

BAUER REVIEW

FOR EMPLOYEES AND FRIENDS OF THE

BAUER GROUP COMPANIES

2009

39





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In the late summer of 2009 work began on the tunnel beneath Munich's Central Ring Road (Mittlerer Ring) in the south-west of the city. Bauer is constructing piled walls by the top-down method as well as installing other retaining structures.



Status report

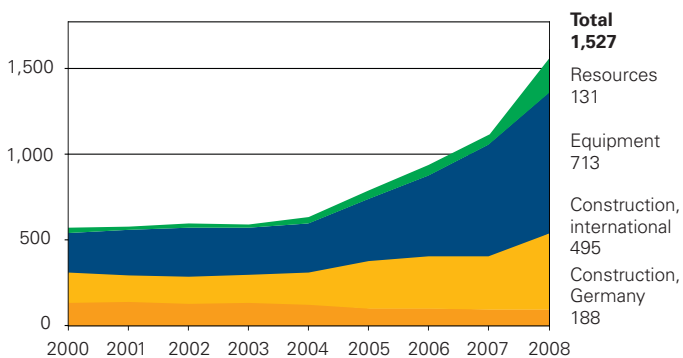
As it entered 2009, the BAUER Group was emerging from a record previous year, yet facing up to the challenges posed by the most severe economic crisis of the post-war era. As always at this late stage of the year, we are taking the opportunity to review the progress we have made thus far.

Business in 2008 was outstanding; it was a year of superlatives all-round. We increased our total Group revenues by 26.4 percent to EUR 1,527 million and after-tax profit improved by 44.5 percent to EUR 107.5 million – clearly surpassing our planned targets. Our Construction segment made particularly pleasing progress, increasing its revenues by over 32 percent. Our Equipment segment likewise succeeded in maintaining the high levels of recent years. The recently established Resources segment utilized its first full year in business to stabilize its structures.

However, 2008 was also a year which saw some extremely bad news too. We were of course keeping an eye on the subprime crisis in the USA right from the beginning. We saw with mounting concern how the threatening clouds gathered as the year progressed. The spiralling loss of confidence in the banking system then culminated in the collapse of the Lehman Brothers investment bank. By then the capital markets had all but dried up, and the financial crisis was turning into an all-consuming global economic crisis. It was clear that the problems would hit most of our customers hard, and so would inevitably affect our business. Occasional crises are part and parcel of the industry in which we operate, and we are used to confronting the challenges they

Development of total Group revenues by segment

in EUR million (segments after deducting Other/Eliminations/Consolidations)



pose, but we were well aware that an economic crisis on a global scale would certainly leave its mark in a painful way. We were also confident, however, that our international presence placed us in a strong position to withstand such an event.

The marked decline in orders received from late 2008 onwards worsened dramatically through 2009, especially in our Equipment segment. Operations were relatively unaffected in the early part of the year, but as the year went on the crisis became increasingly pronounced in terms of falling revenues. Overall, our 2009 revenues are more than 15 percent down, at around EUR 1.3 billion. Profit has been hit much more severely, dropping to around a third of last year's. Nevertheless, in view of the considerable turbulence that has occurred we can be reasonably satisfied.

The crisis has forced us to make some tough cuts in our business, just as is the case in other companies. In the Equipment segment, we had to let almost all temporary agency staff go, and most of our permanent workforce was put on short-time working in the second half of the year. All the other segments are likewise adjusting their costs to the changed situation in order to remain profitable in future. These measures entail some painful remedies which are sadly unavoidable. One small consolation is the fact that the miserable state of affairs is no fault of ours, yet we – like many others – are having to suffer its effects.

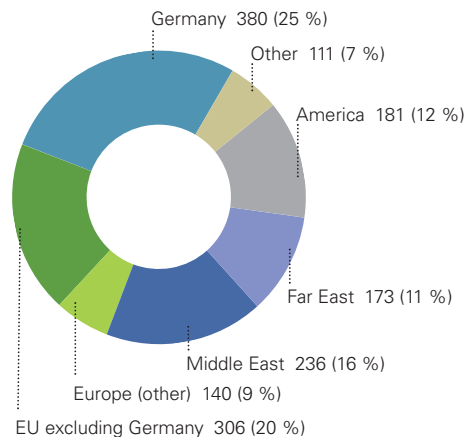
The current crisis is, however, showing that we have been pursuing the right strategy in our business over recent years. The Equipment

segment is facing the toughest conditions. Our customers are responding to the crisis like virtually all others. The first thing they did was to drastically cut their capital investment. This has led to a dramatic decline in machinery orders. The collapse is most severe in relation to the smaller equipment forming part of the standard inventory of all specialist foundation engineering companies. By contrast, there are some good prospects for sales of large-size machinery purchased for specific projects. The many economic stimulus packages being implemented by governments around the world are even in some cases driving a boom in large-scale infrastructure projects. Our new deep-level drilling rigs may well bring us additional business over the coming year. The Construction segment is currently a key stabilizing factor for

Geographical breakdown of total Group revenues

in EUR million

**Total
1,527**



us. Though business is declining somewhat after the growth seen last year, and some markets are tough, there are also some regions in which positive progress is being made. Some very large projects in prospect may well rapidly improve the picture. In the Resources segment – at present still our smallest segment – there are even good prospects for growth. The products and services it supplies are needed even more in times of economic weakness. Environmental technology, the mining of natural resources and water are issues which are of particular importance at present. We expect to see significant growth in this area over the coming years.

As you can see, our three business segments have enjoyed very mixed fortunes so far in 2009. Our established strategy is proving particularly beneficial in such a difficult phase. To draw an engineering parallel: even though the balance may shift, three supporting pillars are still the most stable system. In recent years the Equipment segment has proved to be our strongest segment; at present Construction is helping to stabilize our business; and with Resources we now have a third pillar.

Of course, the situation is certainly not a comfortable one. If we sit back and do nothing we risk permanently damaging our business. A proactive approach, taking opportunities as and when they arise, will help us to emerge strong again from the crisis. We are making use of this time to perfect existing methods and develop new products and processes, and to enhance staff training. All in all, despite the difficulties faced, we believe that the lasting impressions of 2009 will not all be bad when we look back. I would like to thank all employees for their efforts and commitment through these difficult times. I would also like to take this opportunity to thank all our customers and business partners most warmly for their cooperation and support. I leave you with a sincere wish for us all to have the confidence to believe in our strengths. We will face further challenges in 2010.



From the Arctic to Tierra del Fuego

Bauer on the American continent





The discovery of America can be traced back to 1967 as far as the BAUER Group companies are concerned. That was when the first licence for the Bauer anchor – at the time not yet 10 years on the market – was acquired in the USA. A specialist foundation engineering company was carrying out anchoring works in Washington and Boston, and soon afterwards also in other cities on the east coast.

Bauer began carrying out its own construction projects in the USA 15 years later, as part of a joint venture with specialist foundation engineering contractor Raymond. Subsequently the Schrobenthausen-based business established its own local arm, Bauer of America, to carry out its projects, and since 1992 it has also operated subsidiary Coastal Caisson, located in Florida.

Gradually contracts began to come in from outside of the USA. In 1991 the company built the foundations for the new terminal at Vancouver Airport in

Canada, on a vibro compacted large area. The up-and-coming Equipment segment then also began to achieve success on the North American market. Bauer's machinery sales operation has been firmly established in America since 1998, and now operates its own in-house production and service facilities.

Following the map further southwards, the countries of Central and South America may not have the economic power of the USA but they do offer their own business opportunities. The development of the Panama Canal in recent years has been a major construction project which has attracted a great deal of publicity worldwide. The small country at the narrowest point between North and South America is the ideal base for advancing operations all the way down into the northern regions of South America. Wherever Bauer know-how is in demand, opportunities are regularly arising. Indeed, Bauer has to date also worked on projects in Mexico, Chile, Argentina

and the Caribbean. Recently Brazil has emerged as a growing market offering bright prospects for the future.

The American market – North and South – provides potential for large-scale projects as well as posing some major technical challenges to Bauer's specialist foundation engineering operations. The vast distances alone are a barrier to bidding for even simple, routine foundation projects or excavation pit works. One look at the map illustrates the scale of the challenge: in Canada, the USA and Brazil, for instance, the American continent is home to three of the five largest countries by land-mass on earth.

The work is very varied. Some contracts recently acquired by BAUER Resources GmbH – mining projects in Canada and Alaska – were actually initiated by Bauer Maschinen. As a result of this move, all three segments of the BAUER Group – Construction, Equipment and Resources – are now operating on the other side of the Atlantic.

Specialist foundation engineering in the USA

When people in Europe talk about "America" they usually mean primarily the United States. Bauer, too, first began its American adventure in the USA. Contractor Harry Schnabel's company was carrying out specialist foundation engineering works in a number of cities along the east coast and acquired a licence for the Bauer anchor. From the late 1960s onwards, a close and enduring personal relationship formed between Harry Schnabel and Dr. Karlheinz Bauer. Following those initial licence acquisitions, it took more than one and a half decades – until 1984 in fact – for Bauer to begin carrying out its own works. Even 25 years later, the company's engineers are well aware of what the Boston Hynes Auditorium project meant in terms of its development on the Ameri-



Difficult: the Acosta Bridge in Jacksonville

can continent. The contract involved working from an underground parking garage to reinforce the foundations preparatory to adding more floors onto the complex. Two BG 7 rigs with shortened masts for low-headroom operation were deployed to drive the piles. Because the competition appeared to be taking an inordinate interest in the goings-on, the machines were for a time hidden behind tarpaulins. Owing to the precision work needed, the job was not a profitable one, yet it did deliver valuable experience for subsequent low-headroom operations.

It was around then, too, that Bauer entered into the joint venture with Ray-

mond – the largest specialist foundation engineering contractor in the world at the time. After the contract for the excavation pit and foundations for the US Embassy in Cairo had been awarded to Bauer Egypt ahead of Raymond, the Raymond CEO – a former General in the United States Corps of Engineers – visited Schrobenhausen to initiate the partnership. "If you can't beat them, join



Successful: remediation of the Hodges Village Dam

them," was his comment. The alliance promised to provide a sound basis for acquiring further work in America. Paul Scheller was appointed director of operations on the Bauer side.

What Bauer did not know when it entered into the partnership was that Raymond – operating primarily in the oil industry – had by then completely overstretched itself. The business was already on an unsteady footing. A management buy-out had taken place, financed by so-called junk bonds. A few years after the partnership was launched, Raymond went bankrupt. Thomas Bauer succeeded in keeping the Schrobenhausen business out of the Raymond collapse. At the last moment, based on a contract extending to just 15 lines (highly unusual by American standards!), Bauer acquired Raymond's shares in the joint venture company.

Thus in the mid-1980s Bauer stood alone, with no local partner, on the unfamiliar continent. It was not easy to adjust to the

American way of doing things. Despite the long-standing influence exerted by European immigrants, especially in North America, Thomas Bauer discovered that a business culture had developed which was alien to the European approach. The USA has no binding legal canon in the way that Germany does; each dispute is judged on its own merits. To ensure operations are kept on a sound legal footing, experience showed that the only route to success was to employ American personnel loyal to the company.

One of the dominant features of the American construction business are the labour unions, which again are in many ways different from the German idea of a trade union. There is a separate organization for each trade (of which there are many) and they all play a major role in matters ranging from job allocation to accident insurance, and all of them have their local delegates on-site. Working with the unions is made even harder by the fact that they all compete against each other, so a European contractor is confronted with a real jungle of relationships to navigate through. The US construction industry is characterized by its very stringent safety regulations. Safety and security personnel are present on every site; a safety engineer is an integral part of the team. All visitors have to undergo a safety induction, and are provided with a helmet and goggles as soon as they enter the site. Some German engineers find the safety regime rather exaggerated, and a hindrance to efficient working, yet the positive aspects of such rules should not be overlooked. As Thomas Bauer comments: "Some things might seem to us to be rather over-the-top, but the US system does illustrate how lax we in Germany are when it comes to safety."

Following the demise of Raymond, Paul Scheller headed Bauer of America. A whole series of profitable projects were carried out, including dam sealing works such as for the New Waddell Dam and the Hodges Village Dam, an excavation pit for an underground parking garage in Portland, Maine, stabilization of a stretch of railroad by piling in North Carolina, and reinforcement of bridge foundations in Boston and New York.

After spending a year on his own in the States, in 1985 Scheller brought over his



Jet grouting by Bauer machinery in downtown New York

wife and three daughters to live with him in Boston. People in the USA tend to buy their homes rather than rent, as is more often the case in Germany. And everyone is very neighbourly: "The furniture van has barely been emptied before someone comes along with a plate of cookies by way of welcome."

A restructuring of the international business saw Paul Scheller reassigned back to Germany in the summer of 1989. Not without some regret, as he recalls: "I and my family really liked it over there." Friendships were upheld, and over the following years the family enjoyed many holidays back in the USA. After Scheller was already back in Europe, his contacts brought about a project which developed into a real crisis, but ultimately ended all to the good. It was 1992, and the project was the Acosta Bridge in Florida. A new bridge was to be constructed parallel to the ex-

isting one, prior to the existing one being demolished, with one lane at a time scheduled for completion.

Bauer accepted the job, but encountered such major problems executing the first lane due to the difficult working conditions on the water that a considerable loss was made. For the second lane it was decided to acquire a local contractor – Coastal Caisson. The company's management believed that its local experience enabled it to handle the project with ease. Sadly, that was far from being the case. The problems encountered, and the losses made, were the same. Fortunately, some tough negotiating forced the former owner to absorb a large part of the losses, so the matter was brought to a conclusion without too much damage.

Bauer now had two construction businesses in the USA: Bauer of America – now headed by Ed Forte – and Coastal Caisson. However, not every project completed with technical merit delivered a profit – as Theo Egle and Martin Heinrich, the Bauer of America management team based in Schrobenhausen, came to discover. Among the many successes, a number of jobs remain particularly in the memory because of the stresses and strains they entailed.

Technical difficulties arose in 1993, for example, when installing the cut-off wall at the Meeks Cabin Dam in Wyoming. The team was unable to work the ground properly; the roller bit milling wheel set



Coastal Caisson working in Tampa, Florida

technology was not yet sufficiently advanced. And engineers were at a loss to establish why the cutter was not coming up to speed. It was only when Erich Pöll, one of the top workshop technicians in Schrobenhausen, applied himself to the problem that a remedy was found: the thin air at 2,700 metres above sea level was bringing the entire hydraulic system

Placing the highest demands on the crew and their equipment: cut-off wall for the Red Dog Mine in Alaska



to a standstill. The project was not a financial success, but there was some consolation in the appreciation shown by the customer. Engineer Martin Heinrich recalls: "We completed the project optimally in technical terms. The Corps of Engineers was generous in its compliments."

Even more trouble was encountered in 1998/99 on the Flushing Bay project, a large-scale rainwater-retaining storage basin in New York State. The logistics alone were highly complex, and the problems continued through the execution phase. After lengthy negotiations on a number of disputed issues between customer and contractor, irritation on both



Redevelopment of the Hoover Dike around Lake Okeechobee; see also picture below



Hans-Joachim Bliss (on left in top picture) regularly gets together the Bauer management team in America. Here in front of the new Coastal Caisson branch office north of Tampa, Florida, opened in summer 2008.

sides engendered an unsustainable working climate which culminated in the engagement of lawyers, mediation tribunals and court action. Hans-Joachim Bliss, director of American operations on the management board of Bauer Spezialtiefbau, has overseen the proceedings with great personal commitment over the last nine years, and they are still unresolved. "The two-company strategy did not work," comments Peter Teschemacher, Managing Director of BAUER Spezialtiefbau GmbH. After Flushing Bay the Bauer of America corporation was closed down. Coastal Caisson gradually began to achieve success – first headed by Dick Walsh, and since 2006 by Chuck Puccini. In the last eight years sales have tripled. The Florida-based company has carried out many small and medium-sized jobs, including foundations for bridges and reinforcement of foundations on power station modernization projects. It has also worked in the famous Everglades of its home state, driving foundation piles for overhead power cable pylons working from floating pontoons.

One of the factors in the success of Coastal Caisson has been the geographical limitation of its operations. As Hans-Joachim Bliss explains: "We monitor the entire US market, but we concentrate on the south-east." This avoids having to transport equipment over long distances. Also, the unions are not as strong down south as in the north-eastern states. In the past Coastal Caisson worked primarily as a subcontractor but, Hans-Joachim Bliss goes on, "we have recently also been working more directly on behalf of customers."

The major project at present is the remediation of the Herbert Hoover Dike around Lake Okeechobee near Jacksonville, Florida. The 230 kilometre long dike encloses the third-largest drinking water reservoir in the USA. Begun in 1910, the dam has been repeatedly redeveloped, but remains vulnerable to hurricanes. In 1926 and 1928, flooding led to several thousand fatalities. Now several hundred million dollars are being invested in sealing and safety systems. Bauer Spezialtiefbau suggested using the



CSM (cutter soil mixing) system to execute the sealing work, and had to carry out two test cuts before acquiring the contract for the first 5.6 kilometre section. The wall extends down to a depth of 25 metres on average. Work is being carried out with a CSM unit on an RG 25 rig. A BG 28 is pre-drilling in order to clear a layer of clay and loosen a rock layer.

While Coastal Caisson was working the market in the south-eastern USA, from 2004 onwards machinery bearing the Bauer logo also began reappearing around New York. Underpinning & Foundation, the US subsidiary of Swedish construction company Skanska, was looking for a reliable partner for grouting

work. Bauer supplied equipment and personnel. The work in downtown New York is helping to reshape the area around the former World Trade Center, at the site of the planned new Freedom Tower. It is also worth mentioning in this context that works to clear the "Ground Zero" site also involved the deployment of Klemm anchor drilling rigs.

Bauer Resources in Alaska

An extraordinary project is being carried out under the coordination of BAUER Resources GmbH in the extreme north-west of the United States, in Alaska. 140 kilometres north of the Arctic Circle, a diaphragm cut-off wall is being con-

structed for the largest zinc mine in the world, the Red Dog Mine. Work began in 2007 and is scheduled for completion in 2010. For the highly polluted sedimentation pit of the mine, a 1,500 metre long, 80 cm thick and up to 55 metre deep diaphragm wall is being constructed using a BC 40 cutter. Because of the extreme weather conditions, work can only be carried out from mid-May through to mid-October. The project is being managed by Holger Itzeck and Joachim Urs Müller. At the customer's request, the work is being overseen by an experienced Bauer mechanic and a cutter operator, who are also helping to train the local workforce.

Bauer Maschinen in the USA

It was in 1998 that Bauer's machinery selling operations were placed on a somewhat firmer footing in the USA. Engineer Christian Gress was seconded by Managing Director Erwin Stötzer to work for several years in Boston. It was at a time, as Gress points out, "when the crisis on Far Eastern markets was forcing us to become more active in other regions."

Together with his wife Ulrike, he undertook the new challenge with enthusi-



Christian Gress with intern Kathrin Solbach



asm. The couple moved into a house just outside Boston, bought furniture (some of it second-hand), and started work on a laptop placed on a coffee table in the almost empty living room: "I worked through a trade directory to find the addresses of all the construction companies carrying out specialist foundation engineering and drilling."



The San Francisco-based Malcolm corporation is working with Bauer BG rigs in Las Vegas

Gress contacted all the companies he identified in person. It proved useful that the recent BAUER Group acquisition Klemm Bohrtechnik already had an American sales operation, and so was in a position to help expand the Bauer business. Christian Gress set about systematically working through the potential US customer base. "I went through the list, ticking each of them off in turn. I ultimately got to know 45 of the 50 states as a result. I had a frequent-flyer card with three US domestic airlines."

After three years Gress returned to Schrobenuhausen. The day of his scheduled departure is one he will always remember: The house was almost empty, with just a TV set left in the living room. During the morning, the TV news

began reporting on an attack on the World Trade Center in New York; the date was September 11, 2001. "There was no way we could go on packing. With the furniture removers, we placed the couch back in front of the TV and sat watching the horrific events unfold."

Christian Gress initially found it tough selling Bauer's BG rigs. The Americans were hard to persuade of the advantages offered by European equipment. How do you explain to an engineer who has been using the same tried and tested drilling rigs for years that the new one offers a technically improved solution? It proved difficult to break down the tradition of established methods. Success came slowly, but it came. Hard work created an initial solid customer base and, in

1998, the Schrobhausen-based engineers showed just what Bauer machinery was capable of with the deployment of low-headroom rigs for the major Boston Central Artery project. For years Bob Carter supported the sales operations in the USA. With CES in New Jersey, and later ECA in Pittsburgh, domestic distributors were soon also on-board. Christian Gress has only positive things to say about his dealings with the Americans: "Once they become your friend, they stay your friend!" He also learned about resolving conflicts the American way. As Gress comments: "Americans are quick to send in the lawyers, but on the other hand they see legal action as something of a sport too."

A major step forward for sales operations in the USA came in autumn 2005 with the acquisition of Pileco, Inc. based in Houston, Texas. Pileco was very successful selling diesel hammers manufactured in China. Bauer bought the specialist business from German-originating entrepreneur Otto Kammerer, who passed away at the age of 74 in February 2009. The major success of Pileco really took off in the 1970s, when Kammerer succeeded in selling diesel-powered hammers – at the time still made in Germany – to the oil industry. The product also built up a market with numerous widely respected innovations.



On show: Bauer rig and Pileco products

Since its acquisition of Pileco, Bauer has had a highly effective service base. Moreover, a number of Bauer employees from Germany now live in the States, including product manager Manfred Dreier, who is based in San Francisco, and service manager Markus Lönner. Back in Schrobhausen, the American sales operations of BAUER Maschinen GmbH are headed by Robert Kaindl. The Pileco management has been restructured in 2009 with the appointment of Dan Dragone and Tom Jarboe. George Smith, until recently was CEO, is now Chairman.

An hour's drive north of Houston, Texas, on Interstate 45 is the city of Conroe. This is where – over just a few months – the US plant of BAUER Maschinen GmbH was constructed. Production has been running at the new facility – representing a total



The Conroe plant was officially opened at a ceremony attended by a number of guests of honour and by the employees.

investment of EUR 20 million – since July 2009. An official opening ceremony was held in October 2009.

There are important reasons for establishing an in-house production facility in the USA. Manufacturing within the dollar zone is more vital than ever before. The currency exchange risk, which can severely hamper business, and which still cannot be excluded entirely at present, has to be gradually eliminated in respect of the company's standard equipment range by expanding production in the USA. However, specialist equipment

Drilling rig production was launched at the Conroe plant in summer 2009.



manufactured in Europe will continue to play a major role in the USA in the future. Moreover, a US production base places us closer to our market. The machines are of domestic origin; "Buy American" is more than just a slogan. Now that production is underway, an American sales and service team will also be built up. And some particular strengths of the business can be more effectively exploited: rapid response to customers' wishes and execution of custom builds; supply of drilling accessories and retrofitting on imported machinery.

"And the USA is not a cheap-labour location." This comment from Dr. Sebastian Bauer, the BAUER Maschinen director responsible for development and production and head of the Conroe project. One of the key tasks in the launch phase was to recruit and train personnel, also involving collaboration with American colleges. The Lone Star College, the renowned technical and career training centre in Conroe, has become a cooperation partner. The state of Texas and the Houston area in particular also offers geographical benefits for the business, including proximity to the Latin American market.

The Conroe plant was constructed very rapidly. Back in 2007, a team headed by Thomas Bauer began searching for a suitable site assisted by the Pileco management. In January 2008, following a final appraisal, definite approval was given for construction of the plant. The contract to purchase the site was signed in June 2008. Preliminary works – clearing and levelling of the wild land – began just two months later. The quick progress of the building work was also thanks to the city government of Conroe. In the words of Dr. Sebastian Bauer: "They really pulled out all the stops for us so that we could launch with no delay."

The mach in C

BAUER Maschinen GmbH erected welding shop, assembly shop and paint shop buildings on the 320,000 square metre site within the year. In fact, production of equipment and structural steel components was launched even before construction work on the new plant began, with Klemm anchor drilling rigs and the BG 12 initially being manufactured at a rented facility. This meant the new plant could start production immediately with an existing workforce of over 40 people. Sadly, the momentum behind the initiative was severely dampened. "It is no secret that we were surprised by the impact of the financial crisis on the Conroe development," admits Dieter Stetter, Managing Director of BAUER Maschinen GmbH. As the signs of a major economic downturn began to spread in the autumn of 2008, the original plans were scaled back, and some of the planned units were not built.

The sales team also felt the immediate impact of the crisis. There were marked



declines especially in demand for the previously strong-selling Klemm equipment. At present efforts are thus being redoubled to sell the 2009 production range: six BG 12 drilling rigs, three BG 24 rigs, seven Klemm KR 806 anchor drilling rigs and lots of drilling tools, kelly bars and leaders for Pileco hammers.

inery plant onroe



Canada - extraordinary projects

Canada is a huge country. Domestic flights cover distances inconceivable to European short-haul travellers. The second-largest country on earth stretches across five time zones, though its population is thinly spread. And Canada has a wealth of natural resources. Water is used to generate hydro-electric power; the ground holds extensive deposits of gold and diamonds, coal and uranium, and vast quantities of oil.

Bauer has participated in two extraordinary projects in Canada over the last decade: BAUER Maschinen GmbH supplied equipment for the Diavik diamond mine, and BAUER Spezialtiefbau GmbH executed the dam sealing for the Péribonka hydro-electric power station.

Bauer Maschinen began supplying equipment and deploying personnel to Diavik in 2001, shipping in a diaphragm wall cutter, four diaphragm wall grabs and jet-grouting units. The equipment was used to mine the diamond deposits

pumped out of the interior, and mining could begin.

The second segment began in 2005. On the adjacent volcano crater, a BC 40 cutter and three hydraulic grabs were used to construct a diaphragm wall. Desanders and mixers were also once again deployed. The logistical feat was remarkable: equipment was transported northwards over ice roads in winter so that work could be carried out during the short summer months.

Another mining contract executed between 2005 and 2007 was the Shore Gold project. Bauer Maschinen supplied two BG 36 rigs for diamond exploration



Péribonka: sealing in rock formations



Diavik: Bauer equipment at the Arctic Circle

in the volcano necks beneath the Lac des Gras lake, 200 kilometres south of the Arctic Circle. In order to mine diamonds by the open-cast method from depths down to 300 metres, diaphragm walls were installed to seal the dams around the volcano neck. Water was then

drilling down to a depth of 360 metres. Bauer was also involved in the execution of the highly complex project by way of a joint venture. The project was overseen by Bauer Equipment of Canada, which was subsequently assigned to BAUER Resources GmbH.

In 2005 and 2006 Bauer Spezialtiefbau executed the Péribonka dam project, some 600 kilometres north of Montreal, on behalf of power station operator Hydro-Québec. The core task was to construct 25,000 square metres of diaphragm cut-off wall in extremely tough rock formations, involving in some cases vertical rock walls and even rock overhangs at depth. The contract also involved extensive vibrocompaction and grouting. Three trench cutters were deployed on the site, including the most powerful Bauer machines of the kind ever built, for a cutting depth down to 135 metres. At times work had to be

carried out at temperatures of minus 28 degrees Celsius, and even at minus 40 when carrying out grouting under cover. Following execution of the Péribonka project – through the Bauer Foundations unit in French-speaking Quebec – operations in Canada have since 2007 been handled through Calgary-based successor company BAUER Foundations Canada Ltd. Its Managing Director is Lars Richter, who has held management posts from a relatively young age. But, as he states: “Standing in traffic jams on the way to projects in Holland, unable to use the best part of the day, was not for me.” So the opportunity to move to the wide open spaces of Canada offered to him by Canadian group leader Sebouh Balian was ideal. He now lives with his wife and two children in Calgary, where he heads a team of Bauer staff, controls a permanent machinery portfolio, and has a service workshop at his disposal.

Lars Richter is currently managing two major projects in the provinces of Quebec and Alberta. In Quebec, a Spanish-Canadian consortium is building the Nouvelle Autoroute 30 highway, bypassing to the west and south of Montreal, as part of a public-private partnership project. Bauer is constructing the foundations of the Beauharnois Bridge, a contract worth almost 30 million Canadian dollars. The canal which the bridge spans is a channel blasted into the rock whose water feeds a power station. The extraordinary hardness of the rock formation poses the major challenge. Advice was provided by Egon Stahl, Bauer Managing Director in Hong Kong, who has extensive experience of drilling through rock in his own territory.

Bauer Foundations Canada has been contracted to drive 138 piles: 60 on land for the bridge thrust blocks, and 78 in the water, from a pontoon, for the pillars.

Five BG rigs – three BG 40s and two BG 28s – are additionally being deployed. To ensure precision drilling, an IB 10 is pre-drilling down to four metres into the rock to position the tip of the drilling bucket. The two-metre diameter piles must socket four metres into the rock. Starting in summer 2009, the project is scheduled for completion in just over ten months.

In fact, as Lars Richter reports, the company did not really want to bid for this contract owing to its great distance away from the Calgary base. But the customer was looking for top-class technical expertise to handle the difficult project, and so actively approached the Bauer engineers. The example of the Beauharnois Bridge illustrates how a construction site of such a scale, far away from any company base, has to be organized. In the early months project manager Martin Pielmeier, who has relocated to Canada for several years with his wife and small child, was kept busy putting together a team of engineers and construction specialists. After having sought out a home for himself, accommodation was also needed for all the other staff. The company needed an office, and suitable local suppliers had to be found. And before work could begin, all staff had to be



Lars Richter

Drilling from pontoons into rock: constructing bridge foundations near Montreal. The first office of the site team headed by Martin Pielmeier (second from right) had more of a kitchen feel to it.



**Holger Itzeck***Deployment of specialist foundation engineering methods in exploration and mining*

made aware of the planning framework. Then it took some time to get all the machinery on site: one BG came from Florida, another from New York, both being shipped up the St. Lawrence River to the small industrial port near the site. Another BG was brought overland by truck from the distant province of Alberta, taking a week for the journey. The urban conveniences around a city such as Montreal are not available to another Bauer team: In northern Alberta, 800 km north of Calgary, near the town of Fort McMurray, oil sands are being mined. A camp has been built to house some 3,000 construction workers. The extensive open-cast mine holding the rich Canadian oil deposits is being closely monitored by conservationists. Bauer Foundations Canada has acquired an environmental contract as part of the Albion Sands Expansion project. The 22 million euro contract awarded by oil corporations Shell and Chevron involves protecting a river against the waste water from the Jack Pine Mine. This is being done by means of a 72,000 square metre diaphragm cut-off wall, on which work was scheduled through 2008 and 2009. The vertical wall is 2.6 kilometres long, 90 centimetres thick and down to 50 metres deep, and has to socket into the sealing layer of the oil sands. The execution, deploying two diaphragm wall grabs and a deep-level bucket excavator, was extremely difficult. Despite being geologically termed as sand, the ground is in fact compressed almost to the hardness of rock, so two BG 28 rigs were de-

ployed to pre-drill over long stretches. BAUER Resources GmbH is working on roughly the same latitude in the neighbouring province of Saskatchewan. French energy corporation Areva is exploring new methods there as part of a research and development project. A process developed by Bauer Resources and Bauer Maschinen is being deployed to loosen high-grade uranium ore from caverns at a depth of 180 metres and transport them to the surface by the airlift drilling method.

In conventional open-cast mining, gigantic masses of hard sandstone had to be cleared by blasting in order to access the ore deposits. Areva was looking for a method which entailed less environmental impact and was also more cost-effective. A number of vendors had failed to satisfy Areva's needs, until Bauer – in its capacity as a designer and manufacturer, and with its applications experience – came up with a new approach. An entirely new mining system of its kind was created, combining high-pressure jetting with the airlift method. The mining of uranium demands implementation of the highest safety standards to protect personnel. Health checks and radiation protection passes are mandatory. The project was realized from the first contact through to successful testing of the prototype at the McClean Lake headed by Holger Itzeck. The project is being supported from Schrobhausen by Joachim Urs Müller. He comments: "We have once again demonstrated that cost-effective mining is possible with special-

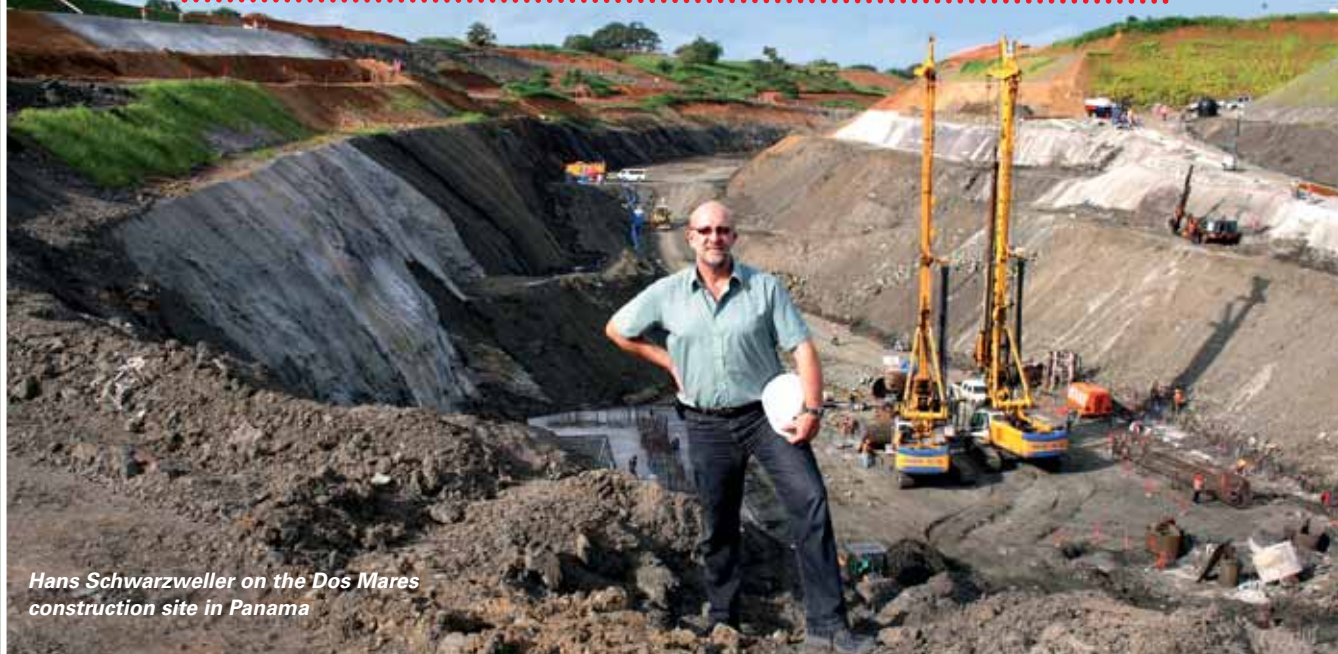
ist foundation engineering applications." Holger Itzeck, an experienced Bauer engineer, moved to Edmonton in the Canadian province of Alberta, together with his wife, who is a goldsmith, and student daughters, in 2006. His main role is in the Resources segment, but he is also the Canadian representative of Bauer Maschinen. Itzeck joined Bauer in the

*A grab-excavated cut-off wall protects a river against pollution from oil mining.**A BG journeys across Canada.*

mid-1980s. He previously worked on the development of construction processes and in management of the German businesses. He enjoys working in different cultures, and likes to keep close personal contact with staff and customers. In his leisure time, Holger Itzeck likes to go canoeing with his family on the remote rivers of Alberta. Indeed, it is to be hoped that all Bauer staff working in the wide expanses of Canada find time after their hard work to explore the dramatic landscapes of this beautiful country.



Panama Network in Central America



Hans Schwarzweller on the Dos Mares construction site in Panama

The expansion of the Panama Canal is currently one of the biggest construction projects in the world. But Panama is more than just the Canal. The small country at the narrowest point between North and South America is well aware of its strategically vital location, and is busy developing its towns and cities and improving its infrastructure. Bauer Spezialtiefbau subsidiary BAUER Fundaciones Panama S.A. has been operating in Central America since 2006. For Managing Director Hans Schwarzweller – who has many years' experience of working in the region – the Canal has a particular fascination: "As a construction engineer, being part of a project such as the redevelopment of the Panama Canal, in the focus of worldwide attention, is something really special!" Bauer has to date worked on several segments of the Canal development project, including installing additional ship anchorages along the canalside in 2007. The most spectacular sight is a group of four Klemm drilling rigs working on a pontoon in the Canal. The Klemm rigs are carrying out blast-hole drilling in order to widen and deepen the shipping lane by blasting out rock sections.

A major milestone in the history of the Panama Canal, which was first opened in 1914, was December 31, 1999. On that date the Canal was transferred by the

USA to the Republic of Panama. There was widespread scepticism at the time, Schwarzweller recalls. It was feared that such a small country would not be up to the major challenge of maintaining the Canal, and things would soon begin to fall apart. "But that is wrong. The Canal works superbly. A great deal is being done to improve safety, accident figures are down, and throughput has been increased." Moreover, the redevelopment work is closely focused on environmental protection.

Responsibility for the Canal lies with a quasi-autonomous public body which operates independently of the Ministry of Transport. A referendum among the people of Panama in October 2006 voted in favour of redeveloping the Canal in order to safeguard lucrative revenues from

Bauer in the Caribbean: foundations for an urban highway in Santo Domingo



handling ever larger container ships. The price of passage is calculated according to the type and size of the ship, and is on average 90,000 US dollars. This brought in revenues of some 1.745 billion US dollars in 2008. Investments totalling some five billion US dollars are planned through to 2015. The Panamanian currency is the Balboa, which is fixed at parity with the US dollar and is practically non-existent in terms of payment transactions. Hans Schwarzweller sees the advantage: "It makes all costing and calculation easy."

Qualified engineer Hans Schwarzweller has been working for Bauer since 2003. He comes from the Palatinate region of Germany, studied in Karlsruhe and has over 20 years' experience in the international construction business. He was initially with Philipp Holzmann, then for a number of years with Dyckerhoff & Widmann, and latterly Managing Director of Bilfinger Berger in Panama. Infrastructure projects are his speciality. He cannot imagine a life that does not involve being out in the big wide world. That adventurous spirit showed itself from an early age: "When you're out in the field, as a young engineer, you can make decisions without having to get permission every time you want to buy a pencil; and you get to lead a team quickly. It is an appealing career move." And what about mov-

ing back to Germany some time? "After such a long time, it would be difficult to change track." The working routine also does not appeal to him: "In 27 years I have rarely worked a five-day week; it's usually six."

Bauer is currently carrying out a number of projects in Panama away from the Canal, including the foundations for the Colores Bella Vista, an elevated highway in the centre of Panama City, and the Dos Mares hydro-electric power station. On this latter project, the largest in the summer of 2009, piles in different diameters are being driven. Strand anchors, shotcrete and soil nailing are also being executed to secure the slope.

The expansion of the Panama Canal is also entailing a modernization of the port infrastructure at the access points from both oceans. Bauer Panama was awarded a 3.8 million US dollar contract as far back as 2007, involving the vibro-compaction of 10 hectares of newly washed-up sand in the port of Balboa on the Pacific coast. The newly created area will be used to expand the container terminal, which is already the second largest in Latin America based on container turnover. The second construction phase, to a value of 1.6 million US dollars, began in September 2009. Further major



projects forming part of the Canal redevelopment works, in particular relating to ground improvement, are expected through 2010 and 2011.

Bauer in Panama is well equipped to handle all those tasks. The 65-strong staff is comprised mainly of local personnel. It also has at its disposal a state-of-the-art machinery portfolio, with four drilling rigs (two BG 28s and two BG 22s), six TR 75 vibrators, vibrator tips for vibrocompaction, three hydraulic power packs, two crawler cranes, a new Klemm KR 806 anchor drilling rig and a Bauer UBW.

This range of equipment provides the ideal basis for making full use of Panama's outstanding geographical location. "It is easy for us to ship machinery to neighbouring countries," Schwarzweller states. Contracts have already been acquired from some of the island states around the region. In Santo Domingo, the capital of the Dominican Republic, 130 piles in 900 millimetre diameter are being driven down to a depth of 30 metres for an urban highway on behalf of the Brazilian contractor Odebrecht: "We regard it as an inroad into the country, which is currently planning a number of other interesting projects."

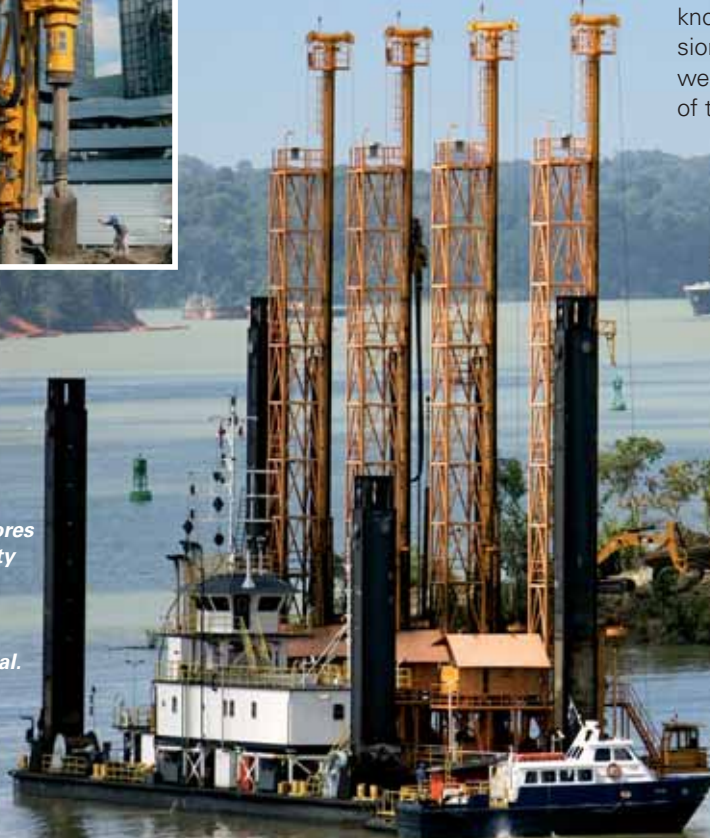
The recently established company BAUER Cimentaciones Costa Rica S. A. opened its own office in the capital San Jose in August 2009, and is busy acquiring work. Projects are also being pursued in Trinidad and Tobago.

Hans-Joachim Bliss stresses the favourable location of the small country at the centre of the American continent – a location very much in keeping with the Bauer network concept as applied across the various regions of the world. Panama also has very good transport links, with good flight connections to all the capital cities of South America. The company is currently observing the market in Colombia, with a view to entering into business with a local partner. Peru is also attractive: its economy is growing in spite of the crisis; only by three percent, which is nevertheless impressive. Over the coming years Hans-Joachim Bliss also expects to see the Cuban market opening up.

Hans Schwarzweller reveals what he most enjoys doing: "I'm an organizer. I enjoy building up a company from scratch and deploying people according to their strengths. I'm also someone who looks beyond the horizon, so to speak." During his time in Taiwan he also got to know the wider Far East region: "I occasionally flew over to Hong Kong for the weekend." It is an ideal attitude in terms of the network concept.



Works in Panama:
Vibrocompaction in the port of Balboa (top).
Foundations for the Colores Bella Vista in Panama City (left).
Klemm rigs are carrying out blast-hole drilling to expand the Panama Canal.



Mexico and the Chiapas Bridge

Mexico is primarily a market for BAUER Maschinen GmbH. A technically highly challenging project in the year 2000 involved the foundation works for the Chiapas Bridge (as it was called for short) – the company's first major offshore construction project. In the southern province of Chiapas, a bridge was built over the Malpasado Dam on the Raudales River. The foundation works were carried out by Mexican contractor ICA. The project, to which Erwin Stötzer, at the time Managing Director of BAUER Maschinen GmbH, had committed a great deal of effort, utilized drilling rigs and drilling support services from Schrobhausen. The stretch over the dam is divided into two sections by an island, so two bridges – 1,400 and 800 metres in length respectively – had to be built. Working from pontoons, auxiliary and anchor piles were executed for a complex steel structure. The foundation bores were sunk



Reverse circulation drills were deployed on the Chiapas Bridge foundations in Mexico.

many years. For a time Theo Herrera was engaged as a dedicated company agent. He now works for partner Construmac in



with the casings of the steel structure as a guide. The extreme demands included water depths down to 90 metres and socketing into a conglomeration of claystone and rock horizon. The manager on-site supervising the equipment was Peter Kliem. The BAUER Maschinen GmbH sales force has been operating in Mexico for

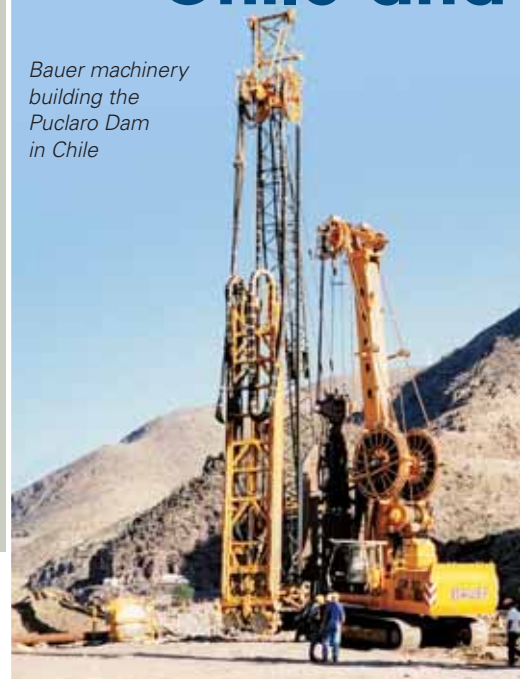
Mexico City, which is the authorized distributor of Bauer equipment. In the year of financial crisis, 2009, a major machinery transaction was undertaken in Mexico. For the construction of a sewer in Mexico City and the production of a 120 metre deep diaphragm wall, a BC 40 cutter and the technical peripherals, with a desander and pumps, were sold.

Chile was a focus of attention for the Bauer Equipment segment in the late 1990s. 470 kilometres north of the capital Santiago de Chile, construction companies Dyckerhoff & Widmann from Germany and Mendez jun. from Brazil were contracted to build the Puclaro Dam, a large-scale project to supply water to the Elqui valley. Bauer supplied the machinery for the specialist foundation engineering works.

A BC 40 trench cutter and three grabs were deployed. Bauer executed 17,000 square metres of underground cut-off wall in 1,200 millimetre thickness down to a depth of 60 metres, as well as providing the specialist personnel. Peter Kliem, head of Bauer's machinery deployment at the time, also recalls a key event which significantly hampered the construction phase: the tropical phenomenon known as "El Niño", which in 1997 spread particularly heavy storms across large swathes of South America, severely hit the construction site of the Puclaro Dam. All the machines were under water and mud, and had to be overhauled before work could resume. Bauer machinery was also deployed subsequently in Chile. The company installed the foundations for the new airport terminal in Santiago de Chile on deep-level large-diameter bored piles. The underground rail network and many other infrastructure projects in the capital also made use of Bauer machinery. Tunnelling works and digging of channels for relocation of rail tracks underground were contracted in the economically highly active area around the capital. In Viña del Mar the rail track runs underground for more than five kilometres. For the tunnel, constructed in 2003 by the top-down

Chile and

Bauer machinery building the Puclaro Dam in Chile



method on behalf of railway company MERVAL, 68,000 square metres of diaphragm wall were executed down to a depth of 45 metres. The wall is held in place by 22,000 metres of anchoring. While the Puclaro Dam project was being undertaken, the company also supplied machinery to neighbouring Argentina for



Remediation works with a Bauer BG and UBW in the port of Buenos Aires

the remediation of a quay wall in the port of Buenos Aires. A BG 30 sank large-diameter bored piles and a UBW anchor drilling rig installed pressure tube anchors. Bauer is not currently operating in the construction sector in Argentina or Chile, but the machinery sales business is seeing rising interest, as in other South American countries. Sales staff familiar with the culture of South America are identifying demand for specialist foundation engineering services and providing support to the construction contractors. At the Fematec trade show in Buenos Aires, Bauer equipment made in China was exhibited.

Argentina



Brazil is on the up

For Europeans, Brazil is the land of football and of Pele, of Sugar Loaf Mountain and the Rio Carnival; but also of the favelas, the poverty-stricken ghettos of the major cities. Although still a long way from achieving equality among its various social classes, Brazil has reaped some international recognition for its economic progress in recent years. The largest country in South America – with its population of 190 mil-

sible for Bauer's deep-level drilling technology, has been discussing a range of ideas for joint undertakings.

Günter Huber has become well acquainted with the structures of business life in Brazil. The most important economic centre is São Paulo, which with its eleven million people is the mega-city of South America: "Even companies headquartered elsewhere have at least an office in São Paulo, so you can basically get



Günter Huber

Grab at the M&T Expo construction fair in São Paulo

lion almost two thirds that of the USA – is steadily on the rise. Even in the financial crisis, Brazil keeps growing. For the companies of the BAUER Group Brazil is primarily a machinery market. Günter Huber has been the local manager for BAUER Maschinen GmbH since 2006. He likes the Portuguese language and is, as he asserts, "a great fan of Brazil as a country". After an initial six months in Rio de Janeiro – "to find out what the market was like" – he moved to Natal, further north on the promontory stretching out into the Atlantic. Relocating to Natal also meant being closer to the key account customer Petrobras. The concern – which has grown into one of the largest oil producers in the world – operates oil and gas fields both onshore across the mineral-rich country and offshore in the Atlantic. In recent months Stefan Schwank, respon-

an appointment with any major Brazilian corporation."

Stefan Schwank and Günter Huber see a sound basis for the further development of Bauer business in Brazil in the now well-established links with Brasfond, the largest specialist foundation engineering company in the country, based in São Paulo. A joint venture, Bras-Bauer, has recently been established between the two. Brasfond is seen as a technology leader in specialist foundation engineering in Brazil. So its recent purchase of a BG 36 with CSM fittings, as well as four diaphragm wall grabs from Bauer's Chinese production, represented quite a significant move. The delivery of this equipment was timed so favourably in the spring of 2009 that one of the grabs could be seconded for several days as an exhibit at the three-yearly "M&T Expo" construction fair in São Paulo.

Official opening of BAUER-Strasse 1



In the company style

Between 2006 and 2009, BAUER AG undertook the largest investment programme for the construction of new office buildings and factory halls in the company's history. Alongside individual works at various locations worldwide, the main focus was on two buildings at the Group's home base: the new head office administration block in Schrobenehausen and the Equipment segment's



The works are completed: Edmund Omlor, Dr. Norbert Weickenmeier, Prime Minister Horst Seehofer, Peter Teschemacher, Dieter Stetter, Prof. Thomas Bauer (from left)

new structural steel engineering plant in neighbouring Edelshausen. The company marked the completion of all works with a major opening ceremony event on March 27, 2009. The guest of honour was Bavarian Prime Minister Horst Seehofer. Speaking to almost 400 guests, Professor Thomas Bauer outlined the thinking behind the building programme. He thanked the two contractors Bögl and Hebel, who carried out the main works in a highly constructive collaboration. He also recognized the achievement of Bauer's own staff "whose efforts enabled us to finance these building works." With regard

to the financial crisis, he stated that the Construction segment was likely to see a decline, though on a manageable scale, but that the Equipment segment would have a tougher time of it. By contrast, he stated his view that the newly established Resources segment has bright prospects for growth. Prime Minister Seehofer also addressed the financial crisis. In view of all the major stresses imposed by the crisis, he asserted that government and business have a shared responsibility: "A clear course needs to be steered," he said. However, he warned that state intervention in business had to be as restrained as possible; the crisis should not lead to the gradual rise of a nationalized economy. His basic message was: "We must reinvigorate the social market economy. But that



Prime Minister Seehofer, Thomas Bauer

is the role of business, not of the state!" Horst Seehofer also underscored his personal links to the Bauer family and its business, highlighting in particular his time from 1980 onwards as a member of the German Federal Parliament representing the Ingolstadt region, in which Bauer is one of the major industrial concerns.

The new Bauer head office in Schrobenehausen

The construction of a new head office administration building was long overdue. The strong growth of the business since the mid-1990s had forced Bauer to rent additional premises around the existing head office facility. Indeed, some staff offices were for a number of years housed in temporary containers on the factory site. A total of EUR 12 million was invested in the new administration building. Then the existing building was extensively restored at a cost of EUR 5.5 million. The building services, in particular, were badly in need of updating, and because the exterior insulation had to be replaced, the facade now has an entirely new look.

"We wanted a building that offers our employees good working conditions while at the same time embodying our solid, no-nonsense philosophy as a construction and engineering company," states Chairman of the Management Board Professor Thomas Bauer, outlining the intention behind the project. From a number of designs submitted, the concept devised by Munich architects Weickenmeier, Kunz + Partner was ultimately selected. A key factor in the choice was its utilization of the site's outdoor areas. The proposal to incorporate a circular concrete space for the company's regular in-house machinery exhibitions was acknowledged as an appealing detail.

The new building and the renovated existing block are characterized by light, airy, clearly laid-out rooms. This pleasing, uncluttered effect is extended into a number of meeting rooms. Anything possibly coming under the heading of "luxury" is restricted to a few stylish highlights. The company and its architects have been widely praised for the design of the entrance lobby, with its open stairway and the large glass images by Schrobenehausen artist Brigitte Schuster. And the new canteen is also worthy of mention: bathed in natural light, it quickly became a welcoming and popular meeting point. In addition to its day-to-day functionality, the room can be trimmed up to assume an ambience almost of restaurant standard, when it is used to host guests from



The right address: Mayor of Schrobenehausen Dr. Karlheinz Stephan brought the new road sign and handed it to Dr. Karlheinz Bauer (left) and Professor Thomas Bauer.





New office building at the Aresing plant



Completely rebuilt: the facility in Edelshausen



Major redevelopment: facilities of Schachtbau Nordhausen



Additional factory space was erected for MAT



The Aresing plant (above). Works extension at Klemm in Drolshagen (right)





the banking world or customers from a wide variety of different countries.

The Edelshausen plant of BAUER Maschinen GmbH

BAUER Maschinen GmbH has established a new metalworking plant for its machinery manufacturing operations, involving an investment of EUR 28 million. The new halls – five kilometres north of the head office location – were urgently needed in view of the rapid growth in machinery manufacturing operations over recent years. Although extensive facilities had been available since 2002 at the Aresing plant newly put into operation at that time, soon all the halls were so tightly packed that in recent times productivity was severely impaired.

Based on plans by Regensburg architects Omlor-Mehring, some 20,000 square metres of industrial buildings for use as a welding shop, cutting shop and component assembly shop were erected on a 100,000 square metre site in Edelshausen, along with repair workshops and an anchor production unit. A 10,000 square metre roofed storage facility for incoming material has also been constructed.

Building works at German locations

Major expansion works have been carried out in recent years at the Aresing plant. Since the relocation of metalworking operations to Edelshausen, the halls primarily house the machinery assembly. The new paint shop is a state-of-the-art facility. In terms of quality, cost-effectiveness, productivity and eco-friendliness, it is one of the most modern in Europe. Beneath the single roof there is also the logistics centre. A new finishing hall, a hydraulics and electronics development centre and an office block were constructed. The extensive outdoor areas – covering a total surface area of 148,000 square metres – are used to conduct machine tests and commissioning. A training track will be put into operation in 2010 to enable customers, business partners and employees to practice operating machinery. A total of EUR 23 million was invested in Aresing.

Building work was also carried out at the Schrobenhausen plant. The 13,500 square metre facility, completed in 1984 and for almost two decades the home base for Bauer's machinery manufacturing operations, is now a repair works and storage depot for the hire pool as well as a logistics centre. Some EUR 1.7 million has recently been invested here in the construction of three warehouse buildings and renovation of the outdoor facilities.

The major redevelopment at Schachtbau Nordhausen is complete. A new 15,000 square metre factory complex now provides more space for structural steel engineering as well as integrating the former outdoor steel storage facility. A new 6,500 square metre combined paint shop and logistics centre has likewise been constructed; outdoor areas and access routes have been upgraded. For the employees, a new canteen, informal eating areas and washrooms have been constructed. A 500,000 kWp solar power plant is of particular benefit to the environment.

The 80,000 square metre complex of Klemm Bohrtechnik in Drolshagen has also been substantially extended. The warehouse has been modernized, the outdoor areas extended and a new paint shop and an office building incorporating welfare and leisure facilities has been constructed. Eight million euros have been invested in the urgently needed redevelopment over recent years. One of the old Klemm halls was taken over by Bauer subsidiary Eurodrill back in 2006. The building has been fully renovated at a cost of EUR 1.4 million, modernized and expanded to 1,600 square metres. An adjacent 2,500 square metre building is available to meet future expansion needs. In Immenstadt, MAT Mischanlagentechnik constructed one new hall and purchased an adjacent one in addition. Some EUR 4.5 million was spent on expanding storage and assembly capacities, extending the technical and electrical departments, creating new welfare and leisure facilities and training rooms, and establishing a new apprentices' workshop.

A new logistics and production facility costing some EUR 2.5 million was built at the Olbersdorfer Guß location near Zittau. State-of-the-art technology is now delivering greater efficiency in the manufacture of high-grade castings, and the warehousing and dispatch operations have also been optimized. Further work was carried out on the outdoor areas and a new access road was made using heavy-duty concrete.

German Water and Energy likewise invested in warehousing and logistics. At the Nordhausen location, a high-bay warehouse for stainless steel components was built at a cost of EUR 300,000. The logistics facilities at the Luckau location were improved.

Between 2006 and 2009 the BAUER Group invested over EUR 100 million in building works at its locations in Germany. Investments at Group headquarters in Schrobenhausen alone totalled more than EUR 65 million.



Mischanlagentechnik in Seifen near Immenstadt



The colonnades of the Neues Palais at the Sanssouci palace in **Potsdam** were in need of extensive remediation. SPESA restored the foundations and the historic plinth masonry in accordance with stringent conservation laws. **right**

To widen the Stich Canal in **Osnabrück** the canalsides were secured by sheet piles. On behalf of contractor Bunte, Bauer executed 5,755 metres of tie-back anchoring with 456 single-rod permanent anchors in lengths of 12 and 15 metres. **below**



At the **Finowfurt** exit of the A11 motorway Schachtbau Nordhausen constructed a suspended-deck arch bridge. The new bridge, a composite steel structure 102 metres long and weighing 780 tonnes, was pushed into place by a pontoon. **below**



Building in Germany From the sea to the mountains

In **Hamburg**, 40,000 metres of Bauer full displacement piles with average pile lengths of 15 metres were executed on behalf of German rail operator Deutsche Bahn AG for the "Pfeilerbahn" elevated railway project in just 12 weeks. The work formed part of the remediation and reconstruction of the two-kilometre Hamburg-Harburg stretch of track. **below**





The State Archive in **Duisburg** is being integrated into an old warehouse building. The increase in the number of floors requires extensive GEWI reinforcement of the foundations, which can be carried out from the basement levels. Bauer had to conduct load testing in advance of the works. **left**

In **Bielefeld Brackwede**, Schachtbau Nordhausen constructed a complete composite steel bridge – from the substructure to the bridge fittings – for a motorway link road over the B 68 trunk road. Even the steel sections originated from the Nordhausen plant. **below**

In **Duisburg**, the harbour basin was partially filled in with zechstein for the construction of a shopping centre on the site of the former railway docks. The loosely packed ground was improved with 7,000 metres of vibro-flotation densification down to depths as low as 9 metres using a TR 75 deep vibrator. **below**



The **Wusterwitz** lock on the Mittelland Canal west of Brandenburg is being reconstructed. We constructed the excavation pit for the 190 metre long lock basin, with 17,600 square metres of cut-off wall and four-layer anchoring with 33,000 metres of continuous strand anchor. Ancillary works also involved executing 20,400 square metres of sheet piles, 430 continuous single-rod anchors and 24 foundation piles for the lock-keeper's building. **below**



24 Projects in Germany

Power company Trianel is building a new coal-fired power station in **Lünen**. The specialist foundation works was executed in a consortium with Züblin. The consortium installed 42,000 metres of foundation piles down to a depth of 30 metres. **right**

The wall bridge of the Residence in **Darmstadt** was repaired. SPESA repaired the masonry by means of new grouting and replacing individual stones, provided new sealing of the surface and secured the arch with anchors. **below**



In **Krefeld**, at the MKVA waste and sewage slurry incinerator plant operated by EGN Entsorgungsgesellschaft Niederrhein, the Rhine-Ruhr branch constructed an excavation pit on behalf of Rostek & Pesch for a waste-fired combined heat and power station down to a depth of 16 metres. Assisted by Bauer's spe-



cialist departments, 925 metres of foundation piles, 1,250 square metres of mixed-in-place wall as well as 1,050 square metres of jet-grouting (picture above) and 950 metres of anchors were executed. The sealed excavation pit was built to accommodate a spacious slag bunker, which will have a new power station furnace built over it. **below**



An additional coal-fired power station is being constructed at the location in **Hamm-Uentrop**. Bauer executed the bored pile foundations on behalf of RWE, installing 6,500 metres of kelly piles down to a depth of 17 metres while power station operations were ongoing. **below**



For a new residential and office block in **Mettmann**, soldier pile walls and an intermittent bored pile wall were executed in extremely tight site conditions. **below**



In **Lippstadt**, at the Rothe Erde steelworks, excavation pit and foundation works were required for the expansion of a production building and a machine foundation. 940 metres of secant bored pile walls and 300 metres of foundation piles were executed without interrupting the steelwork operations. **below**



The Exzenterhaus, a new high-rise block being built over an old bunker, is sure to become a landmark of the city of **Bochum**. A BG 28 was lowered into the bunker by a heavy-lift crane to produce 12 piles of 1.2 metre thickness at depths down to 30 metres. The two metre thick bunker walls will support the building loads in addition to the piles. **above**

At **Frankfurt** Airport, a new gate is being constructed at terminal 1 to board high-capacity aircraft such as the Airbus A380 and the Boeing B747-8. The project is scheduled for completion by 2012. The 790 metre long excavation pit, down to a depth of 12 metres, was executed with tie-back anchored and reinforced soldier pile, bored pile and mixed-in-place walls. **below**



26 Projects in Germany

Near **Bischhausen**, SPESA is reinforcing a railway overpass structure dating from the 19th century. The project involves filling in the chambers to the left and right of the through-tunnel by means of 200 tubes à manchettes. A reinforced concrete frame provides load protection in the through-tunnel. **below**



The Petersberg Citadel in **Erfurt** has been a monastery, and a fortress, for centuries. Remediation work has been in progress for a number of years. SPESA was contracted to stabilize a buttress wall dating from the 15th century. The base slab was joined to the wall working from a pit. **below**



As part of the general renovation of the Schauspielhaus and Kammerspiele theatres in **Nuremberg**, one of the largest construction projects currently being undertaken in the city, Schachtbau Nordhausen repaired the ribbed ceilings using shotcrete. **right**



In **Uthleben**, just under 10 kilometres from a fattening farm, Schachtbau Nordhausen constructed a biogas plant powered by material from the farm. The plant will generate some 700 kW of electricity, sufficient to power 120 single-family homes. A doubling of capacity has already been commissioned. **above**



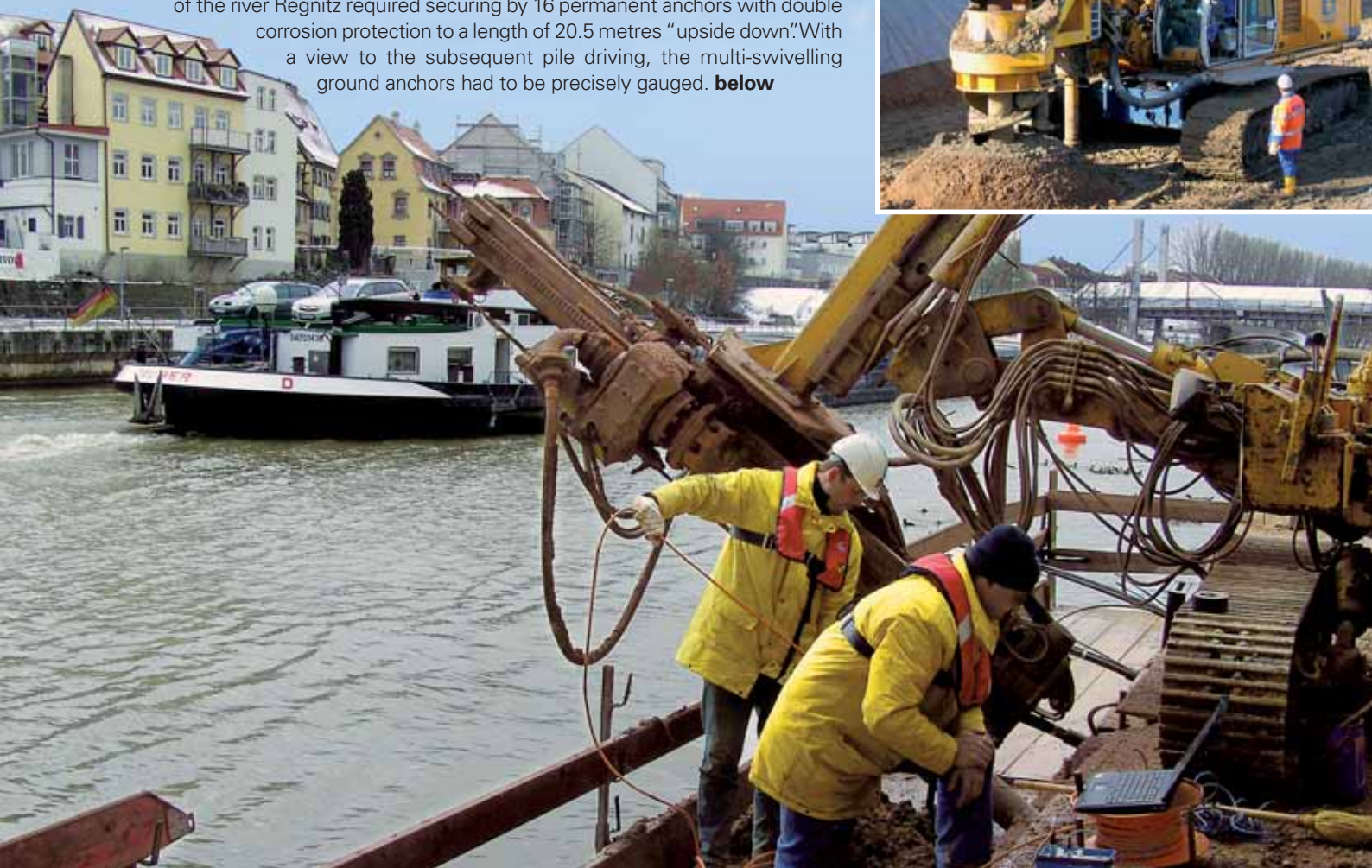
The municipal utility in **Chemnitz** contracted Bauer Umwelt to remediate its gasworks number III. Bauer Spezialtiefbau together with a consortium carried out demolition and excavation works as well as executing replacement bores in two-metre diameter. **above**





In the centre of **Würzburg**, clothing company s.Oliver has opened a state-of-the-art flagship store. Bauer acted as the general contractor, carrying out the planning and execution of demolition and excavation pit works. The 6.5 metre deep pit was enclosed by 60 large-diameter bored piles in 620 and 750 mm diameter. **above**

In **Bamberg**, as part of the reconstruction of the Kettenbrücke bridge, the shore wall of the river Regnitz required securing by 16 permanent anchors with double corrosion protection to a length of 20.5 metres "upside down". With a view to the subsequent pile driving, the multi-swivelling ground anchors had to be precisely gauged. **below**



For the sewage treatment plant in **Schweinfurt**, Schachtbau Nordhausen supplied the equipment and installed the systems. The picture shows installation of the 23 metre long auger pumps in the auger lifting unit of the treatment plant for desanding. **below**



Car components manufacturer ZF Friedrichshafen is extending its facility in **Schweinfurt**. 3,500 metres of CFA foundation piles were produced for a high-bay warehouse measuring 36 metres in height. Because of the sensitivity to settlement of the conveying systems, deformation is only permitted in the 1,000th range. **below**



28 Projects in Germany

In **Biessenhofen** in the Allgäu region, the Nestlé corporation constructed a new production block. Vibrocompaction was carried out in order to improve the ground. The contract stipulated completion within 40 working days. In fact, the project was completed in 27 days, using a Bauer BF 12 vibratory rig. **right**

For **Bruckmühl**, the flood protection on the Mangfall river was upgraded. For the purpose, 13,200 square metres of 0.4 metre thick MIP soilcrete wall was installed over a length of 4 kilometres, 20,000 square metres of soil was loosened and re-installed, 2,400 tonnes of armourstone was placed, 24,000 square metres of sub-base installed, and 11,500 square metres of lawn sowed. **below**



Near **Deining**, on the ICE high-speed rail link between Regensburg and Nuremberg, an unsecured rock wall posed a major danger. SPESA cleared away loose rock and, while rail services continued to run, installed shotcrete seals, single-block retainers and a steel protective net. **below**





In the west of **Munich**, on Rüdeshheimer Strasse, Bauer Umwelt demolished a former industrial building. The contaminated material was taken away for treatment; a small portion had to be transported to landfill. Bauer Spezialtiefbau executed the foundations and retaining structure for the new building. **left**

The Deutsches Theater in **Munich** is being comprehensively modernized. Reinforcement of the foundations was also required for future usage. Bauer carried out 3,500 rising metres of jet-grouting and 2,500 rising metres of low-pressure grouting. **below**



The flood protection on the Obere Iller river near **Fischen** requires installation of some 50,000 square metres of static soilcrete cut-off wall. Three rigs were deployed on the MIP process. The 400 mm and 550 mm thick wall extends down to a depth of 7.50 metres. **below**



For the excavation pit in reconstructing the small Olympic Hall in **Munich**, 1,300 square metres of anchored MIP wall, 750 square metres of soldier pile wall and 820 square metres of secant pile wall at depths down to 14 metres were executed. When carrying out the works, fully intact permanent anchors installed by Bauer in 1971 were encountered. **left**

In-house exhibition 2009

The MC 128 towered over everything else

The good mood matched the summer weather. Despite the ongoing crisis, the in-house exhibition of BAUER Maschinen GmbH in the spring of 2009 was once again a major hit among customers, business partners



Opening of the in-house exhibition, with Walter Sigl, Josef Soier, Prof. Thomas Bauer, Dieter Stetter, Christian Gress, Dr. Sebastian Bauer, Dr. Karlheinz Bauer (from left)

and friends. Through the months of January to April there were not yet clear signs that demand would fall substantially towards the summer. Although there is some reluctance to predict future trends, it is no doubt a positive sign that some 2,000 visitors from more than 50 countries came along to find out about the latest developments from Bauer Maschinen. And many are now once again looking to their opportunities once the crisis has passed.

The official opening of the exhibition showed that there are no illusions as to the gravity of the situation. Speaking to the amassed visitors, including elected local government officials, Professor Thomas Bauer admitted that the global financial crisis would leave its mark on BAUER Group companies as on others. He indicated that revenues were forecast to fall by more than 10 percent this year. Before that he had, however, taken the opportunity to present the outstanding performance figures for 2008. With a workforce of 8,600 people in every region of the world, the companies of the BAUER Group generated revenues of EUR 1.52 billion.

The 2009 in-house exhibition was once again marked by the familiar friendly lu-

minous yellow livery of the Bauer machines. And this time the background setting was even more inviting than last year: the works at the renovated former head office block and the newly constructed replacement building had been



Flexible range: the RTG pile drivers

completed, and restyled facades presented a bright new image. Once again the full range of products from all member companies of the BAUER Maschinen Group was on show, with innovations from each of them. BAUER Maschinen GmbH exhibited its new specialist foundation engineering crane MC 128, the star of the show, as well as the obligatory drilling rigs and diaphragm wall equipment. The exhibition also featured anchor drilling systems from Klemm Bohrtechnik, mixers and separators from MAT Mischanlagentechnik and the range of well drilling and exploration rigs from Prakla, as well as various

hammer models from Pileco and Fambo. In the "Old Welding Shop", a former factory hall, Bauer know-how was presented on information stands. Moreover, a comprehensive showing of drilling tools demonstrated the groundbreaking development work done by Bauer engineers for drilling in all kinds of geology over the last 20 years. Visitors also



Award presented at the in-house exhibition: Sales Partner of the Year 2008 is W. S. Kim from South Korea.

showed great interest in the new plant in Edelshausen, which had started operations just a few weeks previously and was open for inspection tours. The new deep-level drilling rigs were erected on the site's outside areas.

The events accompanying the exhibition have been much appreciated by customers for many years. They traditionally incorporate a dinner and evening entertainment with lots of music in the conference building as well as more work-related trips in the form of construction site visits. The outcome after four exhibition days was positive in many respects. Dieter Stetter, Managing Director of BAUER Maschinen GmbH, was able to report the sale of BG drilling rigs, and other large-diameter rigs were hired out on long-term agreements. A few days after the in-house exhibition a contract of sale for six more BG rigs was signed.



Hammers in all sizes – from Pileco and Fambo

Crowds attended the opening – customers, business partners and local politicians were among them (left). The “Old Welding Shop” as an exhibition hall (below)



Low-headroom version of the BG 12 H



Celebrating the company's Bavarian heritage: the management team and sales staff appeared in traditional costume.



Equipment in customer projects

Spain The Girona railway station is being redeveloped to handle the AVE high-speed rail link between Madrid and France. Terrabauer deployed four Bauer cutters, one mounted on an MC 64, to construct diaphragm walls at depths down to 50 metres. **below**



USA Thyssen Krupp is building a new steelworks in Alabama. ABE Enterprises Inc. from Atlanta was contracted to install 5,000 square metres of soldier pile wall. 105 double-T sections were sunk using an RG 20 S with MR 125 V vibrator. **below**



Poland A north-eastern bypass is being built around the city of Bielsko Biala in the Beskids mountains. A number of construction companies – IMB, Mosty Lodz and PPI Chrobok – employed Bauer machinery. 2,900 piles were sunk down to a depth of 19 metres using BG 22 H, BG 24 H, BG 36 C drilling rigs and RTG pile drivers including the RG 16 T, RG 18 T and RG 12 T. **below**



Czech Republic Three Bauer drilling rigs worked on the construction of the



Kosice bridge over the E55 motorway. Skanska carried out vibrocompaction using a BG 18, while the Topgeo corporation drilled piles with a BG 36 and a BG 40. **bottom left**



Germany In Munich, our customer PST Spezialtiefbau Augsburg deployed a BG 20 H to construct a secant bored pile wall in the bed of the river Isar for the Prater power station. **above**



Australia A whole array of Bauer drilling rigs was deployed on the development of the Brisbane Airport Link. The works were carried out by several contractors, including Wagstaff Piling and Bauer Spezialtiefbau. **above**



Portugal For an underpass beneath the river Lima our customer Geo Rumo applied the CSM method to construct the walls for a 23 metre deep start and finish shaft. **above**

Germany Our customer Gollwitzer based in Floss constructed an excavation pit in tight conditions in the Grosse Bleichen district of Hamburg. The bored pile wall was executed with a BG 28 H. **below**



Austria In Vienna, an apartment complex with underground parking is being constructed in a tight city centre location. Our customer NGT Neue Gründungs-technik carried out FOW drilling in 406 mm diameter down to a depth of 12 metres. **below**



Slovakia For the construction of a new steelworks in Strazske, Topgeo employed an RG 25 S to produce CFA piles in 500 mm diameter and piles in 750 mm diameter by the Kelly method. Cenek & Jezek employed a BG 20 H to execute pile bores in 900 mm diameter. **below**



Italy For the foundations of a valley bridge near Cortina heading towards Lake Misurina in the Dolomites, our customer Construzioni Xodo produced 1,200 mm diameter piles using a BG 28.

The casings were sunk down 38 metres and retracted again without the use of a casing oscillator. **below**



Japan For an infrastructure project in Tokyo entailing the convergence of several major roads, our customer Hazama is using a Bauer side-cutter to construct 38 metre deep CSM walls at an average thickness of 1,000 mm in tight conditions. **below**



China In Beijing, Bauer customer Haiteng is using two BG 25 C rigs to construct a cased pile wall with piles in 1,000 mm diameter down to a depth of 25 metres for the redevelopment of Liuliqiao Station. **below**



Hong Kong On the construction of the new ring road in the centre of Hong Kong, Bauer customers Gammon and Intrafor deployed two Bauer BC 30 and BC 40 cutters to produce 157,000 square metres of diaphragm wall in 1,200 mm thickness down to a depth of 70 metres, including up to 10 metres of socketing into hard granite. **below**



Premiere for deep-level drilling rig

In 2009, BAUER Maschinen GmbH presented its first ever deep-level drilling rig. The Bauer TBA was specified in two sizes: the TBA 300 for drilling depths down to 5,000 metres and the TBA 200 for depths of 2,000 to 3,000 metres. Bauer deep-level drilling rigs can be used for deep-level geothermal energy extraction, for oil and gas exploration and for production drilling with vertical and directional bores.

The Bauer TBA 300 is an electro-hydraulic drilling rig with a 300 tonne load-carrying capacity. High energy efficiency is produced by the unique hybrid feed system – a combination of winch and cylinder feed which permits substantial energy saving. The modular design and the hydraulically bolted main components allow for quick erection and dismantling and transfer of the heavy rig from one drilling point to the next. Other major benefits are the practical transport system – all components are manufactured in standard container dimensions – and the extremely small drilling footprint.

The deep-level drilling rigs are also planned to be deployed on a number of projects coordinated by BAUER Resources GmbH together with its subsidiary Foralith. Bauer Resources carried out test bores in Edelshausen. At the drill point a Prakla RB 50 drilling rig was first used to install the "anchor casing tour" down to a depth of 450 metres. Then the TBA 300 took its place to drill underground down to 2,000 metres.

The TBA 300 was placed on public show a number of times in the course of the year. In the spring, international guests were invited to Schrobhausen to the company's first ever deep-level drilling conference. Stefan Schwank and Roland Wenger set out the Bauer concept to the assembled visitors. In the autumn, a live demonstration of the rig was presented at the test drilling site in Edelshausen. Over 250 industry specialists from more than 25 countries showed great interest.



The "anchor casing tour" at the drilling site in Edelshausen was executed with a Prakla drilling rig.

BAUER Group companies in many countries employ people from all over the world, representing all cultures, creeds and faiths. They wear the Bauer helmet on-site, or work in the welding shops and assembly halls, or sit at a computer screen in a company office. They are Lebanese and Jordanian, Turkish and Indian, Chinese and Pak-

small sample reveals a wide range of different circumstances and lifestyles. The largest group of non-indigenous workers in Schrobenhausen has long been the Turkish community, some of whom are third-generation residents. However, they no longer make up quite such a large percentage of the workforce as back in the 1970s and 1980s. They

came to Germany at an early age when his father joined Bauer. He himself worked in Munich for a few years before moving back to Schrobenhausen, where his children go to school. In recent years Cevdet Özen has travelled around the world a great deal. He has worked on construction sites and in Bauer workshops in Singapore and Latvia, in Croatia

Employees from far and wide



Atilla Acikgöz and Cevdet Özen



Heves Okyay

Dr. Mahmutoglu



Stefano Fagioli



Ragnar Olafsson



Sebouh Balian



Pierre Klein



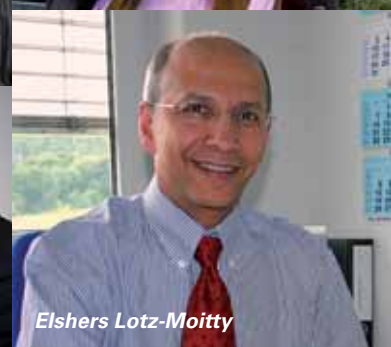
Venugopal and Sumitha Doosa



Manfred Schöpf
Walter Sigl

Erich
Steinlechner

Hermann
Schrattenthaler



Elshers Lotz-Moitty

“How is life in Schrobenhausen?”

istani, Philippino and Vietnamese. And at Group headquarters too, not all the staff are from the town of Schrobenhausen or the surrounding Donaumoos district, or even from the wider region of Bavaria, or indeed from Germany.

Walking around the offices and factory halls of Schrobenhausen, many people from distant lands can nowadays be seen at their work. So what is life like for them, if their home city is actually Ankara or Hyderabad? If they are more used to living in Paris or Cairo? How does Schrobenhausen compare? It is only possible to poll the views of a small number of the people concerned, yet even that

have become less predominant on construction sites too. In many cases, the second generation took their opportunity to opt for new horizons.

Most of Bauer's Turkish employees today have German citizenship. Talking at the Edelshausen plant to Cevdet Özen and Atilla Acikgöz – both of whom are welders, but with differing specialist qualifications – the conversation is naturally conducted in the local Bavarian dialect. Both of them have – or have in the past had – other relatives working at Bauer. Most of their leisure time is spent in and around Schrobenhausen. Cevdet Özen was born in Anatolia, but

and the Ukraine, as well as visiting Switzerland and South Africa.

Atilla Acikgöz was born in Schrobenhausen, though he met his wife back home in Turkey. She moved from the big city of Ankara to Schrobenhausen – “that was quite a change.” When she arrived, she spoke no German. She has since completed a German language course in Ingolstadt – “with top marks,” as her husband proudly points out. Atilla worked on construction sites for a number of years, though he did not get around the world as much as Cevdet. His brother Cengiz, on the other hand, is a widely-travelled trainer, carrying out initial equipment

induction on behalf of the Bauer Maschinen after-sales service team. Construction engineer Heves Okyay grew up in Schrobenshausen. She was born in Ankara, but came to Germany at the age of four-and-a-half, to join her father who was already working as an engineer at Bauer. She attended nursery school in the town, before moving up to the local high school. She subsequently went on to study in Munich and New York. Her father's work and the company she now works for were a part of her life from an early stage. Indeed, she was on a Bauer construction site at Misurata in Libya with her father at the age of just 14. Today she is one of the construction engineer team at BAUER Maschinen GmbH. Schrobenshausen has not played such a major role in the life of Dr. Ismail Mahmutoglu. As he says: "In my job, you tend to move around a lot." The doctor of chemistry is head of research and development in the BAUER Environment Group. He joined Bauer after gathering experience with a number of other construction companies. Born in Istanbul, and having grown up in the Marmara region, he attended the German-speaking high school in Istanbul and later studied in Berlin. Heves Okyay has dual citizenship; Dr. Mahmutoglu has only a Turkish passport. When asked where their homeland is, both provide the same answer: Turkey, where else? Stefano Fagioli comes from a picturesque rural area of Italy. What he misses most in Schrobenshausen is a view of the sea. At home in Ancona, he looks out across the Adriatic, and that is where he returns every weekend, to visit his wife and two daughters. The good flight links from Munich are useful in that respect. He still finds German a problem, though he does speak a number of other languages – a skill set which he is able to utilize in his work for the Bauer Maschinen sales team. As well as English and French, Stefano Fagioli has recently made particular use of his knowledge of Spanish and Portuguese to open up new business opportunities in Latin America. Elshers Lotz-Moitty was born in Egypt. He graduated from high school in his homeland, but wanted to study in Germany. "Germany is held in very high regard in Egypt," he explains. Another attraction was the challenge of what is widely seen as a difficult language to learn. He initially intended to spend three years in Germany, but it turned out to be rather more! After studying in Biberach and in Stuttgart – "my home town in Germany" – he worked in the commercial departments

of several construction companies. He joined Bauer in 2005. Having been adopted by one of his college professors, he has long held a German passport and, looking back as well as forward, he calculates: "I've spent easily the biggest part of my life in Germany." He has worked in the commercial department of Bauer Resources in Edelshausen since 2008, though his home is rather further away. He lives in Augsburg, where he enjoys the more cosmopolitan city life.

The life of Sebouh Balian has encompassed two very different locations: Schrobenshausen and Paris. Born in Beirut, of Armenian origin, with a French passport – that is at least the short version of Balian's complex biography. He is, however, someone who needs the big city: "I lived for so long in Paris ..." He worked in many different countries before joining Bauer, and right from the start he made clear his intention to live in Munich. In reply to warnings about the daily commute, he recalled his encounters with the Paris rush-hour: "That was usually a two-hour drive as well." At least nowadays he has a hands-free phone unit in the car, which means he can get a few things sorted while on the way back and forth. He is also responsible for countries including the Netherlands, the UK and Canada, so he travels a lot. Although much of Bauer's international business is conducted in English, Sebouh Balian did – on the company's advice – take an intensive German course, which has long enabled him to communicate all the relevant information in what he describes as "a very difficult language".

Pierre Klein has close ties with Schrobenshausen. He was born in Strasbourg in the Alsace region of France, "just three kilometres from the German border." He grew up speaking the Alsatian dialect at home, and then spoke French at school. His route to Schrobenshausen has taken him via construction sites in Berlin, to working in Geneva and Strasbourg on behalf of Bauer Spezialtiefbau. Recently the mechanical engineer returned to his real area of specialism, on the Bauer Maschinen sales force. Schrobenshausen is an easy place to feel at home in, he asserts, "especially if you go to Sig's." It was in Sig's pub, too, that he found his musical home. He is a saxophone player, and for a number of years now, together with the Soier brothers, he has been belting out classic rock songs – preferably Rolling Stones tracks. Ragnar Olafsson has very much taken to the Bavarian way of life. Indeed, he regularly dons the traditional *Lederhose* when accompanying customers to Munich's fa-

mous Oktoberfest. The Iclander, born in Reykjavik, has always been interested in languages. He learned German at school, and developed that knowledge further while studying mechanical engineering in Sweden. He subsequently looked for a job in Germany, and found work with a gear manufacturer in Schweinfurt. It was there that he met his wife. She is from Aichach, and this connection brought him quite close to Bauer's home territory. Personal contacts led him to Bauer Maschinen, where he took on responsibility for sales in Northern Europe as well as overseeing Swedish subsidiary Fambo.

Sumitha and Venugopal Doosa come from Hyderabad, a city of six million people in southern India. Both of them work in the IT department. They were already married when they took the decision to study in Germany. It took a lot of courage to head off into the unknown, with no knowledge of German. They learned the language while studying in Karlsruhe and Mannheim. Not far from there is the headquarters of IT giant SAP in Walldorf, which was a key step in the careers of both Sumitha and Venugopal. Sumitha's first encounter with Schrobenshausen was the railway station. As she emerged from the train, she was shocked to see that there was only a single track. That negative first impression was quickly countered by the friendly assistance with which she was greeted. When she asked a friendly local where she could find the Bauer offices, she was kindly taken a short distance and was shown how to get there. Sumitha joined Bauer in late 2002, her husband came a few years later. They really like it now: "It's quieter than in the city." They have two children, the younger of whom was born in Schrobenshausen. The Doosas do hope, however, that their children will one day learn standard German, as they are at present busily picking up the Bavarian dialect at nursery. The family gets "home" to India once a year at best, or maybe more often for family occasions. The proximity of Munich airport is a bonus when organizing such trips, of course.

The final group of foreign workers at Bauer in Schrobenshausen certainly has no need of an airport when visiting their homeland. For Walter Sigl, Manfred Schöpf, Hermann Schrattenthaler and Erich Steinlechner it is easy to get home and back, across the Alps over the nearby border from Bavaria into the neighbouring Tyrol region of Austria. And they have never had any language problems either. All four grew up speaking both Austrian and German from an early age!

Bauer projects worldwide

UAE In **Abu Dhabi** the Bauer ductile pile was launched as a secure foundation element. For its application, the HB 4200 percussion hammer, with 4,520 kN of percussive force, was adapted onto a BG 9. The ductile pile was driven down to 12 metres, and in load tests attained a test loading of 2,500 kN. **below**



On a 350,000 square metre site in **Abu Dhabi** the “Golf Garden” is under construction, featuring 390 luxury villas and townhouses. To provide the foundations for the buildings, Bauer executed 2,500 bored piles in 600 mm diameter and 3,200 piles in 500 mm diameter within six months. **above**

In **Abu Dhabi** telecoms company Etisalat is constructing a new office building with underground parking. The 900 mm secant pile wall and the 500 mm and 750 mm foundation piles were executed by Bauer. **below**



In **Abu Dhabi**, on Al Sowah Island, the 90,000 square metre Cleveland Clinic is under construction. Bauer deployed as many as ten TR 85 deep vibrators in carrying out vibro-flotation densification to provide ground improvement of the 10 metre thick alluvial sand layer. **below**





Saudi Arabia The "10 King Road Tower" in **Jeddah**, known as the United Tower, belongs to Prince Saud Bin Fahad. Saudi Bauer provided the building's foundations on 740 foot-compacted bored piles in 1,200 mm thickness. Pile walls and 160 temporary anchors form the pit's retaining structure. **left**

Lebanon In the coastal area of **Beirut** the Kempinski Hotel is under construction. Bauer Lebanon was contracted to carry out demolition works, to construct the 30 metre deep tie-back anchored pile wall and install 16,000 square metres of grout blanket and pit spoil excavation. **below**

Angola In the capital **Luanda**, Empreiteiros Casais Angola LDA is constructing a 16-storey residential and business block with three underground levels. Bauer constructed the 13.5 metre deep excavation pit out of two-layer tie-back anchored tangent bored pile walls in 600 mm thickness. **below**



UAE The city of **Abu Dhabi** is constructing a three kilometre long eight-lane link road between the Sheikh Zayed Bridge and Mina Road. For the project Bauer produced 1.7 kilometres of secant pile wall, secured by more than 800 anchors. **below**



Libya In the centre of the capital city **Tripoli**, the Tripolis hotel tower is under construction. Bauer Egypt executed the retaining wall and pile foundations for the underground parking garages, a total of 12,000 square metres of 800 mm diaphragm wall 22 metres in depth, 1,050 temporary anchors and 950 bored piles in 1,000 and 1,200 mm thickness. **below**



Australia The Airport Link in **Brisbane**, a road tunnel, links the city centre to the airport. Bauer Australia is producing 30,000 square metres of diaphragm wall in 1,000 and 1,200 mm thickness down to a depth of 30 metres. Other contractors in the consortium are also working with Bauer equipment. **below**



Thailand In **Bangkok** the "Red Line" from Bangsue to Talingchan is a new passenger rail link for the SRT and BTS systems. Bauer Thailand is executing 1,300 bored piles in 800 to 1,800 mm thickness and at a depth of 54 metres for the pillar foundations. **right**



Algeria Between the town of **Setif** and the Tunisian border the approximately 423 kilometre long "East West Highway" is under construction, entailing the building of 35 bridges and extending over a 1,000 metre altitude difference. Bauer Fondations Speciales Algerie is carrying out the complex piling work. The quality was affirmed by extensive pile testing. **above**



Vietnam In the eastern section of the capital Ho Chi Minh City, on the **Saigon** River, the Ho Chi Minh Tower, at 220 metres the tallest building in the city, is under construction. The five underground levels are being constructed by the "top-down" method. Bauer Vietnam, under contract from Bouygues Batiment, produced 120 foundation piles in 2,500 mm thickness down to a depth of 100 metres. **above**





Indonesia For the upgrade of the “Paiton 3” power station, general contractor TOA Corporation contracted Bauer Pratama Indonesia with the foundation piling. 2,000 bored piles in 1,200 mm diameter were sunk down to a depth of 25 metres. **left**

Singapore On Marina Bay, the luxurious Marina View Development is under construction, featuring two residential and office towers extending to 47 storeys. The Bauer Singapore Branch carried out the foundation works, installing bentonite-supported kelly bored piles down to a depth of 87 metres. **below**



Malaysia In **Kuala Lumpur**, close to the Petronas Twin Towers, the 40-storey Setia Sky complex, featuring 850 luxury apartments, is under construction. On behalf of Excel Jade, Bauer Malaysia executed the foundations with 430 bored piles. **below**



Malaysia In the centre of **Kuala Lumpur** the new “348 Sentral” complex is under construction, featuring three 31-storey residential and shopping towers. MRCB Engineering contracted Bauer Malaysia to produce 8,000 square metres of diaphragm wall and 163 bored piles. **below**



Ukraine In **Kiev** the Mazeppa apartment block is under construction on a slope above the Dnepr river, founded on 8,500 metres of 880 mm diameter kelly piles. The cut into the slope for the underground levels is secured by a 880 mm pile wall tied back with anchors. Bauer Altis completed the project in a year. **below**



Turkey Overlooking the Bosphorus in **Istanbul**, the five-star hotel Verdi is under construction. The Bauer Lebanon Foundation Specialists Turkey Branch was contracted to design and execute the pit retaining structure, entailing diaphragm walls and bored piles socketed into rock down to a depth of 45 metres. **below**



Slovakia For the new terminal at **Bratislava** Airport the 8 metre deep excavation pit was constructed with 5,600 square metres of MIP wall. The project also involved installing 8,900 square metres of single-phase cut-off wall down to a depth of 28 metres. Bauer Austria worked with BRK Hungary to meet the tight completion deadline. **above**



UK In **Pembroke** in Wales, BAUER Technologies Limited executed 2,250 CFA piles in 600 mm diameter on behalf of the Alstom corporation. This is providing the foundations for the new 2,000 MW power station to be operated by RWE Npower. **above**



Bulgaria In the south of the city centre of **Sofia** the 112 metre high "Millennium Center" office, hotel and shopping complex is under construction. Bauer Bulgaria carried out all the specialist foundation engineering: an 18.5 metre deep excavation pit with 14,300 square metres of secant pile wall, secured by 6,500 metres of temporary anchors, as well as 550 CFA and kelly piles down to a depth of 22 metres. **right**



Hungary The project in **Budapest** – in the middle of the river Danube – is called Sodorvonalí Bevezető Műtárgy. For a shaft extending beneath the river bed, BRK Hungary constructed a 12 metre deep water-tight sheet pile trough on behalf of Alterra Kft. Following lancing of the trough the earthworks and shotcreting were carried out. **above**

Netherlands The Stedelijk Museum in **Amsterdam** is being extended. For the adjoining Nieuw Stedelijk Museum, BAUER Funderingstechniek B.V. constructed the excavation pit with a water-tight base, secured against uplift by 840 micro-piles. The piles were sunk down to a depth of 26 metres with 7 metres of empty bore using Klemm drilling rigs. **below**



France Near **Metz**, Electricité de France is upgrading its existing gas-fired power station. In the first construction phase, Bauer produced 160 CFA piles in diameters up to 1,060 mm as well as 1,500 large-diameter bore holes down to a depth of 12 metres. Drilling of different working levels demanded precise scheduling. **below**



Austria In the Third District of **Vienna** Bauer Austria executed the specialist foundation engineering and earthworks for the “Marxbox” office and warehousing building. The excavation pit was enclosed by an intermittent CFA pile wall and secured by temporary anchors. **right**



Switzerland The terminus railway station in **Zurich** is being converted into a through-station. In tight operating conditions, and while rail services continued, BAUER Spezialtiefbau Switzerland executed the foundation piles for 35 pillars and two ramps on behalf of the ABD consortium for Swiss Railways. **below**



Austria In **Mauthausen** – near Perg, the twin town of Schrobenehausen – a 1.8 kilometre long static cut-off wall was constructed by the MIP method at a depth of 5.6 metres for the largest flood protection project in Austria. 1,250 steel sections for mobile flood protection elements were installed in the MIP trench. **above**



Switzerland The **Biel** bypass is being constructed with two separated lanes through the Längholz tunnel. Bauer constructed a sealing block for the tunnelling operations. Another sealing block is being executed by the CSM method near **Bruggmoos** for the cross-over between the two tunnel chambers. **below**



News in brief

The BAUER Training Center

Since the spring of 2009, all the training and development activities of the Schrobenehausen-based BAUER Group companies – except for apprentice tuition – have been consolidated in a new business unit, BAUER Training



Center GmbH, managed by Christine Sigmund. The BTC is responsible for employee training in-house, as well as coordinating all training courses for customers and business partners. The new unit has been certified as an accredited

“Strategist of the Year”

Professor Thomas Bauer has received the prestigious “Strategist of the Year” business award for 2009. The Financial Times Germany, Bain & Company Germany and the WHU Otto Beisheim School of Management present the award to chief executives of stock market-listed companies in Germany who, over a period of three years, have consistently implemented a ground-breaking, sustainable strategy. At the celebration evening in Frankfurt, Thomas Bauer expressed his appreciation on receiving the award, but also stated that it represented merely a

snapshot of achievement. As opposed to an artist, whose works are normally honoured as a complete, self-contained accomplishment, business managers have to get up every morning and do it all over again, he explained.



training facility, enabling it also to offer training for the wider labour market. The full prospectus and course schedule is presented – as it has been for many years – in a printed brochure. All courses are also listed on the Intranet as well as publicly on the Internet. Well-equipped

seminar rooms are available for training purposes in the various Bauer buildings. During 2009, a practice track for machinery operator training was established on a 6,000 square metre site in Aresing. Use of the track is likewise coordinated and managed by the BTC.

Together into the future

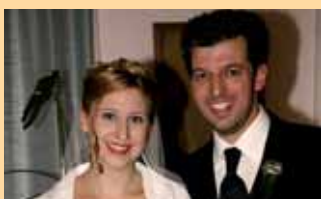
A Bauer wedding: in November 2008, Dr. Sebastian Bauer, head of the Development and Construction department and a director of BAUER Maschinen GmbH, married



ried Elke Hoffmann. She works in the company's Human Resources department.

Newlyweds off to the USA

In October 2009 Florian Bauer, the son of Margit and Thomas Bauer, married Evi Zwanzig. Following the registry office formalities and the



wedding ceremony at the Church of the Holy Spirit in Mühlried, a reception for family and friends was held at the “Old Welding Shop.” Florian and Evi – he is a construction engineer, she a business studies graduate – will be starting their working lives together in the USA.

Start of construction in Sri Lanka

Foundation stone laying for the new administration building in the



port of Hambantota in Sri Lanka: Mahinda Rajapaksa, President of Sri Lanka, took the opportunity to find out what goes on in the cab of a Bauer BG rig.

Marlies Bauer 80

A few days before her 80th birthday, giant scissors in hand, Marlies Bauer cut the ceremonial tape to officially open the new Bauer Maschi-



nen plant in Conroe, Texas. On her return, she celebrated with her family. The wife of Dr. Karlheinz Bauer, she worked in the company for many years, initially in commercial management, and later as head of the Advertising department. She also established the in-house magazine “Bohrpunkt” (international title: “Bauer Review”). She was also active in local politics, as well as in a large number of organizations, clubs and public bodies.

New Bauer film completed

Brief and to the point, yet providing a broad overview. This was the specification for the new Bauer corporate image film which was completed in autumn 2009. It sets out the roots and the structure of the family business, as well as outlining the new market strategy of the

BAUER Group companies within the three segments: Construction, Equipment and Resources.

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Cover: In Dubai Bauer is constructing the excavation pit and foundations for the Iris Crystal Tower, a 25-storey project with four underground levels.

Back page: Night-time ambience at the Bauer Maschinen in-house exhibition in April 2009.

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