006 we sat down and asked the question, “What do we expect of a manager at KAEFER?” said Alexander Lüder, HR Director of the KAEFER Group. The senior group met several more times under the guidance of an external advisor and developed some initial ideas. These were then discussed with a group of junior managers and after a final polish the code of conduct was adopted.

The leadership principles have been published in a brochure and distributed to all the managers in the Group. Workshops will also take place on the topic, and there are already a number of suggestions on the Intranet on how managers can work with and apply the principles. “Leadership at KAEFER” is also the basis for all internal management training programmes.

KAEFER family day in Antwerp

Beautiful weather, a great atmosphere and everyone in a good mood: that just about sums up the family day organised jointly by KAEFER Netherlands and Belgium. Around 150 KAEFER employees and their families enjoyed a wonderful summer party at Hangar 29 in Antwerp, a former warehouse site on the Schelde River, which had been converted into a party location. Altogether there were more than 420 delighted guests. Different stalls offered food for all tastes: pizza, chips, hot dogs, the typical Dutch poffertjes and ice-cream. Of course the guests could also try their luck at a traditional tombola, where everyone could win a prize. There were loads of games for the kids, a magician and a labyrinth made of scaffolding pipes. A crane hoisted visitors 30m in the air where they had a great view of the Schelde River. General Manager Freddy Tulkens bid farewell to four members of staff at KAEFER Netherlands, who were taking retirement and thanked everyone involved for all their hard work.

The younger generation is also properly secured for climbing scaffolding

Pensioners' reunion 2007: her 90th birthday and a very special gift for Annelotte Koch

May Warden, alias Miss Sophie in the comedy Dinner for One, always celebrates her 90th birthday at New Year in very select company; on her own in fact. The senior KAEFER shareholder Annelotte Koch, on the other hand, celebrated her anniversary at the KAEFER pensioners' reunion with around 250 guests. It was a special day, with a special present: a total of €6,000 was collected for the KAEFER AIDS RELIEF FOUNDATION TRUST in South Africa.

Every other year KAEFER Germany invites its pensioners to a reunion in the restaurant "Strandlust" in Bremen-Vegesack. On 7 February 2007 some 250 former KAEFER employees came along, also to celebrate Annelotte Koch's 90th birthday. It was a wonderful afternoon with coffee and cakes, very much enjoyed by all present, especially as Ralf Koch greeted every guest personally and on behalf of his mother. The former employees certainly appreciated the gesture enormously. The respect for Annelotte Koch was tangible and pervaded the whole room at the "Strandlust". As soon as she entered all the guests stood up and applauded her to her seat. There were more standing ovations when she later left the room.

Jürgen Carstens, Chairman of the Combined Works Council, and Klaus Dworatzek, Deputy Chairman of the CWC, congratulated her on behalf of all KAEFER employees with a bouquet of flowers and an album in which all the present and former staff had written their birthday wishes.

They also presented her with a cheque for €5,000 for the KAEFER AIDS RELIEF FOUNDATION TRUST in South Africa. The collection had been organised by the Combined Works Council and had raised more than €3,600 from the staff of the KAEFER offices in Germany. A further €630 was contributed at the pensioners' reunion and the KAEFER Management Board rounded it up to €5,000. Annelotte Koch was so delighted by the donation and above all by the great solidarity of the KAEFER staff amongst one another, that she spontaneously contributed a further €1,000, making a total of €6,000 for the KARP trust.

Jürgen Carstens and Klaus Dworatzek present the cheque to Annelotte Koch

With the KAEFER AIDS RELIEF PROGRAMME (KARP) the company wants to provide the 700 employees in South Africa with information on HIV and AIDS via an HIV programme in the workplace. It covers advice, courses, distribution of condoms and free HIV tests. Anonymous tests have shown that at some KAEFER sites in South Africa one in four members of staff is infected with HIV.

Good for the environment and the wallet: software for eco-efficient insulation systems

Continually rising energy prices and ever louder debates about CO_2 emissions from industrial sites are ample proof that economy and ecology not only go together – they are virtually inseparable. Nevertheless, when energy intensive industrial facilities are being planned they are often based on obsolete parameters, or ones which do not take sufficient account of the potential for saving energy. This is something that KAEFER Corporate Technical Services and the Institute for Environmental and Biological Technology at Bremen University want to change.

Since autumn 2007 the two partners have been working on a research project known as "Eco:In – eco-efficient insulation systems", to develop software for simulating and optimising industrial insulation systems under defined economic and ecological conditions. A programme will be developed which uses calculation and simulation models to demonstrate the financial and ecological benefits of optimised insulation systems which are adapted to the underlying processes. The return on investment is to be included in the simulation as well as fluctuations in the energy price and the market rate for carbon credits. Ultimately the software should enable industrial clients to select the best insulation before building the plant and thereby save energy and money.

Aerogels: insulating material of the future?

A flower lies on a piece of aerogel and is heated with a Bunsen burner.

They have even made it into the Guinness Book of Records, with 15 entries: aerogels. The highly porous silicabased solids are considered to be the best insulator and the lightest solid material, or the solid material with the lowest density. Aerogels could become the insulating material of the future. Advances are above all expected in the field of high and low temperature insulation.

The Team of KAEFER Corporate Technical Services is very enthusiastic about the material. "Aerogels are the product of nano-research. The pores in the material are as small as that would suggest." Aerogels consist predominantly of air, only 1-15% of the material is made up of solids. Because its pores are so small, the inner surface area of just one gram of aerogel can be up to 1,000 square metres in size.

The material already exists, but the technology for enabling its use in insulation and installation systems still has a long way to go. That's why KAEFER is in close talks with the market leaders for aerogels in the USA. The plan is to develop workable insulating materials jointly with Aspen Aerogels and Cabot Nanogel. The key is that the material must conform to certain specifications.

Aerogels' future is considered primarily to be as an insulating material in the area of LNG. There is still quite a bit of work to do on cryogenic insulation in this area, but the material would also be suitable as insulation in many other fields.

Strong silent type required: anchor handling tug supply vessels need to quieten down

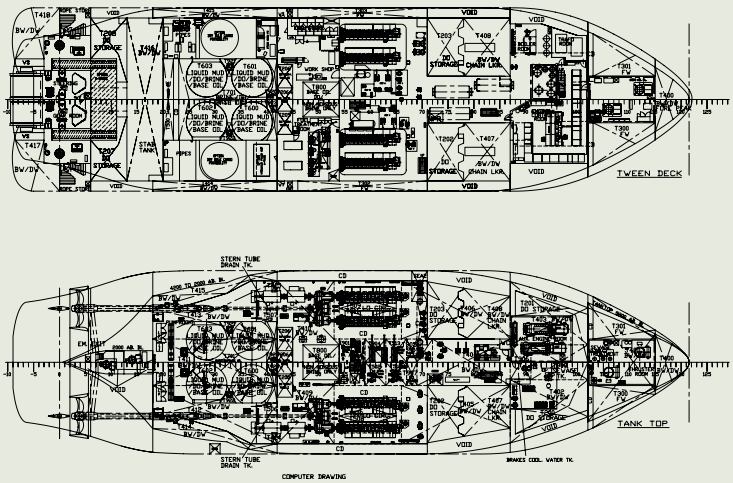
Relocating oil rigs, recovering anchor chains, manoeuvring ahead, astern or sideways in heavy seas and staying on the same spot despite the strongest wind and waves are tricky jobs and just the sort of thing for the six anchor handling tug supply (AHTS) vessels being built over the next three years at the Volkswerft shipyard in Stralsund. These specialised ships are strong and agile and valued for their extraordinary manoeuvrability.

They achieve this by having unusually powerful propellers, thrusters and engines for their size, but still have to comply with the highest noise and vibration protection standards. A typical assignment for the Corporate Technical Services / Acoustics (CTA) department in Bremen, which had already planned the noise protection measures for the previous generation of these specialised vessels.

This time, CTA had to meet even higher specifications, however. CTA department head Hans-Joachim Rennecke explains, “There have been major alterations to the thrusters on the new ships. They now have a second bow thruster instead of a so-called Azimuth thruster. This means that vibrations and noise levels go up considerably.” They are not allowed to go beyond the strict limits set by the Danish Maritime Authority, however.

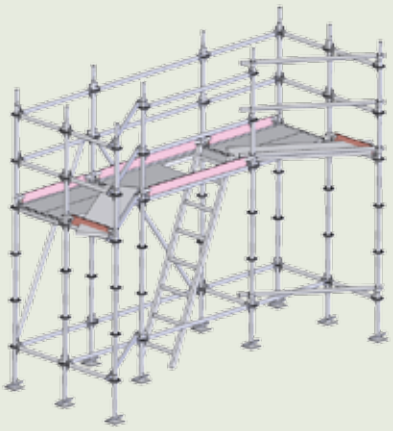
CTA and the shipyard therefore acted early: a nautical acoustics seminar was organised a year before the keel-laying, bringing together shipbuilders and acoustics experts. Long before construction was due to start, the KAEFER specialists also prepared a forecast for the sound waves and vibrations to be expected under certain operating conditions. Finally they developed an extensive programme of secondary measures to reduce engine noise and vibrations to the permitted level, working with thruster technicians, shipbuilders and external experts. The steps included installing large quantities of noise protection material in the relevant areas of the bow, sound insulation for all the sound transmission paths and in the mess, the on-board hospital and the cabin areas. Strong elastic floors, perforated ceilings and mineral wool cladding were installed, the shower areas in the bathrooms were fitted on flexible mountings and the first deck of the living quarters was specially treated. With these steps we’re confident of staying within the permitted limits, says Rennecke.

Construction plans for the anchor handling tug supply (AHTS) vessel built at the Volkswerft in Stralsund



CEKW system offers greater scaffolding safety

Falling from scaffolding is one of the most frequent causes of accidents at work capable of ending in serious injuries or even fatally, according to European Union statistics. Thomas Grenier, Ingénieur Structure for the Northern region at KAEFER WANNER has developed a computer programme to reduce the risk of accidents like this at work.



Many industrial and construction jobs cannot be carried out without scaffolding. So the risk of someone falling is always going to be there. But the figures really are sobering: in France alone some 10% of all fatal working accidents occur on scaffolding. The government has now responded and tightened the regulations governing scaffolding work.

These developments encouraged Thomas Grenier, Ingénieur Structure for the Northern region at KAEFER WANNER, to develop a computer programme with a special user interface to make scaffolding work in France safer. The unique system, which he developed in 2005-2006, is called CEKW (Concept Echaf KAEFER WANNER) and enables virtual scaffolding to be built in 3D, produces construction plans for the scaffolders and calculates the stability of the framework, the order of construction and the amount of material required. CEKW has a number of advantages. It helps the site managers to plan and prepare the scaffolding and reduces the planning costs. It can also be used for all types of material and allows changes to be made at short notice. Finally CEKW increases KAEFER WANNER’s scaffolding expertise and ensures that the regulations are adhered to. Thanks to Thomas Grenier and his team for their work on developing this scaffolding tool!

Versatile climate chamber available for use by KAEFER companies

It takes strong materials to perform reliably under the harsh conditions that many KAEFER products face. To guarantee this top-level quality, a new climate chamber that surpasses the testing performance of standard systems of its kind is now available for use. Its prime strengths are the combination of temperature, humidity and pressure changes in one test and its extraordinary temperature range.

KAEFER products have to live up to the highest standards: They are used under water, in the sky, in deserts, and in perpetual ice. In case of failure, not only large amounts of money are at risk, but also human lives. That is why our products are tested as thoroughly as conceivable before they enter the market. And our experts receive all equipment they need to make sure that nothing can go wrong.

The newest major investment in this regard is a climate chamber that exceeds the abilities of conventional climate chambers by far. The temperature ranges from +120 degrees Celsius to -75 degrees. Most climate chambers only provide low temperatures up to -50 degrees Celsius. Another advantage is the equipment's ability to simulate temperature, humidity and pressure at the same time. This combination is made possible by a

The KAEFER climate chamber – ventilation ducts being prepared for testing

special arrangement of machines that were assembled by the KAEFER employees at the labs in Bremen. In addition to the climate chamber, the system includes a compressor and an adsorption dehumidifier, among other tools. Being able to adjust humidity is particularly important: If the amount of water in the air is not adjusted properly, the parts that are being tested can ice up or collect water inside.

At 15 cubic metres, the climate chamber provides enough room to test large components or many smaller parts at the same time. Speed is an important factor, since many parts need to prove that they can stand years of use under extreme conditions. For example, to simulate the lifetime of an airplane part, the component has to prove its toughness in the course of up to 240,000 cycles of pressure changes. That procedure can last almost a month.

Not only the parts must be ready for this performance, but also the climate chamber itself. Its ability to simulate the most diverse conditions is one important requirement – another one is the option to do it fast and very precisely. To speed up the testing, the system can apply exact pressures with an accuracy of 2 millibar within seconds. KAEFER scientists keep fine-tuning the controls to further improve the results.

All tests are documented automatically and in much detail by the system. The sensors being used for this purpose are calibrated by an official certification agency, guaranteeing precise results.

The climate chamber, which was installed in May, is currently being used to test over 70 components of the air-conditioning system for the new military transport aircraft A400M. These tests will last for about six months. After that, the chamber will be available for use by other KAEFER Group companies or external partners.

Light and good: new technologies in shipbuilding

Since the end of 2007 KAEFER has been investigating opportunities for using lightweight components in shipbuilding in collaboration with Thyssen Nordseewerken in Emden, BIK (Bremen Institute for Engineering Design) and the Fraunhofer-Institut für Fertigungstechnik und Angewandte Materialforschung (IFAM) in Bremen. “Shipbuilding structures should be optimised for acoustics and weight”, says Dr Holger Cartsburg, Head of Corporate Technical Services at KAEFER.

Technology transfer is at the heart of the project. “We want to bring automotive and aeronautical technologies into shipbuilding”, explains Cartsburg.

In 2008 and 2009 two so-called twin-hull boats are to be built using the SWATH principle. SWATH stands for Small Waterplane Area Twin Hull. Its low weight and correspondingly small waterplane area make this boat type particularly stable. At the same time it presents a number of acoustic challenges, however. “The ships mustn’t be too heavy, but still have to meet high acoustic specifications”, the KAEFER expert explains. The assignment is now to be solved in interdisciplinary, intercompany project groups.

KAEFER WANNER: fire protection expertise to be expanded

Fire protection has always been an important topic at KAEFER WANNER. For three years now there has been a special department run by Fabrice Tinardon to develop fire protection solutions.

The PFP team (Passive Fire Protection) is led by Fabrice Tinardon and operates above all in the industrial, nuclear and construction sectors. The focus is on general industrial, for example the chemical and petrochemical industries. The procedure for qualifying KAEFER WANNER’s fire protection system for the nuclear industry is currently underway. The system concentrates primarily on fire protection for piping and wiring. In the construction sector developing fire protection for tunnels is a priority, as is the installation of fire protection systems for doors, walls and ceilings.

Fabrice Tinardon and his staff are called on when particular fire protection problems crop up and they develop solutions. They form a sort of back office, where know-how is systematically applied and continually developed. They also pass on their knowledge to other KAEFER WANNER staff.

One example of PFP’s assignments is their work for Smurfit Kappa, one of the most successful groups worldwide in the paper packaging industry. KAEFER WANNER carried out the fire protection for wiring and piping in one of their factories in south west France, using the proprietary “WANNIFLAM” product. As applying the product the normal way would have been very time-consuming, the PFP team developed a pump which made it much easier and faster.

Another example is the nuclear processing plant in La Hague, where the ceilings were replaced and fitted with special fireproofing. Tinardon and his team provided advice and support to the client.

Long-term relationship thrives between KAEFER and Alcan

Alcan Gove aluminium refinery in Northern Territory, Australia

A long and prosperous relationship has developed between KAEFER Integrated Services Pty Ltd and the Alcan Gove Mine and Refinery in Australia's Northern Territory. Alcan Gove is a bauxite mining operation with a refinery to process the bauxite into aluminum powder for export. The site has been operational for 35 years and recently completed its third upgrade.

KAEFER Integrated Services first got involved as a subcontractor and remained in this position throughout the 1990's with Nabalco as the client in Gove. We were predominantly an insulation contractor that assisted in sheet metal and cladding repairs. A strategic maintenance contract was initiated on January 1, 2000, when the client decided not to continue with a principal contractor and to manage contractors themselves. KAEFER successfully tendered for the insulation and access component of the contract. It became the largest maintenance contract in Australia. Alcan Inc. bought the mine and refinery in 2002 and kept the current site contractors in place.

KAEFER is responsible for insulation and cladding works, asbestos removal, roof and wall sheeting, scaffolding, and elevated work platforms. The contract is purely a maintenance contract, involving routine tasks and a number of major maintenance and capital works projects. It is based on an alliance between KAEFER and the client; only three contractors have an alliance agreement of this kind. The contract facilitates open communication between the client and KAEFER and ensures that all contractual concerns are transparent.

KAEFER operations in Gove has expanded continuously to keep up with an increased workload.

Australian team honoured for commitment to safety and environment

The Northwest Shelf Project (NWS) is Australia's largest resource development project at this time. It is rapidly expanding to meet the world's growing demand for natural gas. Expansion of the existing liquefied natural gas (LNG) processing facilities has continued with the fifth LNG train and KAEFER's most voluminous project in Australia so far.

The NWS Project involves the extraction and transport of natural gas and condensate by pipelines from offshore gas fields to the onshore gas treatment plant on the Burrup Peninsula near Karratha, Western Australia. This gas is used to supply the domestic market as well as East Asian countries such as Japan, Korea and China. The project also produces LPG, crude oil and condensate, primarily for export.

The Phase V Expansion Project is valued at approximately $2.6 billion. KAEFER Integrated Services' involvement in this project commenced in Feburary 2006 in Batam, Indoneasia. After the successful completion of the Batam Phase of the Project, finishing the insulation on time on the modules KAEFER followed up with onsite works in November 2006 at the onshore gas treatment plant. KAEFER is expected to complete the contract requirements by March 2008. First cargoes from the Phase V project are anticipated by the fourth quarter of 2008. Train V will be capable of producing an additional 4.4 million tonnes of LNG per year.

To date, KAEFER's contract to the Train V expansion project represents Australia's single largest project. Services provided onsite include hot/cold insulation, sheet metal work and subcontractor control over painting and scaffold services. The peak production crew is expected to be approximately 300 strong.

KAEFER's attitude and commitment to Health, Safety and Environment (HSE) has been recognised onsite with the award of "Phase V Contractor of the Month" in May, June, July, September and October 2007. Continued strong performance on this project puts KAEFER in a good position for upcoming projects, including the $12 billion Pluto Project.

KAEFER Thermal South Africa provides acoustic panels for Gautrain

KAEFER has successfully completed a contract awarded by the Bombela Consortium, the main contractors for South Africa's ambitious construction project Gautrain. The project, expected to cost 2.4 billion euros, will provide an 80-kilometre mass transit railway system for Gauteng Province. It will link Johannesburg, Pretoria (Tshwane), OR Tambo International Airport and Sandton. There will be three anchor and seven other stations in the system.

At Rosebank station, Johannesburg, KAEFER's task was the fabrication and installation of acoustic deflection panels for noise insulation. This was the first project of its kind to be undertaken in South Africa and KAEFER was the first company to supply this type of acoustical product to the consortium.

Construction of the Rosebank railway station and shafts takes place in close proximity to residential areas, which causes a special need for acoustic hoarding. The KAEFER team researched and developed a panel to reduce the construction noise emitted to the neighbourhood by 10 to 30 decibels as requested by Bombela.

The panels are 2.1 metres wide and either 3 or 5 metres high. Powder-coated sheeting materials were used on the outside skin, while polyurethane foam was injected into the cavity. The panels were submitted to the South African Bureau of Standards (SABS) for approval and passed a sound test in compliance with SABS ISO 140-3:1995.

Preparing noise protection walls for installation

In addition to the manufacture, KAEFER also carried out the erection programme successfully. The entire Gautrain project is supposed to be completed in time for the soccer world cup in 2010.

More maintenance work from utility giant ESKOM

After protracted negotiations with ESKOM, South Africa's premier power supplier and one of the top seven utilities in the world, KAEFER has been awarded insulation, painting and scaffolding maintenance contracts for four coal fired power stations in June 2007. Each station produces approximately 3500 megawatts. This has increased the number of stations serviced by KAEFER from one to four and accounts for 35 percent of the coal-fired boiler maintenance market.

The successful bid is a result of the tremendous effort put in by all KAEFER personnel over the last 18 months. The contract is valid for a three-year term with an option to renew for another two years. The power stations are Tutuka near Standerton, Majuba near Volksrus, Kendal near Witbank and Matimba near Ellisrus.

KAEFER provides each station with a base maintenance crew of 30 people to handle all ongoing day-to-day repairs. In addition, KAEFER serves all requirements for statutory general outages where inspections and planned work is scheduled. This can entail erecting up to 800 tonnes of scaffolding and boosting the crew up to 350 people for the six-week shutdown period.

KAEFER increasingly busy in Saudi Arabia

Economic growth had been stagnant in Saudi Arabia for a long time, but the recent oil price rises have boosted the economy, resulting in an unprecedented boom. For the oil and gas sector investment of more than US$250 billion is planned in the next five years alone, and KAEFER intends to take its share. To make that possible, KAEFER has entered into a joint venture with the Saudi NESMA Group. The first order duly came from NESMA & Partners, for 75,000 sq m of hot and cold insulation on the Petro-Rabigh project on the Red Sea. The project began in July 2007 and is due for completion in mid 2008. A second order has already been received, for thermal insulation at the Yensab project in Yanbu. The company has now set up a fully-equipped office in Al Khobar and found the right staff. KAEFER's international clients are delighted to see our familiar, reliable faces in Saudi Arabia as well. Everything is set for some exciting business growth.

South-East Asia: success for refractory teams

In April 2004 KAEFER set up a new business for refractory in South-East Asia. The decision has paid off and created a host of new opportunities in Thailand, Vietnam and Malaysia. The core team, Department Head Sanjive Sethi and Operations Manager P.B. Sunil, is based in Thailand and serves the whole region from there. A team was also established in Western India in June 2007 and can already point to considerable successes.

Fitters attach the fireproof cladding

Selecting service providers for refractory is often subject to very strict specifications, as a problem with the refractory can often shut down the whole plant. Clients will not trust a new supplier until they are completely convinced of its professional competence. KAEFER therefore offers potential clients advice and solutions for existing problems before any orders are placed, which gives our team in South-East Asia a head-start over the competition. The aim is to win sizeable maintenance contracts as well as to receive orders for new projects.

The team's first small order came from Thai Plastic Company. Business in Thailand took off rapidly as a result – customers such as IRPC, Thai Caprolactum and Thai Olefins all signed contracts for much larger projects. In the following years KAEFER Thailand developed the infrastructure for this business area and recruited more staff. By 2007 refractory revenues in Thailand already totalled several millions, and the prospects remain excellent. In the next two to three years business volume is set to grow by 30-35% per year.

The first project in Vietnam began in early 2005: refractory for a Danieli furnace. Within two months over 800 tonnes of material needed to be fitted. KAEFER Vietnam completed the project on schedule and secured a follow-on order. The following year KAEFER Vietnam won a tender run by Campha Cement against global competition from established suppliers.

KAEFER Malaysia signed the first maintenance contracts with OPTIMAL and Ethylene Malaysia in 2007, for a period of three years. The first work has already been completed and resulted in follow-on orders – clear evidence of the high level of customer satisfaction in South-East Asia.

In India KAEFER has successfully taken on a whole refractory team from an existing company. The new colleagues are fully trained and qualified. The department is led by Subatra Mitra, who knows the business in India well and brought new orders for KAEFER Punj Lloyd with him. By September new orders for 2007 had already reached US$ 1.5m. Customers include Larsen & Toubro, Vedanta, Videocon and Saint Gobain.

First phase of CAMFIL-FARR's open cycle gas turbine project completed

KAEFER Thermal has successfully completed the 1st phase of the Open Cycle Gas Turbine (OCGT) power project for CAMFIL-FARR, the global leader in air filter and air filtration solutions. The contract involved the insulation of a gas turbine exhaust system for seven units needed to meet peak power requirements. In total, this will provide an additional 1050 megawatts of power to the grid. This is the largest OCGT project worldwide.

The units were manufactured and insulated in the Johannesburg area before being transported to the two sites Mossel Bay and Atlantis in the Western Cape region of South Africa. Each unit requires 1000 square metres of insulation. Trevor Gamble, the KAEFER project manager, reported that "although there were a few problems encountered during the project, in the end through compromise and agreement all parties were able to claim success. So much so, that phase 2, a duplication of phase 1, has been awarded to the same companies".

An example of the logistical challenges faced was the transportation of all items by road for the 1,600-kilometre jour-

ney on 250 abnormal load vehicles with no incidents recorded. “This far exceeded CAMFILL-FARR’s expectations. In addition, this is also the first installation in the world where more than one unit has been installed at a site,” Gamble said.

The KAEFER contract included not only the stud and support welding, the insulation and the stainless protection lining application, but also the coordination of all subcontractors involved in the fabrication and delivery process. The total project value was around 7 million euros. Phase 2 started in March 2007 with the first unit being handed over successfully and on time. The lessons learnt in phase 1 will stand all parties in good stead.

KAEFER Shanghai insulates new industrial plant for Bayer

Quality, flexibility and value for money were the decisive factors for the chemical giant Bayer. The multinational awarded KAEFER Shanghai the contract for extensive insulation work at its chemical plant in Caojing. There, 50km south of Shanghai, one of the largest and most modern chemical complexes in Asia, the Shanghai Chemical Industry Park is being built and is due for completion in 2010. Together with the neighbouring refinery complex run by the Chinese petrochemical titan Sinopec the new chemical zone will cover some 60 square kilometres. Billions in foreign investment are also flowing into the site and German companies such as Bayer, BASF and Degussa are at the forefront of the development.

KAEFER Shanghai will supply thermal insulation as well as scaffolding on a MDI plant and a hydrochloric acid plant. MDI (Diphenylmethane diisocyanate) is used in the production of polyurethane hard foam. Experts anticipate that the market for polyurethane in China will show double-digit growth and become the largest in the world over the next ten years. KAEFER Shanghai is busy with these orders from October 2007 to mid 2008 and will deploy up to 78 fitters on the site at peak times.

In September KAEFER Shanghai received the Safety Achievement Award from its client Bayer – further proof of excellent working practices in matters of safety and the environment.

Precision work for Bayer

Dolphin Gas: the happy end is due in February 2008

It’s the biggest order for KAEFER Middle East to date and is just about to be successfully completed. In December 2004 KAEFER won the contract to insulate 300,000 sq m on the Dolphin gas processing plant in Ras Laffan in Northern Qatar and build the scaffolding. After the construction of the whole plant suffered delays of almost a year, it is now due for completion in February 2008. It will receive and process gas before transporting it via pipelines from the northern gas fields in Qatar to the United Arab Emirates and to other destinations in Qatar and Oman. During the first phase from February 2008 gas is due to be produced and processed and then transported to U.A.E from September 2008 onwards. The North gas field is one of the largest fields of natural gas in the world.

KAEFER Qatar is working as a subcontractor for JGC Middle East on the Dolphin gas project. So far a total of 1,300 KAEFER fitters have worked on the project, recording 1.85 million working hours as of autumn 2007. Safety was a priority as usual, for which KAEFER won an award. To date the milestones have all been completed to the client’s full satisfaction and KAEFER has been able to play a role in an important pan-regional infrastructure project.

Gas treatment plant Dolphin Gas in Ras Laffan

KAEFER Spain: a successful start for the scaffolding department

The scaffolding department at KAEFER Spain is now up and running and can start to expand its business. As the number of orders keeps growing, a separate department for scaffolding was set up in early 2007. It is based in an industrial park in Seville and intends to develop throughout Spain.

Over the course of the year the number of staff in Puertollano and Cartagena increased, as the scaffolding operations in Central and Southern Spain are coordinated from here. This is a clear sign that KAEFER Spain has already established a strong foothold on the growing Spanish scaffolding market. Demand is rising, especially in Central and Southern Spain and especially at power plants. The new scaffolding department is becoming better known and receiving enquiries for ever larger projects, such as the Teruel power plant in Andorra, where KAEFER Spain has now been working for several months. The reference list also keeps growing and now includes the power stations in Los Barrios, Ceuta, Cartagena and Castellón.

After this promising start all those involved now hope that close cooperation with the Industrial department will enable operations to be expanded. The aim is to win larger orders and acquire new customers as well as to develop strong, long-term relationships with existing clients. Competition is tough, but as KAEFER has already established itself as a professional partner in Spain's insulation industry and has gained a reputation for the qualifications of its staff and quality of its work, the chances are good that the scaffolding department will also be able to develop a strong long-term market presence.

KAEFER Belgium: shutdown at BASF in Antwerp

BASF operates Belgium's biggest chemical plant at the harbour in Antwerp. KAEFER insulated the 'heart' of this plant against cold on behalf of Linde AG – a major project where the volume of work doubled during the course of the installation. KAEFER Belgium is BASF's business partner for insulation and scaffolding.

The heart of BASF Antwerp is a so-called "steam cracker"; a complex piece of equipment for breaking down steam. After a planning period of two years it was completely shut down in mid August 2007, before recommencing operations in October. During this time some 4,000 fitters worked on the cracker every day, expanding its capacity considerably by various innovative means.

KAEFER Belgium carried out the insulation work with colleagues from IZOKOR in Poland. However, as the shutdown was delayed several times the insulation specifications were changed to enable the work to be finished faster. A combination of Foamglass and PUR Foaming was used for the cold insulation of the pipes. At peak times 220 fitters with four PUR Foaming machines were working for KAEFER on the site.

The contract was certainly a challenge for our staff, because the assignment itself was complex, the logistics were complicated and there was a great deal of time pressure. Much of the preparatory work had to be completed at the same time as the shutdown. The order volume was originally €2.5m and finally ended up at about €7m. But the KAEFER team, ably led by Chris Verkooijen, had everything under control, even when things got tricky and managed to complete the job on time and to the full satisfaction of BASF.

KAEFER Abu Dhabi: new insulation for ADGAS

It is one of the most prestigious projects in the history of KAEFER in the Middle East: the renewal of the ADGAS cold insulation on DAS Island in the United Arab Emirates.

For this project, which began in the year 2000, KAEFER is replacing the cold insulation on some 85,000 sq m of piping and tanks under a contract worth US$31m. KAEFER's patented technology enables the insulation to be replaced while the plant is running, which represents a considerable financial advantage for the client. 9,000 piping supports are also being installed. KAEFER Abu

Dhabi was given the order for making these supports by cutting the appropriate shapes in PIR foam blocks. KAEFER's outstanding work for ADGAS has been recognised in every one of the past three years by the HSE Award.

DAS Island is located some 160km to the north west of Abu Dhabi city and has a surface area of around 2.5 square kilometres. It is one of the most important areas for oil and gas in the entire Gulf region – it was from here that oil was first exported from Abu Dhabi in 1962. ADGAS is a pioneer of liquid gas in the Gulf. The processing plant was built in 1973 and began producing and exporting liquid gas after receiving its licence in 1973. It is the only plant in the world which can process natural gas as well as gas as a by-product of oil extraction. ADGAS produces around eight million tonnes of LNG, LPG, pentane and liquid sulphate.

LNG expertise paved way for work on Canaport project

Canaport LNG in Saint John, New Brunswick, will be the first liquefied natural gas project to be constructed in Canada. All three liquefied natural gas storage tanks will be built by global construction/engineering firm SNC-CENMC, a joint venture between SNC Lavalin and Saipem, which has chosen PARKER KAEFER as its insulation contractor. In the words of Pierre Boilard, construction manager for SNC-CENMC, "The reason PARKER KAEFER was chosen was because of the KAEFER expertise and extensive experience with LNG projects in other parts of the world".

Canaport LNG is a partnership between Irving Oil Limited and Repsol YPF. It is to begin operation as a world-class liquefied natural gas receiving and regasification terminal in late 2008. Canaport LNG will have a peak send-out capacity of 1.2-billion cubic meter of liquefied natural gas a day, destined for markets in Canada and the northeastern United States.

PARKER KAEFER started work on the project with a crew of eight fitters in August. The first tasks included the installation of foamglas insulation within the annular ring of Tank 1, corner protection and centre core insulation. Suspended deck insulation and piping above the suspended deck will commence in mid 2008. Work on Tank 2 began in October. Other PARKER KAEFER work ongoing at Canaport LNG is sandblasting and painting of piping supports from the jetty to the process area as a subcontract to Black and McDonald.

To date the performance of PARKER KAEFER has been commended by SNC-CENMC for the efforts in safety excellence as well as the professionalism in the execution of the scope. SNC-CENMC safety supervisor Rob Garnett stated, "PARKER KAEFER has been very proactive with regard to safety policies and procedures on site, fostering a good safety culture. Their housekeeping inside exceeds expectations, ensuring a safe work area."

Liquid gas plant Canaport in St John, New Brunswick

High-tech for new reactor type in Finland

The first EPR reactor (European Pressurised Water Reactor) in Europe is currently under construction at Olkiluoto in south-western Finland. This new type of nuclear reactor is based on the pressurised water reactor developed in the second half of the 90s by Siemens and the French Framatome. Since the nuclear activities of the two companies were merged in 2001 the work has been continued by Areva NP.

With 1,600 MW the new power generator has the same net output as the two existing boiling water reactors already in operation at the plant. The charm of the ERP lies in a radically different safety concept and improved incident management.

KAEFER Competence Centre N (Nuclear) is lagging the insulator hood for the reactor cover on behalf of Areva Group. The hood has a circumference of 6.2m and weighs 10 tonnes. It seals the pressure chamber where the nuclear reaction takes place and provides thermal insulation during operation. It is built to be raised in different positions for maintenance purposes.

For KAEFER this is the largest insulating module ever planned, developed and built for installation in a nuclear power plant. KAEFER engineers worked with the client for six months on developing the system. It consists of the two components "fixed cover insulation" and "removable insulation hood". The entire system is modular and the insulation panels are pre-assembled in Bremen, which together with the fixed cover insulation and a two-part falsework frame enable very short assembly times. This means the work on the cover insulation will be finished by mid 2008 and the insulation hood completed by early 2009.

KAEFER Belgium: successful expansion into Belgian power plant market

KAEFER België N. V. has been awarded the three-year master contract for scaffolding and insulation by the publicly-owned Belgian energy group Electrabel.

The contract not only covers conventional power plants operated by Electrabel on sites all over the country belonging to customers of ours such as Degussa, Total FINA and BASF, but also the two Belgian nuclear power plants in Doel and Tihange. "This master contract is an entrance ticket to the power generation business for KAEFER België", said Freddy Tulkens (Directeur Général KAEFER België and KAEFER Nederland). The company's move into the "warm zone" of power plants was facilitated by the support of KAEFER Wanner, which holds the relevant patents for power plant insulation. KAEFER's previous work was mostly in the chemical and petrochemical sectors. Prior experience of power plants was limited to work outside the warm zone in the Doel nuclear facility.

Last year the company took on a team from the power plant at Tihange and appointed Luc Corrias (Directeur KAEFER Luxembourg) to manage it. The team has since grown from 10 to 20 fitters and is now led by Danial Druart. The aim now is to deliver on the master contract for the power plants, to generate additional volumes and services and become an established supplier in this important market sector.

KAEFER Belgium's international cooperation is being reinforced in the West by new construction projects for Electrabel, which were acquired by the Industrial division in Germany as part of a convoy agreement and are due to be implemented in 2009-2010.

Successful end to largest ever project in Mexico

The town of Queratero has a new landmark: the tower of the PET plant operated by the Invista Group is 80m high, making it the highest structure around. KAEFER Aislamientos Mexico had an important role in the construction of the factory, which is one of the largest and most modern of its type in the world.

Invista Group's polyethylenterephthalate factory in Queratarо

KAEFER Aislamientos Mexico completed its largest project since being set up in 2005 in the first half-year 2007. The order covered the delivery of piping and insulation for a PET plant, built and operated by ICA Fluor, one of the largest engineering and construction companies in Mexico. The plant is owned by Invista Group and is situated in Queratero, 275km north of the capital, Mexico City. As its highest building the tower has rapidly become a symbol of Queratero. PET (polyethylene terephthalate) is often used for making plastic bottles, textiles and plastic fillers.

For KAEFER Mexico the project set new records for the quantity of insulation installed and revenue generated – the latter totalling some US$ 1.5m. The work took seven months and included mineral wool insulation and aluminium cladding as well as the installation of 10,100m of lagged piping. More than 5,700 valves and taps also had to be fitted. At peak times KAEFER had over 60 staff working on the site.

After a difficult start due to planning changes and delays in approving certain jobs KAEFER managed to get the material to the site on time, despite an unforeseen global shortage of mineral wool.

The insulation work was finally completed on time. The customer and the factory operator were very happy with our work, the excellent quality and the security measures, which meant that there were no accidents.

Dow Chemical Terneuzen: KAEFER is Number 1

KAEFER Nederland B.V. (formerly WKS) has been working for Dow Chemical at Terneuzen in the Netherlands for more than 30 years. Now some 100 staff are permanently deployed there, earning the company around €8m every year. Just as interesting is that Dow Chemical are very big on safety at work and this is an area where KAEFER excels – not a single accident in the past three years. This puts KAEFER at the top of Dow Chemical's league table.

At Dow Chemical KAEFER is mainly involved in insulation, scaffolding and asbestos removal. Some 100,000 sq m of scaffolding have been permanently installed on site since 2006. They will continue to stand for a while, as our contract with Dow Chemical was extended this summer for a further three years. KAEFER has shown itself to be a reliable partner for maintaining and expanding the plant and also offers advice and support on extending other equipment.

Because health and safety enjoys top priority at Dow Chemical, the company has set up a special committee in Terneuzen where representatives of all their business partners monitor the topic. KAEFER is represented by Freddy Tulkens, General Director of KAEFER Netherlands and KAEFER Belgium. Philip Verbeke is also Chair of CWT, a committee in which the project managers of all business partners deal with matters of safety at work.

Scaffolding for DOW Chemical in Terneuzen

Statoil Denmark more than happy with KAEFER performance

There was high praise for our Danish subsidiary KAEFER ApS from its client Statoil. The scaffolders and fitters from KAEFER Denmark were responsible for a great deal of work during the longest ever shutdown of the Statoil refinery in Denmark.

From March to July 2007 KAEFER ApS erected all the scaffolding. Between 50 and 90 scaffolders were deployed on the site, enclosing some 70,000 cubic metres of building.

Their extremely competent work, with extra-safe scaffolding, zero accidents and absolute punctuality, went down very well with the client. "The KAEFER ApS team made a very good impression. No other Danish company would have been able to manage this project on their own", said project manager Thorsten Ruminski and salesman Morten Haderup.

Under the terms of the framework agreement with Statoil KAEFER ApS was responsible for putting up all the scaffolding and also had 60-70 staff on site for other projects. In mid September KAEFER ApS in Fredericia was also successfully audited by Statoil for security and quality. The certificate is valid until 2010.

Tranquility reigns at Schwechat near Vienna

Our regular client Borealis operates a production facility for plastic granules on the site of its OMV refinery in Schwechat near Vienna, which we insulated in 2005. In 2007, out of consideration for the neighbours and to comply with emission limits, Borealis also asked us to redo the noise protection.

Our Industrial department provided the necessary insulation for piping with a total surface area of 5,000 sq m, whilst the Noise protection department produced full sound enclosures and capsules for the machines and encased the whole facility in double-sided sound-absorbing walls.

The contract was worth €1.5m and kept Manfred Zaiser, Magdy Salib and their teams busy for a total of eight months. It will be completed by the end of 2007. Then, on the ground at least, all will fall silent and the neighbours will once again be able to hear the sound of the aircraft at Vienna-Schwechat airport.

Graz: customised smoke extraction solution

L90 fire protection ducts for the murpark shopping centre in Graz

KAEFER Austria 'only' supplied the smoke extraction system including the electrostatic evacuation of the air-locks for the conversion and extension of the murpark shopping centre in Graz. But these L90 air ducts really take your breath away.

The project was not only remarkable for the volumes involved; the 28.8 km of different tubes and air ducts, insulated with diverse materials: mineral wool clad in aluminium, enclosed in aluminium or in PVC, some of it vapour-resistant, right up to Armaflex and some 470 insulations for different instruments. The real challenge for Helmut Paiszler and Christian Baldasti on this €0.5m contract was the size of the smoke flue, which was four metres wide and one metre high and needed special certification, which was provided in cooperation with Promat. The flue also had to be suspended from an existing ceiling only four to seven centimetres thick. The whole construction called for considerable technical know-how and featured barrier strips in the flue, double-sided impact protection and fastening solutions synchronised with combustion times, all mounted on a new wooden frame. The whole thing was made more exciting by the need to work not only at a height of seven metres but also at temperatures of -25° Celsius.

After a installation period of one and a half years, the client - MCE Anlagenbau Austria GmbH – was able to announce that all work had been completed in April 2007. Since then the town of Graz has been the proud owner of a shopping mall with 72 retailers, services and cafés/restaurants. The property was built as a public-private partnership with SPAR and has become a new attraction for shoppers in the region.

Combined heat and power plants in Scandinavia provide plenty of work

KAEFER Hamburg has completed a large amount of insulation work on waste-burning combined heat and power (CHP) plants in Scandinavia on behalf of Fisia Babcock Environment GmbH. From late 2007 onwards a surface area of some 20,000 sq m is to be insulated as part of the construction of two new CHP plants in Uddevalla and Börlange in Sweden. The work covers insulation and noise protection on piping and waste containers and scaffolding is also part of the contract.

From July to September 2007 around 5,600 sq m of insulation and noise protection were installed to a desulphurisation plant in Fynsvaerket, Denmark. KAEFER colleagues were also busy with insulation work on a waste incineration plant in Riihimäki in Finland from March to August. Scaffolding work was part of the contract in both Denmark and Finland.

AGRANA animal feed plant well-clad by KAEFER Austria

AGRANA, a well-known sugar and fruit processor and producer of bioethanol, is a new client with a major project. The company awarded KAEFER Austria the contract for equipping its new bioethanol and animal feed plant in Pischelsdorf near Tulln with pretty much the full range of KAEFER products: insulating the piping and containers of the production equipment for €0.5m, as well as building all the façades and fly roofs for €1.5m (Plans by Poertner & Partner).

Priority was given to a high standard of noise protection. Construction work included 1,200 sq m of façade panels, 12,000 sq m of double-skinned façade, 1,000 sq m of single-skinned façade cladding, 1,000 sq m of polyurethane panel roofing and 7,000 sq m of trapezoidal metal roofing. External doors and gates, windows, glass façades, and the roof insulation, including gravel, drainage system and minor steel fittings were also delivered and installed.

This huge volume of work had to be completed in just nine months on twelve buildings in parallel and on a fairly cramped building site requiring just-in-time material deliveries. The project was successfully completed by ten sub-contractors and a strong team led by project manager Markus Stelzer, and delivered on schedule in September 2007.

Plastic production is up with help from KAEFER

In 2007 Borealis Polymere GmbH made major expansions to its polypropylene plant in Burghausen, Southern Bavaria. The €200m investment enables the site to produce 745,000 tonnes of polypropylene a year. This means that Burghausen will increase its polypropylene capacities by 80% by 2010, making it the third largest site for the material in Europe.

On average 45 and at peak times up to 85 fitters from KAEFER Munich were working on expanding the production facilities. They installed 30,000 sq m of thermal insulation and noise protection to containers, machines and piping. The work was carried out over a period of 34 weeks and a total of 70,000 working hours.

The plastic produced in Burghausen is primarily used as a high-quality packaging material in the food industry, for medical packaging, as thin packaging for household and transport use and in transparent bottles for detergents and cosmetics.

Polypropylene plant belonging to Borealis Polymere GmbH in Burghausen

Extensive insulation work for Siemens

Siemens AG has a factory in Duisburg-Hochfeld for making process gas compressors. It basically consists of the compressor component production, compressor assembly and testing and trial stands.

KAEFER Düsseldorf received an order from Böhling Rohrleitungs- und Apparatebau GmbH to insulate and soundproof some 3,600m of piping and an exhaust steam collector. They are main steam, medium-pressure and low-pressure pipes with dimensions from DN 50 to DN 1200, installed on prepared routes. The installation work began in August 2007 and will be completed by the end of the year.

Tests of the trial stands with steam turbine propulsion only take place a few times a year. When this is not the case the steam pipe is withdrawn and protected. This regular insertion and withdrawal had to be taken into account when determining the dimensions of the exhaust steam collector.

No place for noise and fury – the Technical Noise Protection department does its utmost

If you can hear the sound of water dripping it might either be a rain shower or a case for KAEFER's Technical Noise Protection department. If the water drops are coming from the cooling tower of a power plant, it's more likely the latter. Our Noise Protection team has been developing this business for some time and so, like the rest of the industry, is now enjoying a minor boom in the new construction and refurbishment of power stations.

Mobile pump engine from Schlumberger with a highly-effective KAEFER sound proofing hood

But it's not the only area where the Technical Noise Protection team have been busy. "In the last three years the market has changed and so have our internal processes", explains Department Head Stephan Traudt. "We've made huge improvements, especially in construction and manufacturing." KAEFER works with 3D CAD drawings which allow the staff to see quickly what needs to be done. The splitters are also now built in frames to ensure an exact fit.

Technical Noise Protection mostly manufactures splitters for gas turbines and power plants, but also supplies noise protection for pump vehicles in the oil industry and all other industrial applications. The team is supported by production engineers and fitters in the factory. "We do everything from engineering to installation" says Traudt. "It's about solving individual problems and this is where everything comes together."

The Noise Protection team makes use of internal synergies, so when more experienced members pick up new computer tricks from their younger colleagues they pass on their technical expertise in return. It works well, with estimated revenues for 2007 of €6m and a similar figure expected for 2008 according to Traudt. From summer 2008 the department will also be starting the first apprenticeships for two construction mechanics.

Current projects include the power plant in Duisburg-Walsum. KAEFER is supplying the air intake splitters and mountings (including all doors and gates) for the 181m high cooling tower with a diameter of some 130m. The contract is worth around €1.3m. KAEFER also built a 16.7m long, 6.2m high and 6.7m wide noise protection hood for EMPG (ExxonMobil Production Deutschland GmbH) with especially demanding acoustic specifications. The order includes steel construction

work and complicated forced ventilation and all components supplied by KAEFER are ATEX certified. EMPG also has very strict quality and safety requirements. Any accident and you can pretty much forget about follow-on orders. But the Technical Noise Protection department passed this test too with flying colours.

Karlsruhe research centre: driving on straw

The multi-stage bioliq® process enables straw and other agricultural by-products to be turned into a fully synthetic fuel of a higher quality than is achievable with other bio or even petroleum-based products. But first of all a pilot had to be built, and insulated.

KAEFER Industrie GmbH Südwest in Darmstadt won the contract to insulate the cyclones, heat exchangers, other apparatus and piping as well as the collection tank. As this was a modest pilot plant the order volume was not that high, but the qualitative specifications were all the higher. A high-temperature area of up to 650°C required up to five layers of ceramic fibre and combined ceramic fibre / mineral wool insulation. The outer shell was made of aluminium sheeting. On 20 June 2007 the researchers in Karlsruhe were able to hold the official opening ceremony for the new plant, which will help develop a technology with enormous potential. KAEFER also sees considerable potential in the project, as the next stage in the form of a pressurised gasification plant is to be realised in 2008.

KTS: top performance, delivered fast

A powerful, flexible team with great expertise and equal amounts of motivation – that's a brief description of KAEFER Technik und Service GmbH (KTS) from Kirchheim near Munich. The company was set up at the beginning of 2006 with the strategic goal of realising synergy effects within the KAEFER Group. KTS is focused on air-conditioning and ventilation technology, especially for large engineering projects. As KAEFER's core businesses are industrial engineering, insulation, fire protection and noise protection, there are a lot of potential synergies.

In its first year KTS reported sales of €3.7m with a staff of twelve plus sub-contractors. In 2007 the number of employees has gone up to 20 and sales are forecast to exceed €7m.

The construction of a shopping centre, Erlanger Arkaden, was the first major project, acquired in October 2006. KTS was responsible for engineering, supply and installation of the ventilation equipment including pressurised ventilation, insulation and fire-protection. The contract was worth around €2.8m.

On this extremely prestigious project in the centre of Erlangen one of the biggest challenges was the very short installation period due to many months of delay in completing the structural work. The enormous time pressure meant that at peak times up to 100 fitters were busy equipping all 105 shops and installing the systems for the whole building – which they finished in time for the official opening on 18 September 2007.

Mall in the shopping centre Erlangen Arcaden

KAEFER Industrie GmbH – 2 new homes to go to

The southwest regional management of KAEFER Industrie GmbH decided to abandon the site at Pfungstadt after 37 years and relocate to Darmstadt.

The premises in Roxheim will be retained and new offices will be opened in St. Ingbert, ensuring an additional long-term presence in the Saarpfalz district of the southwest region. The renewal of existing framework agreements was decisive, as were the new framework agreements and projects secured in Saarland this year. The additional new offices opened on 1 October 2007 in the Innovationspark am Beckerturm – the right address for an innovative and market-leading company like KAEFER.

KAEFER's premises in Darmstadt are situated in the Schenk Group's building at the Technology and Industrial Park. They include sufficient office space and a workshop to retain prefabrication as a core competence on the basis of the sustainable workshop concept developed by the southwest regional head Oliver Geschke.

Following these substantial changes and with the support of three local sites the southwest region is now well prepared for the growth challenges facing it in the years ahead.

Location Darmstadt

Excellent work from KAEFER on "007" shutdown

Liquid gas heat exchanger in the FCC overcracking plant

The PCK Raffinerie GmbH in Schwedt refines some 10.5 million tonnes of crude oil a year, making it one of the largest in Germany. The KAEFER Group has provided services to the refinery from an operating site in Schwedt for more than a decade and was also involved in the latest ("007") combined shutdown of the PCK refinery.

For this fourth combined shutdown in recent times all the equipment in the refinery was turned off during April and May 2007. The refinery staff and 3,100 additional technicians once again completed the shutdown safely, correctly and on time.

KAEFER was there again with 120 fitters and received a certificate for its exemplary performance.

Exacting work on Linde air separation unit

Linde AG has made more additions to the biggest gas production site in Germany, located in the chemical town of Leuna. On the 7. September 2007 was the official production start for the second German hydrogen liquefaction plant and a new air separation unit (ASU 8) which were inaugurated in the presence of high-ranking industry representatives and politicians.

Linde AG gave the contract for insulation of the air separation unit to KAEFER. The new machine can produce 1,130 tonnes of oxygen per day, equivalent to 33,000 cubic metres per hour. A large proportion of the gas produced will be supplied to local firms via the network of pipelines criss-crossing Leuna. As well as producing oxygen the unit will also supply minor quantities of argon and other noble gases.

From November 2006 to March 2007 an average of ten fitters from KAEFER Leipzig were working at the site. The job required exacting cold insulation, condensation protection and noise protection.

Linde AG's gas production plant in Leuna

KAEFER Industrie and UAB Termoizola on a joint trip to St. Petersburg

BAMAG GmbH from Butzbach is the general contractor for an incineration plant for effluent sludge in St. Petersburg. However, the engineering company wanted to source all the material and the supervisory services for the prestigious project in Germany. At the same time a certain geographical proximity to Russia and knowledge of the way things work there were also considered necessary. KAEFER was able to provide exactly this combination.

Whilst KAEFER Industrie GmbH Southwest has long worked closely with BAMAG, the Lithuanian UAB Termoizola, also part of the KAEFER Group, not only has the right staff for a job in St. Petersburg but also a great deal of experience with the country and its people. At a kick-off meeting in Darmstadt the two companies set about developing a joint strategy for carrying out the work with great enthusiasm.

This framework enabled the joint team to satisfy the customer's exacting demands to the full. These included transferring Germany's high technical specifications to St. Petersburg on a building site which was fenced off like a high-security prison and patrolled in places by guard dogs. The insulation for the components of the incineration plant is still being delivered and installed, with work due to continue until the end of the year.

Safe and on time: KAEFER convinces Sasol

Up to 40 KAEFER insulation fitters did a great job during the shutdown of Sasol Germany's chemical works in Brunsbüttel. The staff from KAEFER Hamburg completed all the work on the Elbe river plant between April and June 2007 to the client's full satisfaction. The fact that there were no accidents and the work was carried out on time and in excellent quality convinced Sasol Germany.

Subsea insulation looks promising in Norway

The underwater insulation is injected into the cavity between the pipe and the collar

In the last decade, the oil and gas industry has developed new safe methods for exploration and commissioning of offshore deepwater wells, bringing new sophisticated technology, products and systems to the market. Subsea production and processing systems as well as surface wellhead systems – in addition to other improvements – have revolutionised the market by increasing field lifetime while reducing costs and shortening installation time.

Using conventional technology, many fields would be considered "empty" by now. The costs of extracting the remaining oil would be higher than the returns from its sale. Up to now, plans to increase these fields' lifetimes focused on installing new production platforms. However, innovative technology has recently begun allowing oil companies to install subsea production equipment and processing systems which hook up to their existing platforms. The result is cheaper, more flexible production, making it profitable to go after oil and gas reserves that would otherwise be difficult to reach or extract.

As drilling and production operations expand into deepwater and arctic environments, the need for subsea hydrate management systems becomes inevitable. Hydrates are solid compounds of hydrocarbons and water (like wet snow) cultured at low temperatures and high pressures. They can be troublesome because once they have formed, they partially or completely block the flow in pipelines and subsea production systems. To prevent this from happening, common systems use chemical injection, thermal insulation, heating, or a combination of these methods.

Having looked into oil companies' future plans for field development, KAEFER IKM in Norway is convinced that there will be a great increase of subsea projects. We believe that 90 percent of all subsea equipment designs will use subsea insulation for hydrate management.

Subsea insulation services are labour-intensive and executed in the workshop area. The operators need special training and have to be approved by the insulation suppliers. To prepare for this growing market, KAEFER IKM has trained ten operators in these skills.

The insulation application is time-consuming and executed in sequences. The insulation material is applied to all difficult geometric areas such as valves and manifolds by cast framing. The insulation material is mixed and injected by a special injection pump and the operators' challenge is to inject the insulation material without any air pockets before it cures. Due to a cure time of only 1 minute from the point of being mixed and injected, it is crucial to remove the cast within 30 minutes. Finally the sequence is repeated on all remaining straight sections, leaving the subsea equipment completely insulated.

So far, there have been two well-known subsea insulation service suppliers in Norway with a 70/30 market share. With the overall business still growing, we anticipate quickly penetrating this market. Even internationally the use of subsea technology is quickly growing, creating global demand for subsea insulation services.

Important maintenance and modification contract for KAEFER IKM

KAEFER IKM has been awarded a contract for maintenance and modification of the two offshore platforms Grane and Heimdal, performing insulation, painting, abseiling and scaffolding activities. The contract provides work for about 75 people. In addition, four people participate in onshore engineering activities together with REINERTSEN. The manning of the project is expected to increase, onshore as well as offshore.

The main offshore activities this year have involved extensive corrosion protection programmes and pipe work modifications, which required removal and reinstatement of insulation. To secure cost-effective access for various disciplines, innovative scaffolding solutions were created using abseiling techniques.

Our client is REINERTSEN, the main contractor for maintenance and modification on the Heimdal and Grane platforms. The contract has an estimated yearly value of €6.5 million, representing approximately 60,000 man-hours per year. The contract is valid for three years, with two options of two years each. REINERTSEN is a major player within their market area in Norway, generating a turnover of €260 million and employing approximately 1,200 people. They have ten branch offices in Norway, Sweden and Russia.

Production at Grane started only a few years ago, in the autumn of 2003. The field is located east of Balder in the North Sea and presently produces more than 200,000 barrels of oil per day. The platform comprises an integrated drilling, accommodation and production facility. Oil is transported by a separate pipeline to Sture Terminal. The field contains very little gas and is therefore supplied with natural gas from other sources.

At Heimdal, production already started in 1985. The field comprises an integrated steel and riser platform. Its gas centre is equipped to receive gas from Oseberg and Huldra while exporting gas to Grane at the same time. Heimdal will be able to connect to the existing gas transport system from Frigg to St. Fergus in Scotland via a new pipeline, Vesterled. This will make Heimdal the future connection point for gas sales to England.

KAEFER Spain: insulation for an LNG terminal 17 km off the Italian coast

At first sight it's just an enormous block of concrete sitting in a dry dock in Algeciras, Spain. But a closer look reveals two tanks, each capable of holding some 250,000 cubic metres of liquid natural gas (LNG). In spring 2008 the concrete block will set off towards the Adriatic coast of Northern Italy, where it will become the first offshore LNG terminal anywhere in the world. Its tanks will lie 30m below the surface of the sea and some 17km from the shore. It's an exciting project in which KAEFER Spain had an important part to play.

Today, Italy still receives its natural gas supplies via four pipelines. As consumption is forecast to rise from some 86 billion cubic metres in 2006 to over 90 billion cu m in 2010, additional import channels will become necessary. The Adriatic LNG Terminal is being built in the Adriatic near Venice and is due to commence operations in summer 2008. 80% of its capacity is reserved for RasGas. The gas supplier from Qatar has signed a 25 year contract with the operating company Adriativ LNG. On average an LNG tanker carrying gas from Qatar will dock at the 188m long, 88 meter wide and 47m high terminal every three days. Each ship can transport up to 152,000 cu m of gas.

To ensure that the delivery, conversion of liquid gas to gas and the transport to the mainland all function smoothly, it is vital that the two huge tanks are properly insulated. KAEFER Spain received the order from Aker Kværner, the general contractor, to insulate some 12,000 sq m of floor space and the corners of the steel tanks. KAEFER is also installing 35,000 sq m of wall and flexible ceiling insulation, including the internal piping and the Perlite insulation. Via Dragados Offshore KAEFER is also responsible for supplying 1,000 thermally separated pipe support stands made of highly compressed polyurethane and stainless steel. Finally, KAEFER is supplying and installing thermal insulation for 500m of pipeline on behalf of Celgas.

All the orders have to be completed by April 2008. It's an ambitious timetable, but a great honour at the same time. KAEFER is the only insulating company involved in the construction of the Adriatic LNG Terminal, and with a total order volume of some €13m and around 267,000 working hours it is also the biggest project in the history of KAEFER Spain.

Aker Kværner relies on KAEFER IKM for building its oil platforms

In May 2007 the Norwegian government approved Statoil's plans for the Gjøa field in the North Sea – almost 20 years after it was discovered. "It was a major challenge to make this project profitable" admitted Statoil. "So it took a long time to decide on the right development strategy." KAEFER IKM is acting as a sub-contractor for Aker Kværner, which was awarded the so-called EPCH (Engineering, Procurement, Construction, Hook-up) contract for the oil and gas platform.

The Gjøa field holds an estimated 40 billion cubic metres of gas and 82 million barrels of oil and condensate. Statoil is initially responsible for developing the field and Gaz de France will then take over operations once production begins. Oil and gas are expected to start flowing in 2010.

For Gjøa Aker Kværner is developing a floating platform similar to the Kristen platform completed in 2005. KAEFER IKM was chosen as a supplier for insulation, architectural services and fire protection, with an option for scaffolding services.

KAEFER IKM had already put in several months work on the project before the government made its decision on up-dating specifications, preparing detailed plans and carrying out process studies to optimise the supply philosophy. Checks and follow-up work will take place at different pre-assembly locations to minimise the work which needs to be completed on site. The construction of the platform will start in early 2008, and the number of KAEFER IKM staff involved with the project will go up sharply from then on. Final delivery is scheduled for 31 October 2010.

KAEFER IKM is inspecting oil platforms for ConocoPhillips

The Ekofisk field has been active since the first oil was discovered in the region in 1966. Some of ConocoPhillips' most important housing blocks are now getting on a bit and need to be serviced. The Architecture department at KAEFER IKM has taken on this joint assignment with Rosenberg.

Ekofisk platform belonging to Conoco Phillips off the North Sea coast of Norway

The Ekofisk complex, Block 2/4, is the core of ConocoPhillips' offshore Norwegian operations. Between 400 and 450 oil workers normally live on the eight platforms that make up the complex. KAEFER IKM and Rosenburg were asked to inspect the two housing blocks Ekofisk 2/4 H and 2/4 Q. One of them consists of living quarters, with 268 beds over seven floors, as well as offices, a small hospital, a helicopter landing pad and a control tower. The other is a four-storey accommodation platform with 120 beds, offices and a laundry. Both are due to be dismantled in 2013.

The buildings were thoroughly examined, particularly for structural condition, corrosion, piping, wiring, instruments and security apparatus, telecommunications, architectural condition, interior air-conditioning and asbestos use.

The aim of the inspections is to identify any discrepancies between the buildings' current condition and the regulations in force for the North Sea. ConocoPhillips then expects recommendations on possible ways to extend the housing blocks' useful life. The report will then form the basis for an application to the Norwegian authorities requesting an extension of the operating licence up to 2015, whilst the construction of new accommodation is prepared in parallel.

The report for 2/4 H was completed in June 2007 and the second followed in December 2007. The joint KAEFER IKM and Rosenberg team have shown what they can do and feel confident about bidding for new work from ConocoPhillips.

BP Norway extends useful life of Ula living quarters by 20 years

Ula is BP Norway's most important living accommodation in the Ekofisk complex. It was originally due to be shut down in 2005, but extensive building work has extended its useful life until 2028. KAEFER IKM had a key role to play in the refurbishment.

The plan for extending Ula's operational life included a complete architectural renovation to ensure compliance with current regulations. KAEFER IKM had been appointed back in 2003 to prepare a feasibility study on cabin conversion and costs. This

led to detailed discussions with the client and finally to other joint projects.

Phases I to IV of the renovation began in mid 2005 with the complete demolition of the buildings, apart from their steel floors and walls, and the reconstruction of the cabins. KAEFER IKM also supplied new bathroom units. Our Architecture department has now received the order for phase IV of the renovation, covering all engineering work as well as pre-assembly, installation, completion and documentation. We also won the contract to prepare feasibility studies on the communal areas, which include lounges, fitness rooms and dressing rooms.

The renovation work completed so far has been very well received and KAEFER IKM has earned a reputation with BP Norge as a professional and solutions-oriented supplier.

"KAEFER is like a big family, spread right around the world"

KAEFER Mexico had already worked on offshore oil platforms, but architectural services and interior finishing were never part of the contract. So after we decided that these services should be included, we sent our sales manager Alvaro Atxutegi to KAEFER IKM in Norway. These are some of his impressions.

From left to right, Einar Skjellevik, Álvaro Atxutegi Vela and Tor Egil Olsen in Norway

"The first thing I noticed when I arrived in Norway was how well organised everything is, even at work. Although the colleagues at KAEFER IKM all had a lot to do, they managed to keep everything in perfect order. Einar Skjellevik and Tor Egil Olsen explained how they go about things and it was great seeing them working as a perfect team. When they prepare a quotation, nothing is left to chance; they think of every possible variation and show the customer that KAEFER is the best, most cost-effective and safest option.

Once they had told me how they work, we went through an interiors project together step by step. Einar and Tor Egil explained all the details of walls, ceilings, floors and cladding. We looked at lots of different products and structures and they really answered all the most basic questions that I had, because at the time I didn't know much about this sort of thing. They were very patient.

One day we went to a building site in Hogusend, to see what I had learnt being put into practice. We had a look at a ship which KAEFER was fitting with fire protection and pipe insulation and at the cabins too, to see the interiors finishing being installed. Kenneth came with us on the visit and told me about all the challenges that had cropped up over the course of the past three years. It was really interesting to see how they organise such a huge project.

Finally I visited the head office in Stavanger. Staale Bilstad, the sales and marketing manager for Norway, showed me round all day (thanks for everything Staale!). In the office they explained all the services on offer: insulation, interiors, fire protection, surface protection and scaffolding. I was told about each department and it became clearer and clearer to me that we really are a pretty big company – not just in Norway, but in the whole world.

Despite the cold weather the Norwegians were really warm-hearted and I really felt at home. I'd like to thank all of them here, and invite them to visit our offices in Mexico. You've got a friend and a house in Mexico City.

After this great experience I can only confirm what others have said before me: KAEFER is like a big family, spread right around the world!"

Senior Service for the Navy

KAEFER's naval work mainly takes place in Spain and France. The contract work for insulating or extending frigates and corvettes often requires the staff to get to grips with unusual challenges.

Like the repair work on the sister ships of the French navy "Tonnerre" and "Mistral" for example. Known as BPC (Bâtiment de projection et de commandement) these large ships can transport troops, landing craft and helicopters. KAEFER WANNER dismantled furniture and wall panelling in the living quarters so that the flooring could be replaced. The difficulty lay in removing the furniture and panelling without damaging it, so that it could be reused, and to produce as little dust as possible whilst replacing the floor to avoid getting it all over the ship. The work was carried out in Brest with up to 80 technicians from KAEFER WANNER and TERMOIZOLACJA on each ship for four months.

KAEFER WANNER also completed its first order for CMN shipyards in Cherbourg. The navy of Abu Dhabi ordered a total of six Baynunah corvettes, of which the first is to be built in Cherbourg and the remainder in Abu Dhabi. The small, but well-armed corvettes are 70m long and have a crew of 40. For the first ship in the series KAEFER WANNER is supplying and installing all the walls, ceilings and floors in the living accommodation and installing the aluminium furniture in the cabins. The work will continue with the design of the insulation of the frigate "Fremm", which is due to start in 2008.

KAEFER Spain mostly carries out work for Navantia. The leading Spanish military shipbuilder has selected KAEFER for a project on a supply ship, which is 170m long and has a crew of 120. Between June 2007 and December 2008 KAEFER is doing noise and fire protection for about 28,000 sq m – the contract is worth €2.2m. On the frigates "Numancia" and "Victoria" KAEFER is installing piping, bulkheads and ceilings for a total order volume of €200,000. Similar work is being done on type C209 and C210 frigates, where KAEFER is also installing bulkheads and ceilings for around €600,000.

New on the market: KAEFER WANNER Shipbuilding

KAEFER WANNER is not only the market leader for industrial insulation in France, but also a well-placed player in shipbuilding. In order to document this fact and demonstrate to the market that the company is part of KAEFER Shipbuilding, KAEFER WANNER SHIPBUILDING (KWS) was established on 1 August 2007. The new subsidiary will also enable the company to react more swiftly to market developments.

All the French shipbuilding operations are combined in the wholly-owned KAEFER WANNER subsidiary. Its main customers are AKER YARDS France in Saint Nazaire (formerly Chantiers d'Atlantique), where cruise ships are built, and DCNS, one of the European market leaders for naval ships, with yards in Lorient, Brest, Cherbourg and Toulon.

Shipbuilding has been growing rapidly since 2003 – partly due to the popularity of cruise holidays but also thanks to the renewal of many military fleets. The shipyards no longer divide the work amongst a panoply of smaller companies, however, but have gone over to agreements with global suppliers. This means that the staff of KWS have to specialise and divide their work. Tasks can then be assigned more promptly to individual teams or departments. Thanks to these new structures they can also collaborate more closely with other KAEFER Shipbuilding teams.

Right now there is an excellent example of this knowledge transfer and of mutually complementary skills: AKER YARDS are currently building two ships on behalf of the shipping company NCL, which are due for completion between 2009 and 2011. KWS is supplying the wall panelling for the galleys and installing it using the same system as KAEFER Shipbuilding Bremerhaven used for the galleys on the NCS ships "Norwegian Pearl" and "Norwegian Gem". The know-how from Bremerhaven helped to win the AKER YARDS contract for KWS.

KIS Yacht Solutions – our new key to the European market

Our experience and expertise in shipbuilding is broad and varied. Numerous reference projects provide evidence of the skills we have developed over many years, including work for Fr. Lürssen Shipyards, Abeking & Rasmussen and Thyssen Krupp Marine Systems. The time is now ripe to combine our international yacht-building services, and on 1 February 2007 that is exactly what we did, by founding KIS Yacht Solutions.

KAEFER International Shipbuilding, KIS for short, is a sort of Acquisitions Task Force to develop an international market presence for our wide range of shipbuilding skills. By establishing KIS Yacht Solutions it has already set off on the right foot. The new department is led by Arvid Uzolas and is dedicated exclusively to the growing mega-yacht segment.

KIS Yacht Solutions' service portfolio includes turnkey packages for insulation and interior outfitting and tailored services ranging from design advisory work to manufacture and final installation. It includes:

> KAEFER Schiffbau GmbH in Bremen, with over 160 staff, whose services include fully-fitted insulation work, interiors for cold rooms and technical areas, fully-finished manufacturing and installation of fire protection doors and gates, external ceilings and the lightweight standard panelling system LOLAMAT.

> IPPOKAMPOS in the Greek capital Athens, with over 30 staff and a service range covering high-quality interior finishing of VIP cabins, public areas and crew quarters, production and installation of modular bathrooms, furniture and fire doors as well as the lightweight panelling system NEPTUNE with a high degree of individual prefabrication.

> Corporate Technical Services in Bremen, whose more than 20 staff support Group companies with advice and planning services, sound and vibration measurements, analyses in their own laboratory and on board ships as well as by developing products and systems.

> KAEFER WANNER Shipbuilding in St. Nazaire, France, which provides fully-fitted insulation work with a staff of 40.

KIS Yacht Solutions already has its sights on projects with a sales volume of more than €40m. A €2.4m order was successfully acquired from Azimut-Benetti in Italy, for which CFS is to supply LOLAMAT panels for eight mega-yachts from late 2007 to early 2009. The client is looking for a long-term relationship and is also interested in other service packages including insulation and interior outfitting. We wish everyone involved the best of luck in converting all these opportunities into contracts.

KAEFER and Rockwool working together on LOLAMAT production

In May 2007 a new production plant officially started operations in Flechtingen, between Wolfsburg and Magdeburg. The factory was jointly developed, financed and built by KAEFER and Rockwool and now has an annual production capacity of 500,000 sq m of LOLAMAT panels. KAEFER manufactures single and double-layer LOLAMAT panels and simple LOLAMAT outer layers as a preliminary product for sandwich floorboards with RECORE, whilst Rockwool uses the facility to make its walkable "Megarock" roofing boards, which are based on a similar principle.

The raw boards have excellent stability, insulation and fire protection properties and are produced in different thicknesses at the plant in Flechtingen. They are packed in different sizes and dispatched on pallets ready for installation.

At the moment, the LOLAMAT panels are mainly used for shipbuilding, but normal building applications are also being prepared. Thanks to their final surface finish the panels are also the main construction material for flooring, walls and ceiling in all the interior cabins of the Neumayer III Antarctic Station.

G+H Schiffsausbau: from insulating pipes to equipping luxury cruise ships

Even the most beautiful cruise ship is no holiday if it's too warm, too cold, too loud or just too uncomfortable for the passengers. And without insulation the largest liquid gas tanker is also fairly useless. G+H Schiffsausbau, an experienced outfitting company, is there to see that doesn't happen. Since May 2007 the company has been part of the KAEFER Group, where its skill-set is an ideal match for KAEFER's outfitting business.

Hairdressing salon on Radiance of the Seas

G+H Schiffsausbau is specialised in outfitting and fire protection on board ships which prevents fires from spreading and reduces secondary damage to a minimum. Insulation for passenger and merchant shipping is another core segment – it's important that everyone feels comfortable on board, even in the Arctic at temperatures of -50° C or in the tropics at +70° C. Noise protection is also an important feature on ships so that passengers can sleep properly and the crew has acceptable noise levels for working.

G+H Schiffsausbau is also the right partner for LNG (liquid natural gas) insulation solutions. The company uses high-quality insulating panels to keep tanks and pipes on board ships and on land at temperatures well below freezing. A total tank volume of more than 750,000 cubic metres has been insulated in transport and storage facilities to date, made up of eight terminals and 50 gas tankers. The jewel in the crown is the Golden Conti LPG Terminal in Shanghai, which is part of the most modern petrochemical complex in China. G+H Schiffsausbau supplied the engineering and insulation for two enormous liquid gas tanks.

The company has responded to the demand for total solutions in outfitting of ships and occupied a niche in high-quality panelling and exquisite interiors. It designs, supplies and fits furnishings for restaurants, wellness areas, stairwells and cabins. An in-house cabinet-maker produces top-class bespoke furniture. The reference list is long and varied, including "Aidablu", "Aidavita", "Pride of Hawaii", "Norwegian Jewel", "Queen Mary 2" and many others.

A60 fire protection doors installed on "Genesis", the world's largest cruise ship

A big ship needs big doors – the on-board theatre and the Crystal Park shopping mall have bulkheads 15m wide and 8m high which need to be securely closed, not only when the facilities themselves are shut, but also in case of fire. Rolling doors in these dimensions and in such a high protection class were not previously available.

The scale of this order, which was acquired jointly by KAEFER Shipbuilding (KSB) and Markku Tammi (KAEFER Finland) from Aker Yards in Turku, gave KAEFER and its supplier Effertz in Mönchengladbach the opportunity to get the fire protection rolling doors certified for these dimensions and protection class. The rolling doors were developed jointly by both partners Effertz builds them and KAEFER organises the qualification and marketing and holds exclusive sales rights for the shipbuilding industry worldwide.

In addition to the "launching order" for €1m there are another two options for the same amount, and since the market discovered that KAEFER can supply the product there has already been considerable additional interest. Meyer shipyards has placed an order for A0 rolling doors, Aker France asked for a quote for two ships and there is a lot of interest from the mega-yacht sector as well. The reason for all the excitement is that the doors enable the construction of spacious, previously unmanageable areas with security-relevant features such as indoor barbecues and fireplaces, whilst complying with the strict marine fire protection regulations.

As Oliver Schumacher, Department Head, Doors Unit, explained, "Effertz has been making rolling doors for 127 years and KAEFER has the international ship-building contacts, so together we are very powerful, with a product that literally opens new doors for ship architects. Now you can have the wide open spaces and also shut them again very securely and very fast.

KAEFER regularly piped on board luxury cruise ships

When it comes to cruise ships KAEFER only deals in superlatives: we work on the biggest cruise ships in the world. Whether they are based in Finland, France or the Bahamas – the owners of the gigantic luxury liners have relied on KAEFER's services for years to provide their passengers with the ultimate in comfort.

"MSC Orchestra"

The modern "Freedom" vessels belonging to Royal Caribbean International are the largest cruise ships in the world. The first ship in this class, the "Freedom of the Seas" was launched in April 2006 and was followed on 18 April 2007 by the second. "Liberty of the Seas" was also built by the Finnish Aker Finnyards in Turku and with a length of 339m, gross tonnage of 154,000 BRT and space for 3,600 passengers is as large as her sister ship. KAEFER Finland was responsible for 1,400 sq m of solarium areas and 1,750 sq m of spa and fitness areas on decks 11 and 12. KAEFER took charge of the decks when they were just raw steel and so had the additional challenge of planning and installing the piping and cable network. Only then could the real interior outfitting begin, with all the flooring, walls, ceilings and decorative elements such as furniture, columns and even palm trees around the swimming pool.

KAEFER Finland also worked on other large ships in 2007. One example is the 233 cabins on the "Color Magic", a 224m vessel with room for 2,700 passengers, which began plying the route between Oslo and Kiel on 15 September 2007. The "Tallink Star", owned by Tallink Silja, does the trip from Tallinn to Helsinki in just two hours. The 212m ship has space for 1,900 passengers and 450 cars and KAEFER built 161 of the 927 cabins. KAEFER also installed 164 cabins on the "Cotentin", a ferry owned by Brittany Ferries.

KAEFER WANNER Shipbuilding (KWS) installed 485 cabins for "MSC Orchestra" as well as insulating the air ducts and piping system. The ship is 294m long and its 1,275 cabins provide accommodation for a total of 2,550 passengers. KWS also laid more than 800 sq m of floating screed for the first time on board the "MSC Orchestra". This demonstration of their expertise in a new area convinced the client, so Aker Yards intends to award other contracts for this type of work to KWS in future.

MML Shipbuilding renovated the Windjammer Cafés on board two ships belonging to Royal Caribbean International on the Bahamas. "Majesty of the Seas" lay in a dry dock in Freeport for 28 days in January whilst 250 technicians redecorated the 2,800 sq m restaurant. In May 90 fitters completely rebuilt the 1,300 sq m restaurant on board the "Grandeur of the Seas" within 14 days. Both ships received new walls, ceilings and floors, but also new wiring and air ducts. Strict project management and the prefabrication of some elements on shore allowed MML to keep to their tight schedule and complete all the work to the client's full satisfaction.

Cabin on the "MSC Musica"

KIS sets up its stall at the Monaco Yacht Show 2007

The Monaco Yacht Show is the meeting point for the global mega-yacht business. Limited to 500 exhibitors and restricted exclusively to the luxury yacht sector with ship lengths from 25m, this is where the leading shipyards, architects, designers, suppliers, outfitters and brokers meet, including the "world's top 15 customised yacht builders". And so KAEFER was there too.

Exhibition area for the Monaco Yacht Show in the harbour at Monte Carlo

From 19-22 September 2007 the attention of the luxury yachting world was again focused on the almost 9,000 sq m of exhibition space at the yacht harbour in Monaco and the almost 100 mega-yachts presented there, of which 30 were newly built and being shown for the first time. Over 20,000 visitors and representatives of 40 countries gave an indication of the scale of the event. The guests were mainly professionals, including owners and shipbuilders, but there were also plenty of celebrities, for whom the glittering display was ultimately intended.

IPPOKAMPOS organised the presentation of KAEFER's expertise and products for turnkey insulation and outfitting, which was very well received by the public. Our staff members Vassili Tsioutsioulis, Anna and George Amiradakis, Bruno Huriet, Holger Simon, Arvid Uzolas and other colleagues held over 50 meetings and several enquiries have been received since then. Arvid Uzolas, who was primarily responsible for organising our visit to Monaco, summed it up, "The gratifying level of interest and the resulting enquiries especially are a great success for our first time here, and show that it was the right decision to take part in the top-event in our business". (More information and lots of pictures of the MYS are available from www.monacoyachtshow.com)

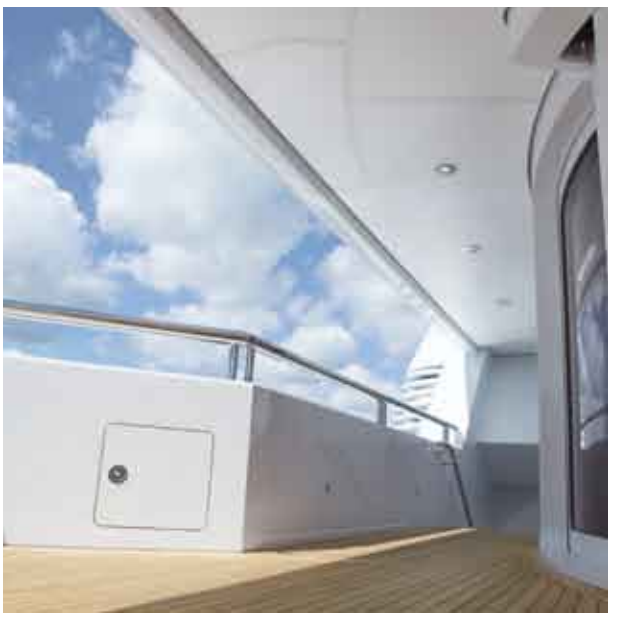
Vacuum panels can hold their breath under water

Vacuum panels are a genuine innovation in the history of insulation systems. They enable weight savings, and above all considerable space savings thanks to layers which take up less than 40 percent of the space required by conventional insulating materials. As the production process for the vacuum panels is more expensive, they are primarily used in areas where space is at a premium and special solutions are needed.

From a shipbuilder's perspective, this brings submarines to mind. The confined conditions on board demand compact components with all the insulating properties of conventional equipment. In cold storage rooms, for example, where the vacuum principle can be used for wall, ceiling and floor panels, creating additional usable space.

KAEFER Shipbuilding develops modular cold rooms, which can also be installed without steel casings and can even be fitted into complex geometries thanks to their modular construction. They even fulfil navy specifications for impact resistance, so there is a good chance that their first deployment will be under water.

Mega-yachts "Safari" and "Sunflower" have ceilings from KAEFER



KAEFER exterior decking system on a yacht built at the Lürssen yards in Rendsburg

The fine qualities of our patented ceilings system, which can be produced and installed quickly thanks to laser measuring technology, have attracted a lot of interest. The 93m megayacht "Safari" currently under construction at Blohm + Voss in Hamburg for example, has four decks and is being installed with some 600 sq m of 25mm ceilings with a 10mm radius. The exterior staircases are also being built in a very complex spiral form using the same system. Meanwhile the Fr. Lürssen yard is building a 160m megayacht named "Sunflower", which requires 1,250 sq m of 15mm ceilings over four decks. In both cases the decks are screwed and glued to the hull via plastic brackets to form a coaming. Both contracts run from February to the end of 2007.

IPPOKAMPOS: orders galore from all around the Mediterranean

IPPOKAMPOS S. A., the specialist for interior design and outfitting for luxury yachts, cruise ships and ferries, has been part of the KAEFER Group since March 2006. In 2007 the company once again convinced a large number of clients of its strengths as a local partner in Greece.

The shipping company Louis Cruise Lines was one of them: IPPOKAMPOS carried out various jobs on board the cruise ships "Arielle", "Perla", "Opera" and "Sea Diamond". The design for "Opera" and "Sea Diamond" came from the Greek architects AMK, with whom IPPOKAMPOS has already completed a number of shipbuilding projects, including the new build of the cruise ships "Millennium", "Infinity" and "Constellation" for Celebrity Cruise Lines. The ships in this class are 294m long and can accommodate some 2,000 passengers.

IPPOKAMPOS also carried out the complete overhaul of the public areas on board "Blue Horizon", "Blue Star Paros", Blue Star Naxos", "Blue Star Ithaki II" and "Diagoras" on behalf of Blue Star Ferries. The company is one of the largest ferry operators in Greece and the Mediterranean. The interior design for the ships came from Apostolos Molindirs & Assoc. With support from the Technology and Engineering departments and thanks to innovative solutions and high standards of prefabrication, IPPOKAMPOS was able to complete every project on time and in the quality required.

The jet-set of the Eastern Mediterranean books exclusive cruises on the "F-Diamond", the official cruise ship of fashion tv. The television company focuses on international fashion and lifestyle topics and organises parties and fashion shows on board its ship. IPPOKAMPOS was the official partner for the interior outfitting of the 140m ship and furnished a total of 122 passenger cabins and twelve suites, as well as renovating the public toilets and converting the owner's library into a luxury office.

IPPOKAMPOS Interior Technology S. A. also redecorated two out of a total of eight cabins in the Privatsea style on board a 66m yacht belonging to the luxury yacht club. All outside decks were also replaced by IPPOKAMPOS' innovative Neptune panels. The yacht was built in 2002 in Holland, when IPPOKAMPOS planned, supplied and installed all the passenger cabins, bathroom units and the prefabricated owner's bathroom.

F-Diamond, the official cruise ship of fashion tv

VIP and General Aviation Centre Vienna Airport

The finest interior design for the General Aviation Centre at Vienna International Airport

Every passenger plane which is not on a scheduled flight is known as "General Aviation" and therefore has general VIP potential. So Vienna Airport also wanted to make sure that its "VIP-GAC" looked suitably smart. Knowing that only the best would do, the general contractor Porr Projekt und Hochbau Aktiengesellschaft called KAEFER, for whom they are regular customers.

That is the background to a dry construction project amounting to around €0.5m. Within five months 4,700 sq m of wall area were installed, built on plasterboard stands, with dry plaster and plasterboard walls – as well as 4,700 sq m of ceiling, including long-panel ceilings with sunken rims and post cap ceilings. Products from Knauf, AMF and Armstrong were used. The results can be seen in the photo and should satisfy the highest-flying VIPs.

Tailor-made scaffolding in Antwerp

Antwerp's main station is an impressive domed edifice which looks more like a cathedral than a functional building. The massive structure is due to be renovated from 2008-2010, requiring free-standing, heavy-duty scaffolding up to 80m high, which needs to be moved several times in the course of the work. That sort of thing doesn't get built overnight and requires ingenious planning and structural calculations by an experienced professional partner. So the contractors TVH Van Laere nv and Verstraete & Vanhecke nv – both regular customers – gave the €1m contract to KAEFER Belgie nv.

The 45,000 cubic metre scaffolding was designed by KAEFER Stabilität- und Engineeringbureau. Erection began in August 2007 and will continue in six stages up to 2010.

The dome of the main station in Antwerp

MICROSORBER right at home in Schanzenstraße in Cologne

Schanzenstraße in the Mülheim district of Cologne is home to television studios and other media companies. The MICROSORBER is now also a permanent fixture in the street. In 2002 some 14,500 sq m of MICROSORBER were installed there, and now Hamburg Kölner Vermögensverwaltung GmbH has again awarded us the contract to supply and install the sound absorbent foils.

Hamburg Kölner Vermögensverwaltung GmbH belongs to Gothaer Insurance, which with 3.5 million customers and revenues of more than €4bn is one of Germany's major insurance companies. In Schanzenstraße in Cologne, the Gothaer staff are exposed to a particularly high level of noise from neighbouring telephone conversations, because they work in a former factory building with up to 4.5m high ceilings, which was turned into open-plan offices.

So Hamburg Kölner Vermögensverwaltung GmbH asked KAEFER to improve the acoustics on a total of four floors. MICROSORBER is ideal for this type of challenge, as it deals effectively with the acoustics of a room and retains its architectural character at the same time.

Around 4,500 sq m of the translucent MICROSORBER foils were installed in two layers using a pin and grommet system. Measurements made after the work had been completed in July 2007 showed how effective it was: the echo time was reduced from four to around 0.8 seconds. That's good for KAEFER and good for Gothaer and its customers, because even the best telephone sales advisers are powerless when the customers at the other end can't hear them.

KAEFER cures all in Bad Pyrmont

Even a hospital can suffer some unpleasant complaints, but thanks to its years of experience in the medical sector KAEFER Construction often has the right remedy. Our interiors experts from Hanover were called in to help at the church-run Bathildis hospital in Bad Pyrmont – and the patient is thriving.

In the course of building the first section the hospital management decided it might be better to have a new partner for the second one, instead of our incumbent competitor. So in May 2007 the Interior finishing team in Hanover gained a new client – starting more or less immediately.

1,200 sq m of dry screed, 8,500 sq m of diverse walls and ceilings from F0 to F90, as well as 1,000 metres of F30 frieze, 1,500 sq m of pitched roof cladding including insulation and 300 door elements had to be delivered and installed. Then there is also the site in Frankfurt with cladding for 650 metres of F90 steel girders. At peak times there are up to 35 fitters working on the site, which will run until early 2008.

It's a great feeling when good references pave the way to the next good references!

First industrial project for KAEFER Construction GmbH

Light floods into the interior of Magdeburger Artholith GmbH's offices

In autumn 2007 KAEFER Construction, GC Bremerhaven, finished building a factory for Magdeburger Artolith GmbH, complete with offices, laboratories and social facilities, and made of remarkable sandwich facades with a special colour finish. The total investment amounted to €50m and will create 100 new jobs producing stone paving bound with synthetic resin, which combine a natural look with improved properties.

Production line No. 1 has already been tested and the construction of production line No. 2 is due to start in late 2007. There is also some additional work to do, such as an emptying station for tank trucks, and the new plants still have to settle in. The interior finishing department in Bremen was also involved on this contract.

The production capacity of 100,000 sq m per month will help our client satisfy increasing international demand for stone wall and floor coverings, which are very popular, especially in luxury hotels.

MICROSORBERs in the Media Centre of the Old University in Graz

When the Old University in Graz and its historical buildings were revitalised, a media centre was installed in some former lecture theatres. The charm of the rooms lies in their beautiful vaulted ceilings, decorated with fine paintings – but they are also a problem. The acoustics were terrible, and sounds and echoes made communication difficult.

KAEFER Vienna attached 75 sq m of double-layered MICROSORBER foils (150 sq m in total) right across the vaulted ceiling and the problem was solved. The transparent material retains the visual charm of the arches and the character of the room, but brings the acoustics under control. A simple trick with an impressive result, you might think. But Silvester Biro, responsible for MICROSORBERs, suspended ceilings and dividing wall systems, sees things differently. "The job wasn't simple at all, because in this building none of the walls are really parallel or perpendicular to one another. The rooms are completely irregular shapes. But the tension on our sheeting has to be perfectly balanced, or else the visual impact is ruined by diagonal creases."

But by using laser measuring devices it was possible to manufacture all the material to achieve an exact fit, and now the magnificent lecture theatres are not only a pleasure to look at, but also to listen in. An impressive reference for the visual qualities and efficacy of our product.

The vaulted ceilings of the media centre at the Old University in Graz

The "Residenz am Yachthafen" in Cuxhaven has a view of the Elbe river

Graphic of the "Residenz am Yachthafen" in Cuxhaven

The project being built on the outer dyke in Cuxhaven is a five-storey residential property plus penthouse for Immo-Casa-Immobilien. New residents moved into the first section this summer. The precautions taken for the flood plain in front of the dykes are particularly interesting.

The building rests on 28m deep steel piles and the ground floor is 7.2m above sea level, i.e. at the same height as the top of the dyke, although 6.7m would also have been enough, according to the wave analysis. The basement garage is made of special waterproof concrete and equipped with flood windows and flood doors for the entrance and exit which can be sealed if flooding is imminent.

So this is a building which had some unusual challenges for project manager Margret Hellweg, but if a once-in-a-century storm tide floods over the dyke, it should offer its inhabitants rather better protection than the 'normal' houses on the other side.

Haus der Forschung, Vienna: detailed work under time pressure

Everything looked great – the order came from a well-known general contractor in Vienna who is a regular customer, the construction project was a prestigious building with sophisticated architecture, and the assignment covered more than 30 Barrisol stretched ceiling panels, which should really be called 'light panels'. Things got a bit trickier with the different round and oval shapes of the panels, which had to be individually measured at 40 separate points and exactly mapped to precise patterns in order to manufacture and attach the translucent sheets to the frames. All this had to happen under great time pressure, as the preceding jobs were heavily delayed and there were only three calendar weeks left to complete the project – from the first measurements to final assembly. Of course everything fitted and worked out fine and now the researchers can perform their experiments in a clear, mild light with no shadows to disturb them.

Parc du Bois, Potsdam: modernisation of the former military hospital is complete

The latest mod cons in a former military hospital? Located in listed buildings from the 19th century? Yes, it can be done – thanks to KAEFER! Since summer 2007 Parc du Bois has been one of Potsdam's best addresses. At this residential development close to the town centre and neighbouring the palace of Sanssouci, KAEFER has modernised ten out of the total of twelve buildings, with altogether 180 exclusive apartments, situated in the midst of a spacious mature park.

The residential complex 'Park du Bois' lies in the middle of an historic park

Even the cast-iron banisters have been lovingly restored

The "Park in the Wood" is a military hospital dating from the 19th century and built from 1890-1894. High ceilings and wide corridors are still appreciated today, but in the 21st century we can do without cramped living quarters and tiled surgeries with brick bathtubs. The idea was to refurbish the listed buildings and the park, which is also protected, and to develop them as an exclusive residential property with landscaped gardens. Apartments and new penthouse flats ranging from 50 to 187 sq m have been created, as well as a twin-level basement garage, by rebuilding and converting areas of the buildings.

KAEFER Construction GmbH started work in autumn 2003 as general contractor for Berner Group GmbH in Wiesbaden. The project had a total volume of some €19m and began with demolition work in the first house. Contaminated sections had to be removed, for example, as did some elements which were simply in the way of the new flats. Then came the bricklayers, carpenters

and joiners to complete the structural work. All the building work was carried out by sub-contractors, whilst KAEFER Construction GmbH was on site in Potsdam with a project manager and up to seven foremen, assisted by the Head of Department and staff from the quantity surveying and financial teams.

KAEFER was also responsible for all the interior building work – heating, plumbing, wiring and ventilation, plastering and laying scree and parquet flooring as well as painting, glazing and metalworking. For example the staircase and banisters, which were over 100 years old and in very poor condition, were completely renovated.

One of the jobs which KAEFER doesn't have to do every day was to restore the whole grounds, covering an area of some 27,700 sq m. The park had a fine selection of mature trees, but many of the paths, bushes and trees were simply overgrown. The park is the centrepiece of the Parc du Bois and KAEFER was responsible for restoring it according to the original layout. Another unusual task was building roads in the park, which is open to the public. 180 apartments means at least 180 car parking spaces, but as they weren't necessary when the military hospital was erected, KAEFER had to build them, as well as the roads to and from the underground car park.

MICROSORBERs at Canary Wharf: suspended animation under a glass dome 27 m above the ground

The East Wintergarden is more than just a winter garden. It is a particularly prestigious project at Canary Wharf, a new office property complex in the centre of Docklands, the former port area of London. The East Wintergarden is the luxury version of a conference centre, but when even Sir Elton John had to cancel his concert there because of the poor acoustics, it became a case for MICROSORBER.

Left: East Wintergarden in the centre of the new office complex Canary Wharf in London. Right: A modern-day steeplejack installs the MICROSORBER sheeting

682 sq m of marble floors and a 27m high glass dome – the East Wintergarden really is something special between all the tower blocks and definitely an attraction. But the best looks don't help if the event centre keeps losing its musical highlights. The acoustics problem finally landed on the desk of Torsten Haß, the project manager at KAEFER in Butzbach, in November 2005. His mission was to reduce the echo time from six to two seconds. His solution was 2,000 sq m of transparent MICROSORBER foils below the glass dome.

So far so good – after nearly a year and a half of meetings, bids, more meetings and more bids the contract for some €300,000 finally went to KAEFER. The installation took just four weeks, thanks to the excellent performance and teamwork of the international KAEFER team on the job.

The preparations were almost a bigger challenge – a normal hydraulic lift wouldn't reach the glass dome 27m above the ground. OK, so we put the lift on the gallery running around the inside of the room – but the hydraulic lift doesn't fit in the normal building lift. What about a fork-lift truck? Too small for the hydraulic lift...

The solution was a hydraulic boom lift with a 50m boom. But then came the next problem – there is only one of those in Britain and it costs €1,000 a day to rent – quite a lot when you need it for four weeks. But Thorsten Haß didn't give up – he searched the internet, found a similar lift in Düsseldorf, had it brought to London, and it was still cheaper than renting the British one.

The next problem was waiting at East Wintergarden: in the corners even the boom was too short, so industrial climbers, or steeple jacks as they used to be known, were called in. They needed a crash course in installing the MICROSORBER foils, but then discovered that no bolts were allowed to be attached to the struts of the glass dome. So Torsten Haß revealed his talents as an inventor and developed suitable clamps. Finally in August 2007 1,800 sheets were suspended in East Wintergarden and the measurements showed that everything worked as intended – all's well that ends well.

Open day at BMW World in Munich – and the open doors are from KAEFER

BMW is famous for its tagline, "The Ultimate Driving Machine", but since 23 October 2007 the title of "The Ultimate Pick-up Bar" could also be applied to the new BMW World in Munich. It is primarily an exclusive car collection centre but also an event location, culinary meeting place, cultural hall and above all an architectural highlight, to which KAEFER also made a key contribution.

In April 2006 KAEFER was awarded the contract for the insulation and interior finishing work at BMW World. It was a demanding project which was carried out in just 14 months. Both the warm and cold insulation as well as the constructive fire protection were to be fitted, both of which were completed by KAEFER Industrie GmbH in Munich. The Interiors department of KAEFER Construction GmbH had over 120 fitters on the site at peak times, installing 4,000 sq m of seamless cooling / acoustic ceilings made of glass granule panels. KAEFER was also responsible for 'activating' and installing the piping in the ceiling for these areas. The work also included single and double doors with a fire resistance standard of T-90 and Category III soundproofing. Some 1,800 sq m of illuminated ceilings made of stainless steel and matt glass with rounded borders were installed, with a radius of 1.5m to 20m. These ceilings were also partly installed as cooling and heating ceilings.

The biggest challenge was building the auditorium, where the whole interior is clad with 1,800 sq m of perforated and anodised black aluminium panels 4mm thick. A 500 sq m black aluminium ceiling with over 300 differently shaped panel elements was also installed. This was matched by entrance doors with super-noise protection qualities, clad in aluminium and which had to be welded to the frame to ensure stability. In the auditorium the interpreters' cabins and the sound and lighting desk were also insulated and clad with black aluminium coffered panels.

All in all no less than 20 tonnes of aluminium in the form of panels, plates and coffers in every conceivable shape and size were poured into the building. It was a superlative project which was completed to BMW's entire satisfaction thanks to the project team ably led by Kai-Uwe Muschalle and Jürgen Mangold.

And so on 23 October BMW World opened its doors to the public. It's an impressive edifice; just eleven concrete pillars support the steel construction weighing 3,000 tonnes, which itself holds some 16,000 sq m of glass. This temple to the BMW marque has 1147 rooms. It is intended as a meeting place. There are no guards on the door and no entrance charge. The restaurant, bistro and club have seating for a total of 422 and cater for every culinary taste from sushi to Wiener Schnitzel. The auditorium is already 70% booked out for 2008 and the Munich Philharmonic has already held rehearsals there. There is even an on-site bakery with its own kneading machine and oven. Altogether some 900,000 guests are expected to visit the BMW World every year. BMW customers who pick up their new car there also receive a restaurant voucher, 20 litres of fuel, a guided tour of the neighbouring BMW factory and a visit to the BMW museum.

KAEFER in the cinema

No, this is not part of our new PR offensive – we don't want to become film stars. But when a new multiplex cinema was being built in Bremerhaven we were happy to contribute our expertise. Modern cinema surround-sound needs perfectly adjusted acoustics to deliver the full effect, and we know exactly how to do it. The Kipp-Wübbern working party, which is building the Cultural and Service Centre Bremerhaven on behalf of the Bremerhaven Savings Bank as investor, duly gave KAEFER the contract to install all the cinema ceilings, which were fitted with "Rockfon". Whilst we were there we put up the partition walls in the neighbouring rooms too, so the action movie also had a happy ending.

Almost ready for take-off: the last mile for the A400M in Seville

"We're all off to sunny Spain..." Lots of people take off to the South in the summer and this year the first pipe of the military transport plane A400M was also on board a flight to the final assembly line in Seville. That is where the first transport machine of its type is being assembled and prepared for its official maiden flight in summer 2008.

The first section of the A400M is loaded at Bremen Airport

The four sections of this "shipset" were previously put together and fitted out at the Airbus factory in Bremen. The necessary components came from no fewer than five different countries. After four years of intensive preparation work the first pipe was ready for transport on 20 August 2007 and was taken to Seville in the Airbus Beluga.

KAEFER Aerospace is actively involved in the design process for the A400M as an Airbus Risk-Sharing Partner. The company is responsible for the design, production and delivery of some 200 air conditioning tubes as well as the primary insulation on the new military transporter. KAEFER staff are also installing around 900 insulation mats on each aircraft.

The design of the mats and air conditioning tubing is the exclusive responsibility of 15 aeronautical engineers from KAEFER Aerospace, who are led by the programme managers Torsten Dehlwes and Torsten Borsch. They work very closely with the Airbus engineers on a continual process of improvements to the new transport plane.

As the two have worked together for many years, Airbus trusts KAEFER to deliver the goods. This meant that Airbus was able to call on three KAEFER employees to help them with the final assembly of the A400M on the assembly line in Seville. In Bremen too, KAEFER as supplier has its own office within the Airbus production hangar, directly below one of the A400M pipes. This enables the engineers to make changes at short notice and react promptly to client requests.

The stage is set for more joint work in the future. To date some 200 aircraft have been ordered by ten different countries, with more orders on the way. The benefits of the A400M are striking: its extended range of up to 8,800km, four engines with 11,000 horsepower each and a cargo capacity of up to 37 tonnes leave all potential competitors way behind.

Airbus A330/A340: from seven to ten

Airbus has set its sights on higher things, and is taking KAEFER along with it: by 2010 production of the Airbus A330 and A340 series is to be ramped-up from seven to ten aircraft per month.

A330 from the Airbus twin-aisle programme

That's not a problem – on the contrary. For KAEFER Aerospace the production increase means expanding the existing capacities. The company produces the primary insulation for the twin-aisle planes at its own production facilities in Seifhennersdorf in Saxony. The insulation is then delivered to the Airbus factory in Hamburg Finkenwerder. There some 20 KAEFER staff attach the insulating mats directly to the inside of the fuselage, where they provide optimal thermal and acoustic conditions inside the cabin of the aircraft. KAEFER supplies the entire German share of primary insulation for the A330 and A340.

Eleven employees of OLUTEX France, a wholly-owned subsidiary of KAEFER Aerospace GmbH, install cable looms in the planes on the final assembly line in Toulouse. The French colleagues also fit floor plates on site.

As a result of increased orders, Airbus intends to ramp up the production rate of the A330 and A340 series from seven to eight aircraft per month in 2008. In 2009 a further increase to nine aircraft is planned and from 2010 a total of ten planes is due to leave the final assembly line every month.

The Airbus A330 and A340 series are medium to long-haul aircraft which have been in service for almost 15 years. The two aircraft types were planned with almost identical configurations. Apart from the different number of engines (A330 has two and the A340 four), they have the same wing geometries, steering gear and fuselage sections and can carry up to 420 passengers. More than 830 of the A330 and A340 planes have been sold since their first flights in the early 90s.

Simulating the life of an airplane

Few products need to be tested as thoroughly as those which are used in airplanes, since each error could be fatal. Such components are therefore required to conform to very high international standards. KAEFER Bremen is now equipped with a climate chamber that is capable of simulating the entire lifetime of an airplane. Some tests require as many as 240,000 cycles of changing conditions.

The first set of components having to endure these tests consists of 70 recently developed parts for the ventilation system of an Airbus plane. These components of various shapes and sizes were developed by KAEFER Aerospace at its own production facilities in Nobitz, Germany, and they have to prove in the climate chamber that they can withstand extreme pressure changes, temperatures and humidity levels. In the course of this procedure, scientists perform leakage tests and make sure that the ducts retain their required shapes. After that, serial production can commence.

Testing the first 70 parts takes six months – a considerable effort for products that will not be used in a mass market. Yet it will pay off, because the aerospace industry is always searching for innovative materials. Reducing weight without compromising quality can be a major advantage in this competitive environment.

Things are taking off for KAEFER Aerospace Spain: new offices and new orders

Nearly two years ago KAEFER Aerospace set its sights on Spain and has now landed safely on the Iberian Peninsula. Orders from the EADS CASA plants in Madrid and Seville have been an ideal starting point, and now KAEFER Aerospace has increased both the scope of its operations and its own "ground staff" on site.

As soon as the KAEFER Aerospace team around Managing Director Mariano Santiago Pugés was in place, things started getting very busy:

April 2007: new order received for A330-200 refit. EADS Construcciones Aeronáuticas S.A. (CAS) is converting Airbus planes into Multi Role Tanker Transporters (MRTT) for the Royal Australian Airforce. The A330-200 aircraft are being fitted with additional tanks and refuelling systems at the CASA factory in Getafe near Madrid. The refuelling systems are attached to the wings close to the engines, so that two planes can be refuelled at the same time. KAEFER Aerospace is responsible for the engineering, construction, production and assembly of the primary insulation elements that need adjusting.

July 2007: new order received for C-295 and CN-235 window curtains. CASA also brought KAEFER Aerospace on board for the military aircraft CN-235 and C-295. Starting this year, KAEFER is responsible for supplying the window frames and integrated sun-blinds. It's the first order for an interior component acquired by the KAEFER Aerospace team in Spain.

August 2007: new order received for A330/A340 and A300 insulation. KAEFER also won the contract for the Airbus programmes A330/A340. Now the Spanish colleagues are also doing their bit for the insulation, alongside the German KAEFER teams. KAEFER manufactures the primary insulation for the passenger doors on new aircraft of this type and delivers them to Seville.

September 2007: new order received for A400M final assembly line (FAL) support. KAEFER is deploying seven colleagues to work on the FAL of the A400M on behalf of Airbus. The KAEFER staff will provide support for mechanical and electrical work on structural elements such as the steering gear. The Spanish employees were recruited specially for the job and prepared for the assignment with specialised training at Airbus in Hamburg.

In October 2007 all KAEFER staff in Spain moved to new offices in Seville. The premises are situated in the Aeropolis Aeronautical Park, a large industrial zone reserved for companies in the aeronautical and aerospace industries. The park is next to the CASA production site, so that KAEFER Aerospace is now in direct proximity to the client and can respond swiftly to all requests. EADS CASA is extremely interested in extending the scope of its cooperation with KAEFER Aerospace Spain. It has also given the Spanish colleagues glowing references and actively supports the company's further development.

All on track: KAEPLY panels for high-speed trains in China

CRH 3 sounds a bit like R2D2's big brother from Star Wars, but in fact it's the Chinese version of the German high-speed train ICE. Many of the carriages on this type of train are now being fitted with KAEPLY floor panels.

KAEPLY stands for KAEFER plywood, which consists of enhanced plywood boards with special acoustic properties. The main advantage of KAEPLY flooring systems is that the client does not need any additional insulating material, e.g. rubber, and so saves costs, space and weight. KAEFER Products and Systems Sales GmbH has trounced the competition with this in-house development and in February 2007 received an order from Siemens for fitting three CRH 3 trains with a total of 567 KAEPLY panels. The flooring system was delivered to Krefeld in North-Rhine Westfalia.

The KAEFER flooring system installed there convinced even the most sceptical observers, and so in May 2007 the next order was received. The Ministry of Railways China, the equivalent of Deutsche Bahn AG in Germany, needed more of the CRH 3 high-speed trains.

For this order KAEFER is supplying over 9,000 flooring panels to a Chinese cooperation partner in Tangshan, Northern China, where the finishing and installation take place. The total value of both projects amounts to some €1.8m.

KAEFER has had to overcome several obstacles on the way, however. Only first-class plywood is used for the floor panels, which wasn't so easy to get hold of in 2007. The problem – as so often – was the weather. Due to the unusual weather conditions the previous year the timber suppliers in Finland hadn't been able to drive their heavy vehicles into the forests to harvest the raw materials. This led to bottlenecks on the plywood market which lasted all year. Nevertheless, KAEFER managed to purchase the material required and deliver the first KAEPLY panels to China on time.

TGV: the record-breaking French train has KAEFER on board

The French high-speed train broke a new record in 2007, crossing Northern France at a velocity of more than 574 km/h, and KAEFER was on board. KAEFER Products and Systems Sales has supplied ceiling systems for the TGV since 2005, and since February 2007 they have been made in Nobitz in Thuringia.

The French high-speed train TGV sets a new speed record of 574km/h

A syndicate made up of the French Alstom and the rail vehicles division of Canadian Bombardier were renovating 22 earlier generation double-decker TGVs, and in early 2005 KAEFER was awarded the contract for supplying RECORE ceiling systems to the project. A total of 154 carriages were refurbished and 26 to 28 ceiling elements were needed for each one.

The basic components for these ceiling systems are manufactured in the RECORE production plant in Timrå, Sweden. The following processing stages initially took place in Muggensturm, Baden-Württemberg.

Whilst the first contract was still running, KAEFER received a further request in autumn 2006 for fitting out another 28 trains. This time, however, the Alston/Bombardier consortium made higher demands of the production site. In order to satisfy the client's audit requirements the secondary processing was moved from Muggensturm to Nobitz in Thuringia. The different components of the ceiling system have been assembled at the KAEFER Aerospace site there since February 2007 and are then delivered to the customer.

The last units of the order are due to be delivered by the end of 2009. The total volume of both contracts amounts to around €1.5m.

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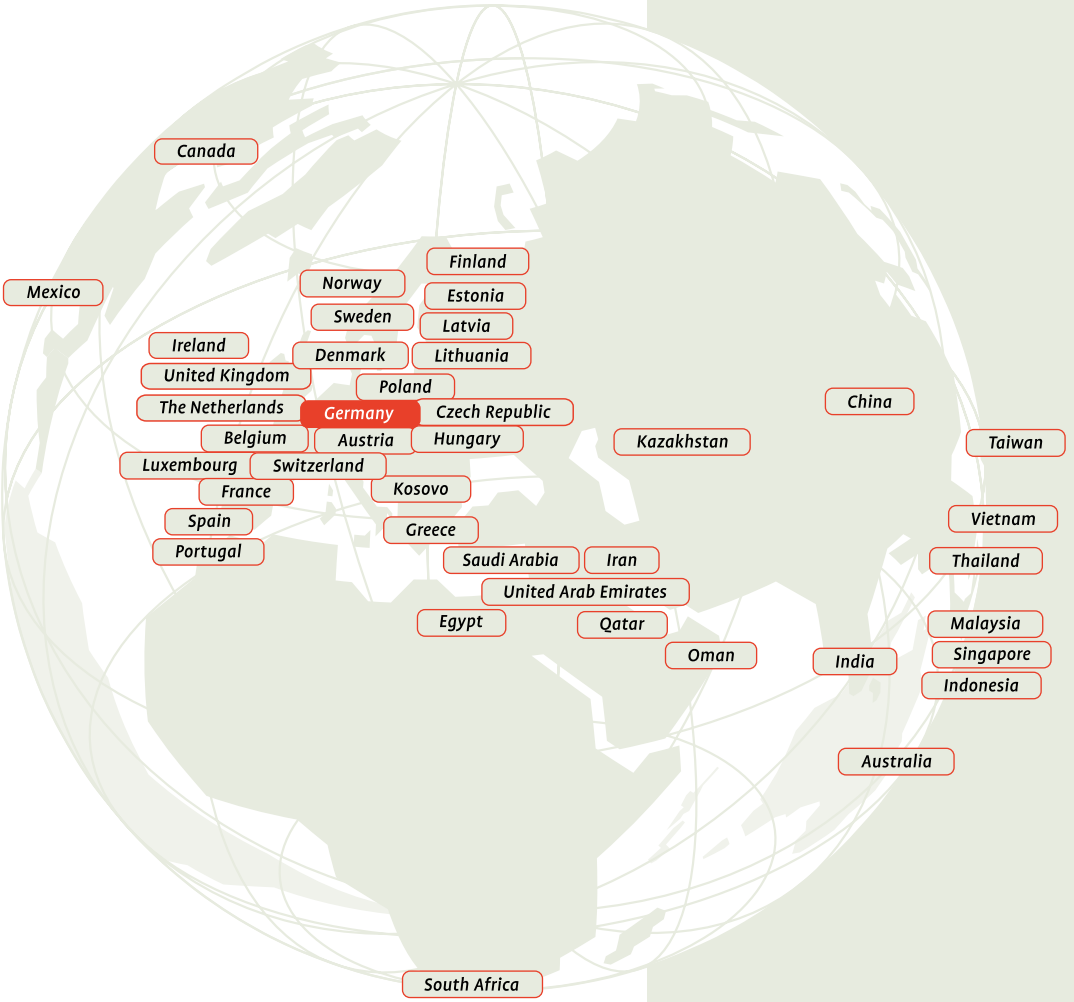

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