english

BAUER

Construction · Equipment · Resources

Excavation pit and foundations for the Iris Crystal Tower in Dubai

What is the significance of the 220-year history of our company? Is it merely a collection of pleasant memories, or does our past also influence our present actions?

This brochure is intended to reveal to customers, business partners, shareholders and company employees just how the Bauer company originated, and what capabilities the Group has developed over its long lifetime. Our history has made an indelible mark on the character of the company – the more recent history doubtless more strongly than the more distant past. Some of the essential characteristics and modes of conduct embodied throughout our Group today are founded on long-established values, and are rooted in a tradition which has evolved over many years:

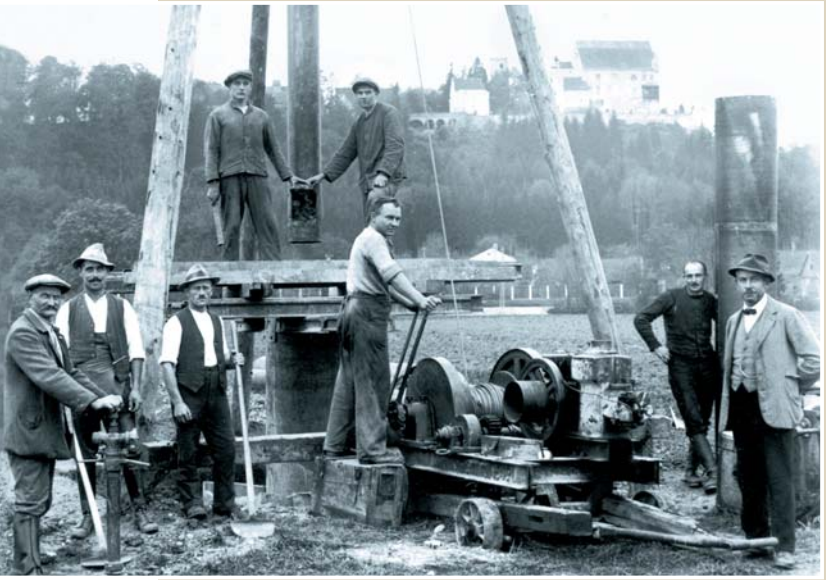
- We are a family-oriented, stock market listed company, and we regard it as our social responsibility to ensure that the success we achieve is founded on the success of each individual working towards it. This also represents an optimum means of enhancing the value of the company.
- Outstanding engineers, technicians and skilled tradesmen have passed down their commitment to continuous progress through the generations, establishing the foundations for the leading position we enjoy today.
- Our actions aim to support and enhance the perception of our company as a generous and benevolent commercial organization, with a strong commitment to learning, founded on a high degree of self-management and dynamic development.

We at Bauer are proud of what we have achieved together, and we look forward to making further substantial contributions to future progress.

Prof. Thomas Bauer

Bauer in Schrobenhausen

Since summer 2006 shares in Bauer have been traded on the Frankfurt Stock Exchange. The principal shareholders are still the Bauer family, so BAUER AG, the global construction and equipment manufacturing business, remains essentially an independent family concern. The history of the family business in the Bavarian town of Schrobenhausen extends back to 1790.
It was then that Sebastian Bauer from nearby Deggendorf acquired a coppersmith's shop in the town. Ten years later he was able to open a second branch, and soon there was just one coppersmith in town. Coppersmiths worked mainly for breweries, though also producing household items. Local government contracted construction work was also acquired. Around 1840 for example, Bauer was commissioned to clad the tower and steeple of the St. Jakob's church in Schrobenhausen.



Well drilling using the tripod derrick, into the 1950s

As technical advances progressed, the coppersmith's trade became less and less important. The fourth-generation Bauer to run the family business, Andreas Bauer (1858 to 1933), took it in a new direction. He spent a number of years as a journeyman, visiting various countries around Europe, and he brought back with him specialist know-how in the construction of wells. He discovered that it was possible to drill artesian wells in Schrobenhausen. Consequently, the Directorate General of the Royal Bavarian Transport Corporation commissioned him to construct the well for the waterhouse at the Schrobenhausen station on the new railway line between Augsburg and Ingolstadt.
The move into well drilling was further advanced by Dipl.-Ing. Karl Bauer (1894 to 1956), who took over the business after World War I. He attended the grammar school in Ingolstadt, studied mechanical engineering, and guided the business into the industrial era. A key step was the construction of the water supply system for the municipality of Schrobenhausen in 1928. Karl Bauer urgently needed a project he could put forward as a reference, so the water supply system for his home town had to be right! The success of the project provided him with the proof of competence he needed, and the water supply and well drilling business expanded all across Bavaria.
World War II was of course a major setback to the Bauer business. More and more of its employees were called up for military service, and many of them never returned. Just a few months after the end of the war there was once again a need for wells and water pipes. From 1946 onwards, the construction business offered many of the refugees displaced from the Sudetenland their first chance of work in Schrobenhausen. The work was hard. The largest and most important item of construction equipment was the tripod derrick.
During this period many towns and rural authorities were looking to reconstruct their wells and water pipes. The next generation of the family, in the person of Karlheinz Bauer (born 1928), entered the business during this reconstruction phase. He graduated in double-quick time, soon acquired his doctorate and also passed the examination to qualify as a government-appointed civil engineer ("Regierungsbaumeister"). When Dipl.-Ing. Karl Bauer died unexpectedly in 1956, Karlheinz Bauer was already thoroughly immersed in the business.
Even while the business was still under the management of Karl Bauer the first works in the field of foundation engineering – subsequently termed by Dr. Karlheinz Bauer specialist foundation engineering – had been carried out. In 1954, a project involving groundwater lowering and piled foundations for the Augsburg main sewage treatment plant indicated the direction in which the business was to develop.
In the 1950s Bauer moved more and more into the specialist foundation engineering field. New scientific methods were applied to produce precise planning and rigorous calculations. New dimensions were opening up in specialist foundation engineering. A key development was the invention of the grout injection anchor in 1958. The company was contracted to construct a large, exposed excavation pit with anchored pile walls for the Bayerischer Rundfunk (Bavarian Broadcasting Corporation) centre in Munich. To do so, shafts were sunk outside of the pile wall into which the anchors were to be drilled and fixed in place. But the bores deviated, and missed the shafts. Under great pressure of time, the idea emerged to grout the anchor tip through the casing tube with cement. The anchors held and the "Bauer anchor" was born. The invention was patented, and the first licences

were awarded in France, the UK, Japan and Russia. The new technique was devised just in time to be used on the wave of underground rail system construction projects in German cities during the 1960s. During those years Bauer underwent strong growth. Sales boomed, as did workforce numbers. Following initial contracts outside of Germany in Switzerland and Austria, Bauer was soon responding to the major demand for construction engineering due to the oil boom in the Middle East, carrying out projects in Libya and Saudi Arabia. However, there was a lack of specialized machinery for the new techniques, for pile driving and for anchoring. Consequently, the company decided to design and manufacture a brand new anchor drilling rig.

Marienhof excavation pit for the underground/overground rail crossing, Munich 1967

And in 1969 the first UBW 01 rolled off the production line. It was followed in 1976 by the first rotary drilling rig, the BG 7, and in 1984 by the trench cutter. It was also in 1984 that the first large-scale manufacturing unit dedicated to equipment manufacture was built, today known within the company as the "Schrobenhausen plant".
The seventh generation of the Bauer family, in the person of Prof. Dipl.-Kfm. Thomas Bauer (born 1955), joined the company in 1982. After studying in Munich, Thomas Bauer spent some time in the USA, gathering experience working for a major construction company. In his early years in the family business he began as commercial manager of the International Division, and soon after took over as general manager of Commercial Administration and Plant. From 1986 onwards he was sole managing director of the company, and for a number of years he at the same time headed the company's specialist foundation engineering operations in Germany.

Chronicle

1790 Sebastian Bauer acquires a coppersmith's shop in the centre of Schrobenhausen
1928 Dipl.-Ing. Karl Bauer constructs the Schrobenhausen water supply system; construction of wells and water pipes throughout Bavaria
1948 First business premises on Wittelsbacherstrasse
1952 Dr.-Ing. Karlheinz Bauer joins the business
1956 Office building on Wittelsbacherstrasse
1958 Invention of the injection anchor on the construction site of the Bayerischer Rundfunk building in Munich
1967 Workshops on Pöttmeser Strasse
1969 First anchor drilling rig UBW 01
1972 Construction of the new head office building
1976 First heavy-duty rotary drilling rig BG 7
1984 Works complex West begins operations
1984 Trench cutter, sealing of Brombachsee lake
1986 BAUER Spezialtiefbau GmbH, Prof. Thomas Bauer becomes sole managing director
1990 Founding of BAUER und MOURIK Umwelttechnik GmbH & Co
1990 Founding of SPESA Spezialbau und Sanierung GmbH
1992 Acquisition of SCHACHTBAU NORDHAUSEN GmbH
1994 Founding of BAUER Aktiengesellschaft
1998 Acquisition of KLEMM Bohrtechnik GmbH
2001 BAUER Maschinen GmbH becomes an independent company
2001 Acquisition of EURODRILL GmbH
2002 New factory halls and extensive outdoor site for Bauer Maschinen in Aresing
2003 Acquisition of FWS Filter- und Wassertechnik GmbH
2004 Acquisition of the majority shareholding in PRAKLA Bohrtechnik GmbH
2005 Founding of TracMec Srl., Imola, Italy and Pileco Inc., Houston, Texas, USA
2006 On July 4th: First public listing of BAUER AG on the Frankfurt Stock Exchange
2008 Expansion of machinery manufacturing capacities in Aresing and Nordhausen as well as in Tianjin and Shanghai, China
2009 BAUER Group concludes its largest capital investment programme ever: new head office administration building in Schrobenhausen, new plant in Edelshausen; inauguration of machinery manufacturing plant in Conroe, Texas, USA. BAUER Resources GmbH acquires majority holding in the Site Group in Jordan
2011 The first Deep Drilling Unit was sold to South America

As construction volumes in the Middle East began to fall, Bauer found new markets in the Far East and in other regions of the world. The internationalization of the business was driven forward concertedly. The growing Equipment segment now demanded its own dedicated selling organization.
The business had now reached a size which called for a new legal form of incorporation, and in 1986 the new limited company BAUER Spezialtiefbau GmbH was entered in the Register of Companies. Towards the end of the 1980s, managing director Thomas Bauer undertook steps to strengthen the three business segments – Specialist Foundation Engineering, Germany; Specialist Foundation Engineering, International; and Equipment – by means of a new strategic addition. He looked to move Bauer into new business fields related to specialist foundation engineering so as to



Dipl.-Ing. Karl Bauer (left) turned the company into an industrial well builder known throughout Bavaria. Dr.-Ing. Karlheinz Bauer led the company onto the international stage, taking it into the field of specialist foundation engineering and launching equipment manufacturing operations. Prof. Dipl.-Kfm. Thomas Bauer shaped the current global Group, with a network of operations on every continent.

be able to offer full-service packages and operate as a general contractor. The first steps were made with the founding of WÖHR + BAUER GmbH and of BAUER und MOURIK Umwelttechnik GmbH & Co.
During this period the market situation in Germany changed fundamentally. The year 1989 became a turning point in German history, with the fall of the Berlin Wall. German reunification opened up major new opportunities for the construction industry; there was a palpable sense of euphoria. And the Bauer management, too, wanted to play its part in the reconstruction process. Old contacts were re-established, and a new subsidiary – SPESA Spezialbau und Sanierung – was founded together with former East German people's combine Schachtbau Nordhausen. In the summer of 1992 the partner organization was privatized as SCHACHTBAU NORDHAUSEN GmbH. As a result, Bauer acquired this former keystone of East German industry, with operations in all areas of the mining sector and in specialist foundation engineering, which had also carried out major projects in neighbouring Eastern European countries.
The 1990s were an exciting time for everyone involved in the German construction industry. The renovation of the transport infrastructure in the East German states and the revitalization of the city centres of Berlin, Leipzig, Dresden and Magdeburg offered the opportunity of the century to construction companies. However, the enormous demand also attracted foreign competitors, and led to a ruinous price war. The boom of the early years – during which Bauer constructed large numbers of excavation pits in Berlin, Leipzig and Dresden – lasted only until 1995.
Over the following critical years, Bauer was able to keep its earnings reasonably stable based on its international construction operations and the worldwide equipment sales which it had been building up since the 1980s. The German construction market plunged into a recession which lasted for more than ten years, and which resulted in the destruction of some of its major companies and the loss of many of its jobs.
The Far East crisis of 1998/99 also impacted on the equipment business. The company's management employed all its efforts to guide the business through the crisis, and a combination of flexibility and skilful adaptation enabled new markets to be opened up. The very next year proved to be the best in the company's history.
In the new millennium, determined steps were taken to adapt the Group to the changed world. The already advancing internationalization in particular helped to strengthen the foundations of all the company's undertakings. Soon 85 percent of the Equipment segment's total sales were being generated outside of Germany, while the international sales of the specialist foundation engineering business were three times its domestic sales.

Bauer anchoring for the Munich Olympic Stadium's tent-style roof, 1972

The structural changes to the business were also matched over the years by adaptations of the legal forms and financial structures of the Group's companies. In 2001 a parting of the ways occurred. BAUER Maschinen GmbH – which had previously been a division of BAUER Spezialtiefbau GmbH – became an independent entity. BAUER AG, founded in 1994 as a holding company, took on service functions for the operating companies. Since that time, Thomas Bauer has been Chairman of the Management Board of the parent company. The operating companies are headed by newly appointed directors.
The major boom during this period was enjoyed by the Equipment segment. In late 2002, a large-scale factory hall with an extensive outside area was acquired in Aresing near

Retaining structure/foundations, Munich Central Bus Station

Schrobenhausen. The site offered the ideal setting for efficient assembly of the large machinery, also including dedicated proving grounds. The Equipment segment grew, new subsidiaries were acquired, and new capacities had to be built up at the Schrobenhausen site and at the other plants in Germany. Manufacturing facilities were also established in the USA, Russia, China, Malaysia, Italy and Sweden.
In 2005 the German construction sector, too, began to show signs of recovery. The end of the long recession was in sight. During this phase the company was preparing for its stock market listing – a major step in the history of the business. As well as new shares, the shares held by Deutsche Beteiligungs AG, which had been a shareholder in BAUER AG since 1996, also came onto the market. 48.19 percent of the shares were retained by the Bauer family. On July 4th, 2006 BAUER AG was listed for the first time on the Frankfurt Stock Exchange. After a hesitant start, the share price rose pleasingly over the coming weeks and months.
In the spring of 2007 the market presence of the BAUER Group was restructured. Alongside the two existing pillars of the business in construction and equipment manufacture, a third segment – Bauer Resources – was established, grouping together spin-offs of business units from the two other segments. Bauer Resources specializes in environmental

Machine assembly at the Aresing plant

technology, water, energy and natural resources – a concept designed to meet the challenges of the future.
In the years 2007 to 2009, the largest investment programme in the company's history was implemented. A new head office administration block was built in the Group's home town of Schrobenhausen. The need for such a new facility had been growing over a period of many years. In fact, offices had been rented in buildings around the area, and many engineers had been working in temporary container offices on the factory site. The new building and the

Bauer head office in Schrobenhausen

renovation of the existing head office building were completed in spring 2009. At the machinery manufacturing plant in Aresing, the steep growth in business meant that major building works were needed to safeguard production. Alongside a finishing hall, facilities for component production and a logistics centre were constructed, as well as a state-of-the-art paintshop. In Edelshausen, the structural steel engineering division of the Equipment segment was relocated. The welding and lathe shops were moved to large-capacity halls, and anchor production was relocated to Edelshausen. At the Nordhausen plant of SCHACHTBAU NORDHAUSEN GmbH, the welding shop facilities were extended.
While the Tianjin and Shanghai plants in China were extended and upgraded, in the USA it became necessary to construct a dedicated facility for drilling rigs and anchor drilling rigs, in order to establish a production presence in the dollar zone and to get closer to the company's customers. The new plant in Conroe, north of Houston, Texas, was opened in autumn 2009.

The BAUER Group

The companies of the BAUER Group are divided into three strategic segments, offering engineering services, equipment and products for soil and groundwater

BAUER AKTIENGESELLSCHAFT

Construction

BAUER SPEZIALTIEFBAU

BAUER Spezialtiefbau GmbH is the original parent company of the BAUER Group, with projects all over the world. Bauer has been a key player in the development of specialist foundation engineering. Bauer Spezialtiefbau operates a network of branches in Germany, and works on all continents through over 50 subsidiaries and branch offices. The BAUER Group has further construction units in underground construction, the construction of bridges and sewage treatment plants, and renovation of historic structures.

SBN SCHACHTBAU NORDHAUSEN

SPESA SPEZIALBAU UND SANIERUNG

WÖHR + BAUER

Equipment

BAUER MASCHINEN

BAUER Maschinen GmbH develops and manufactures specialist foundation engineering equipment. Apart from rotary drilling rigs, trench cutters and deep drilling units, subsidiaries manufacture anchor drilling rigs, driving equipment, mixing plants, diesel-powered hammers, well drilling rigs, as well as the related tools. Bauer Maschinen operates a global sales network, and in addition to its Schrobenhausen head quarter also has manufacturing facilities in other parts of Germany, China, Russia, the USA, Malaysia, Italy, Singapore, Turkey and Sweden.

KLEMM Bohrtechnik

MAT Mischanlagentechnik GmbH

PRAKLA Bohrtechnik

RTG RAMMTECHNIK GMBH

EURODRILL

TracMec

SPANTEC Spann- & Ankertechnik GmbH

FAMBO

BAUER PILECO

ABS Trenchless

HAUSHERR

SG

Resources

BAUER RESOURCES

BAUER Resources GmbH, the third segment of the BAUER Group, grew out of spin-offs of business units from both the specialist foundation engineering and equipment segments. The Resources segment works in the fields of water, environmental technology, energy and natural resources. Its three divisions – the Materials, the Exploration and Mining Services and the Environment – incorporate established companies such as Bauer Umwelt BMU, Bauer Water BWS and the companies of the GWE Group.

BMU BAUER UMWELT

BWS BAUER WATER

GWE pumpenboese SBF-HAGUSTA

MBS Mineral Bulk Sampling

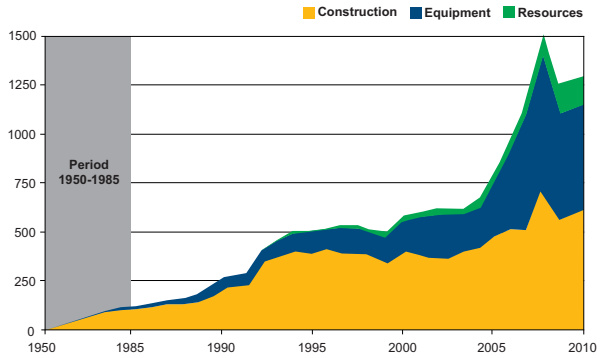
HGC HYDRO-GEO-CONSULT GmbH

ESAU&HUEBER

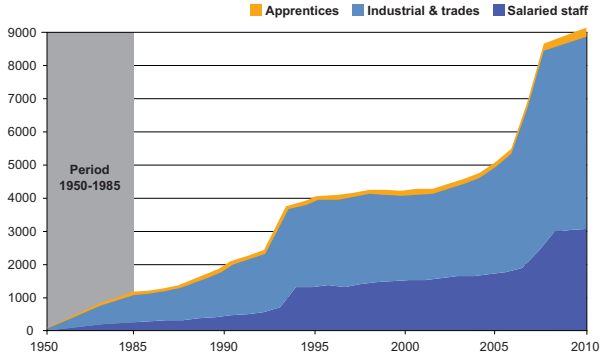
FORALITH Holding AG

SITE GROUP

Development of sales 1950-2010 in Mio. EUR



Development of workforce numbers 1950-2010



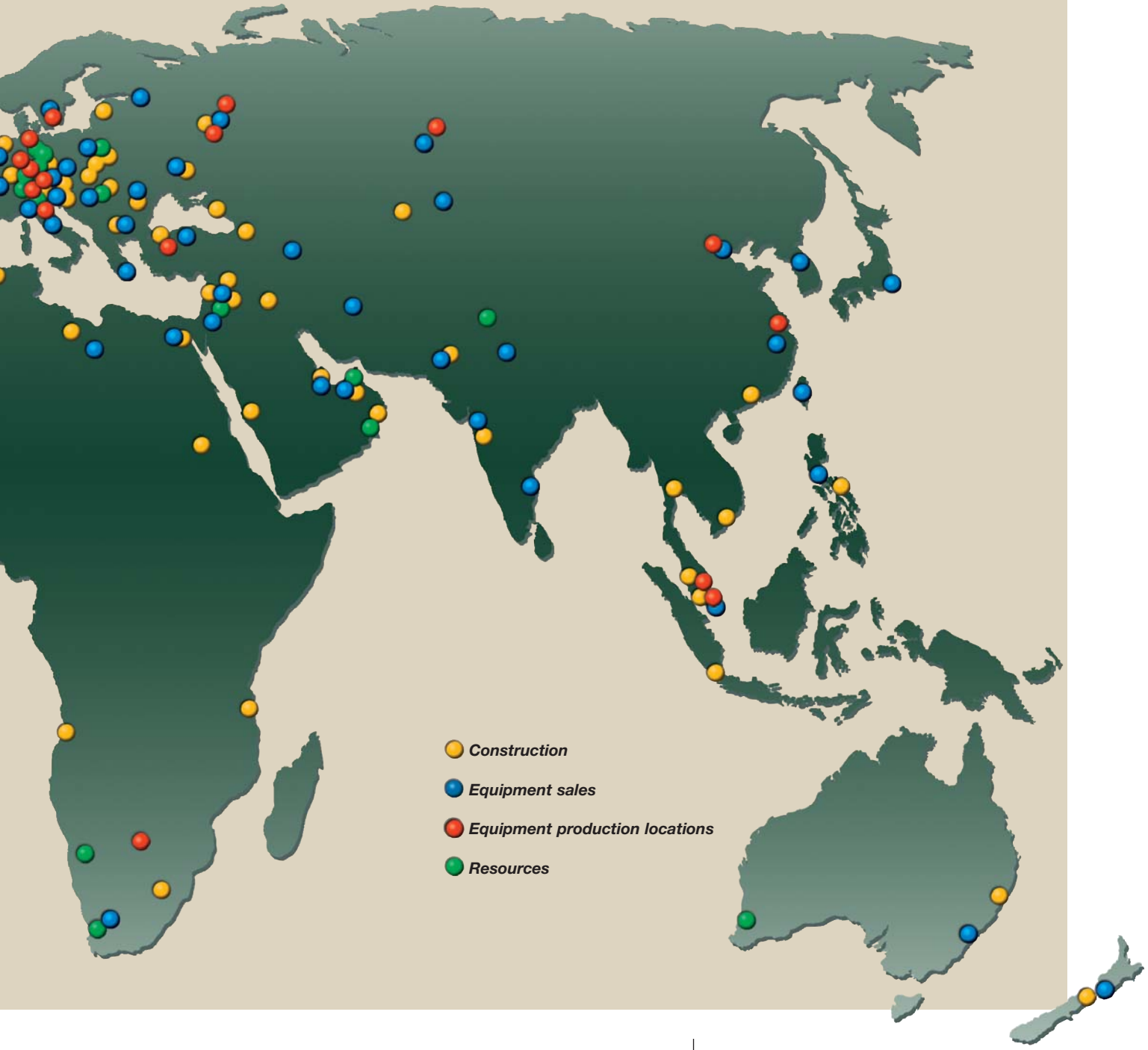
Driving of foundation piles for a residential complex in Tampa, Florida, by Bauer subsidiary Coastal Caisson Corporation

The World is our Market

Today BAUER AG, together with its operating companies, is a global concern operating on all the world's continents. In all three segments – Construction, Equipment and Resources – Bauer operates on all markets, with branches, subsidiaries or sales offices, and the Equipment segment operates manufacturing facilities all over the world.

The first steps in this process of internationalization took place in the 1970s, with initial specialist foundation engineering contracts carried out in cooperation with major construction companies in Africa and the Middle East. In the ensuing period, Bauer began to operate independently in many countries all over the world, responding to the rising demand for specialist foundation engineering.

Since then, the adoption of this strategy has repeatedly proved to be a wise decision. The BAUER Group companies were shielded from the in part severe fluctuations on their home market in Germany and, by relocating their operations, were able to compensate for many a setback suffered. What has today grown into an international network extends that flexibility across all markets. If a particular region or country suffers an economic downturn for a time, capacities can very rapidly be reassigned to neighbouring regions and acquire new business there.
This networked approach is adopted by the Equipment segment in similar form. In many countries, the companies of the BAUER Maschinen Group operate their own workshops so as to support on-site equipment operations with a strong service backup. Spares can be located in hours and delivered rapidly by means of globally interlinked SAP-based warehousing systems.
The worldwide number of Bauer employees is got approximately 10,000, almost half of them working in Germany. Among them, at various locations, are considerable numbers of apprentices, in more than 10 different trades.
The corporate culture is marked by the influence of the Bauer family as the majority shareholders. Among the company's workforce are people of all colours and creeds, from every continent on Earth.



Specialist foundation engineering – a global network

BAUER Spezialtiefbau GmbH, the original parent company of the BAUER Group, is still the key pillar in the Construction segment. Since the early 1990s, new fields of construction work have been added to the portfolio, some of which are derived from specialist foundation engineering techniques. BAUER Spezialtiefbau GmbH is based in Schrobenhausen, and its network of branches and subsidiaries carries out contracts in Germany and all over the world.
The Technical Department focuses on the technical execution of construction projects by the staff employed in the specialist departments using their range of specialist

50 metre deep cut-off wall at the Hinze Dam in Australia

equipment. The crews are focused fully on their respective process techniques. The following techniques and methods are among those employed in the specialist departments: large-diameter bored piles and FOW, auger-driven in-situ concrete piles, anchors, sheet pile walls and slim cut-off walls, diaphragm walls, jet grouting (high-pressure injection, HPI), soft gel blankets, mixed-in-place (MIP), special bores, vibrocompaction, CSV columns, ductile piles, prestressed micropiles.
Responsibility for the specialist foundation engineering equipment portfolio lies with the Equipment Department (known as MTA). It ensures that the equipment is always ready for operation, makes modifications to machinery as necessary, and builds custom-designed items.
Bauer operates subsidiaries and branch offices in many countries around Europe and on all continents, in order to ensure that customers' needs are well served right where they need to be. New subsidiaries are continually being added to the specialist foundation engineering network,

Excavation pit and foundations for the Louvre in Abu Dhabi

enabling the company to utilize opportunities on the construction market and offer its customers the right levels of service backup in all situations. From case to case, projects are acquired and executed from the home base in Germany. BAUER Spezialtiefbau GmbH has established a network structure covering the global market which efficiently interlinks the various regions, branch operations and construction sites. The individual subsidiaries work closely together to meet customers' needs in an optimum way. The international network is also highly effective in terms of planning and execution.

Tunnelling beneath Munich's Central Ring Road at Luise-Kiesselbach-Platz

Anchor works as part of the reconstruction of the Wusterwitz canal lock

CSM cut-off walls to remediate the Herbert Hoover Dike around Lake Okeechobee in Florida

Excavation pit for metro line under the Bosporus in Istanbul

As ever, the design office in Schrobenhausen plays a leading role. A Technical Services works on new techniques, and tracks the registration of patents. A detailed quality management system covers all construction works. Safety is a top priority worldwide. The expertise of Bauer Spezialtiefbau is in demand all over the world. Its engineers work with technical universities, present their experiences at conferences and symposia, supervise students' thesis work and organize in-house training seminars. Bauer development work is regularly published in specialist journals. At the regular "Schrobenhausener Tage" conference event, new techniques and methods are presented to industry specialists.

Piled walls as retaining structure at the Kocher Quarter in Schwäbisch Hall

Reconstruction of the small Olympic Hall in Munich

From underground works to building renovation

The BAUER Group's Construction segment has expanded its horizons beyond the field of specialist foundation engineering over the last two decades. The initial aim was to create extra construction capacities enabling us to combine our specialist foundation engineering expertise with related construction engineering works in order to offer an all-in-one package. Later, we moved further into a number of interesting fields away from our traditional specialist foundation engineering background. The largest step was in 1992, when we acquired a former showcase enterprise of the old East German regime: Schachtbau Nordhausen. After its traditional mining business collapsed following German reunification, Schachtbau had invested a lot of energy and creativity in opening up new fields of business in the civil engineering sector. Its huge factory halls were remodelled for the construction of bridges and other machinery manufacturing operations. When we made the acquisition, we believed that the emerging market in the former East Germany would provide enough time for the business to grow in its chosen direction and so enable the Group as a whole to open up new fields of activity. Unfortunately, the construction boom

Müss tunnel on the new Nuremberg-Erfurt rail link – constructed by Schachtbau Nordhausen

in the new federal states lasted only until 1994, and the business thus had to make major efforts to stabilize. Schachtbau's capacities proved extremely valuable to our machinery manufacturing operations as it strived for growth. Today, SCHACHTBAU NORDHAUSEN GmbH (SBN) is a sought-after partner in the infrastructure and mining sectors and in machinery and plant manufacturing. It constructs bridges and conducts other engineering works on infrastructure projects, carries out tunnelling and constructs emergency rescue and escape chambers for road and rail links, and reconstructs concrete and steel structures. Mining – its traditional core business – was developed further following German reunification. Today it plans and executes specialist underground works of all kinds for pit construction projects worldwide. SBN also carries out remediation of existing underground workings. Environmental plant manufacture is a key field of operations. Highly efficient biogas plants and water management projects for pumping stations and sewage treatment plants are constructed on a turnkey basis.

Renovation of the Alte Elster bridge in Plauen by Spesa

SPESA Spezialbau und Sanierung GmbH was founded as a joint subsidiary of Schachtbau Nordhausen and BAUER Spezialtiefbau GmbH back in 1990. In the mid-1990s SPESA attracted global attention when it was awarded the prestigious job of clearing the mountain of rubble that was Dresden's Frauenkirche. Today SPESA operates in three fields: renovation of listed monuments, concrete remediation and corrosion protection, and building renovation. Both Schachtbau Nordhausen and SPESA have in recent years begun to utilize the global networks of the BAUER Group to expand their business internationally.

Muttone bridge in Waldsassen – renovated by Spesa

Colonnades of the new palace at Schloss Sanssouci in Potsdam – restored by Spesa

In 1991, along with mechanized car-parking systems specialist Otto Wöhr GmbH based in Friolzheim, Bauer established Wöhr + Bauer GmbH. Its business was the construction of underground parking systems. After a few years, led by new managing director and additional shareholder Wolfgang Roeck, the company shifted its focus to project development in the high-end real estate sector, in prime city centre locations, usually in conjunction with underground parking garages. Exemplary models of underground parking facilities were constructed at Unter den Linden and Alexanderplatz in Berlin, and in Potsdam. Among its major real estate work, Wöhr + Bauer has recently been much praised for its "Angerhof" project in Munich.

Schachtbau Nordhausen: Construction of Schnettker bridge

Lingenberg tunnel – constructed by Schachtbau Nordhausen

Schachtbau Nordhausen: Steel bridge over the Havel

Masonry renovation by Spesa at the Lorch monastery

Concrete remediation at ice sports stadium, Augsburg (left)

All the equipment for specialist foundation engineering

The BAUER Maschinen Group – including BAUER Maschinen GmbH and its many subsidiaries – is the clear world market leader in the design and manufacture of specialist foundation engineering equipment. No other manufacturer in the world offers such a complete range, and consequently Bauer equipment is regularly presented on the largest stand in its sector at the Bauma trade fair in Munich, the world's largest construction machinery show. Since 2001 BAUER Maschinen GmbH has been an independent company. It grew out of the workshops operated by BAUER Spezialtiefbau GmbH. Bauer Spezialtiefbau began designing and building new equipment for the rapidly growing foundation engineering business during the 1960s, because of the lack of suitable equipment on the market at the time. The close link to practical applications in the construction field remains one of the key selling features of Bauer equipment. BAUER Maschinen GmbH has its own process engineering department, which develops and markets new construction processes and techniques from the equipment manufacturing perspective.

Edelshausen plant of BAUER Maschinen GmbH

The history of Bauer's equipment manufacturing operations began in 1969, when the first anchor drilling rig, the UBW 01, was launched on building sites. From the very beginning Bauer relied on hydraulic power, and as a result achieved much greater efficiency then had previously been attainable by the existing compressed air method. A few years later the first rotary drilling rig – the now legendary BG 7 – caused even more of an uproar in the industry. The rig revolutionized drilling techniques. This established the foundations for a level of success which could not have been foreseen at the time. Since the 1990s, Bauer has consistently pursued its aim of building machines featuring higher torque allied to lower operating weight. In 1984, Bauer engineers designed and built the first trench cutter. Precision know-how is embodied in the tools. Bauer starter bits and roller bits are drilled through the toughest rock formations. All Bauer equipment today incorporates highly developed hydraulic systems. Electronic control and monitoring systems are featured as standard.

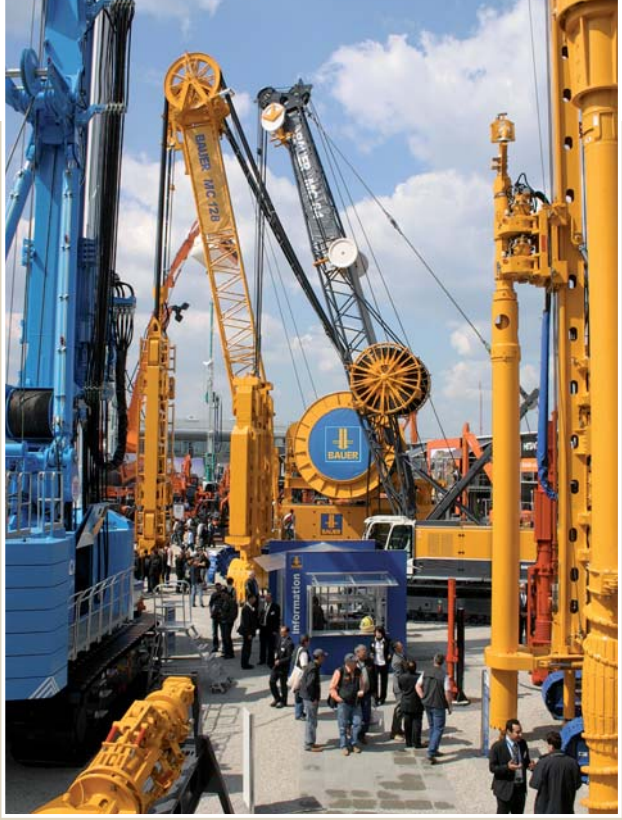
Over the years, the whole range of specialist foundation engineering equipment has been expanded and enhanced. The new equipment categories are reflected above all in the various subsidiaries of BAUER Maschinen GmbH. MAT Mischanlagentechnik offers mixing and separating systems for suspensions. RTG Rammtechnik develops flexible pile driving and drilling equipment. Klemm Bohrtechnik is the world's most respected supplier of anchor drilling systems. PRAKLA Bohrtechnik manufactures well drilling rigs. Klemm and Prakla also offer geothermal drilling rigs as part of their respective product philosophies. Eurodrill produces drill hammers, and TracMec Srl. in Italy manufactures small-scale undercarriages. PILECO Inc. in Houston, Texas, is a specialist in diesel-powered hammers and heavy-duty piling leaders. Fambo specializes in hydraulic hammers. In 2007 Bauer entered the casting field by its acquisition of the Olbersdorfer Guss company based in Zittau.

In 2009 two new companies joined the BAUER Maschinen group: Hausherr, based in Unna, has a longstanding tradition in the production of blast-hole drilling rigs for open-cast mining. ABS Trenchless, based in Drolshagen, owns

Aresing plant

patents relating to trenchless construction engineering, for the installation and renovation of horizontally laid pipes and cables.

Most Bauer equipment is still manufactured in Germany. Around the Group's home base, the plants in Aresing, Schrobenhausen and Edelshausen produce rotary drilling rigs, diaphragm walling systems and pile drivers. The machinery manufacturing division of SCHACHTBAU NORDHAUSEN GmbH (SBN) – as the largest system supplier to Bauer Maschinen – designs and manufactures uppercarriages and undercarriages, masts, hydraulic power packs and components for the new deep drilling rigs. The town



Bauer stand at the Bauma 2010 show

Start of production at Conroe plant, Texas, in 2009

Base carrier and cutter – developed by Bauer

of Drolshagen in the Sauerland region of Germany is where the Klemm Bohrtechnik and Eurodrill subsidiaries have their plants.
High "Made in Germany" quality is maintained throughout the Equipment segment's manufacturing locations, whether in other European countries or overseas. Manufacturing facilities exist in the USA, Russia, China, Malaysia, Singapore, Italy, Turkey and Sweden. The branch offices and agencies of the equipment sales operation are to be found locally all over the world, and a global customer service network ensures equipment is always ready for operation.
The company presents new products at the Bauma show as well as at other major trade fairs in Las Vegas, Paris, Shanghai and Verona. And Bauer customers from all over

Newly developed deep drilling rigs – the TBA 300

MAT desander BE 500 at the Gotthard tunnel in Switzerland

the world are regularly invited to attend the in-house exhibitions held in Schrobenhausen.
The company recently expanded its machinery range by developing a series of cranes – the MC 32 to MC 128. As a result, Bauer now has its own in-house, flexibly deployable base carrier unit to cover all requirements in the specialist foundation engineering field. Bauer's machinery manufacturing business entered a new sphere in 2009 when it began developing and manufacturing deep drilling rigs. The TBA series comes in a range of sizes. The largest is the TBA 300. The rigs are designed for oil and gas drilling, and for deep geothermal energy extraction.

Water and environment, energy and minerals

Bauer Resources is the third mainstay of the Group alongside the Construction and Equipment segments. The establishment of this segment saw a number of operations, embodied in spin-offs of existing business units, incorporated into a new organizational structure. Covering the fields of water, environmental technology, energy and natural resources, the segment's operations are all of key importance to the future of the world.

Cut-off wall for the Red Dog Mine in Alaska

The challenges in those fields are sure to increase dramatically over the coming decades. Bauer is in a position to help resolve some of the major problems faced by our planet.
The operations culminating in the establishment of Bauer Resources have been emerging over the last decade and a half. Resources-related activities had been growing steadily within the BAUER Environment Group and in BAUER Maschinen GmbH. The BAUER Environment Group had from the very beginning been concerned with soil remediation and water treatment. And the mining operations of Bauer Maschinen had been steadily growing. Its activities stretched more and more beyond the supply of equipment for exploratory drilling, primarily for diamond exploration. In Canada and Namibia, Bauer Maschinen participated in local operating consortiums.
The step which ultimately led to the establishment of Bauer Resources was the acquisition of the German Water and Energy (GWE) Group based in Peine. GWE, with its complete range of products for exploring, recovering and distributing groundwater, has become a market leader in its field, operating five production locations. The best-known GWE Group companies are Pumpenboese GmbH & Co and SBF-Hagusta. GWE, through its production units and selling organizations, supplies steel and stainless steel well engineering equipment, wire wrapped screens, pipes and fittings in PEHD and PVC, as well as patented steel casings with hard rubber corrosion protection from manufacturer SBF-Hagusta. GWE also supplies corrosion-proof stainless steel components for well drilling and groundwater retention, plastic-coated steel casings, screen and casing pipes, as well as raiser pipes.
BAUER Resources GmbH is a holding company beneath which three divisions operate. The Materials Division essentially comprises the operations of GWE. The Exploration and Mining Services Division is where the exploration operations are concentrated. It primarily carries out deep-level drilling using heavy-duty rotary drilling rigs or well drilling rigs. Its principal markets are in Canada, Australia and a number of African countries.

The Prakla RB 50 in operation – water supply in Namibia

There have also been a number of interesting activities in the energy field in recent years, including foundation works for wind power plants on flat water and on land. Future

prospects for BAUER Resources GmbH include the use of a new drilling rig for deep-level geothermal energy and oil drilling, designed and built by Bauer Maschinen. FORALITH Holding AG, a Swiss subsidiary of Bauer Resources, is a specialist in deep-level exploratory drilling, including in preparation for deep geothermal energy extraction.
The Environment Division essentially covers the area of activities of the BAUER Environment Group, which has been working in water- and soil-related fields since the early 1990s. Bauer Umwelt BMU remediates contaminated areas, while Bauer Water BWS constructs plants. Esau & Hueber is also involved in water purification, using diamond to disinfect cold water by means of electrolytic ozone production. For hydrogeological surveys, such as exploratory investigations prior to drilling for geothermal energy sources, Bauer Resources operates its own consulting engineering unit, HydroGeoConsult HGC based in Freiberg, Saxony.
In 2009 Bauer Resources acquired a majority share in the Jordanian Site Group, a company with experience in the oil business, and also in the construction of wells, in the Middle East.

Drilling rig operated by BAUER Group subsidiary Site Group

BWS separation plant for water containing oil

Well engineering materials from German Water and Energy

NIMR Water Treatment Project – tests for planting of the reed basins (left)

BAUER Resources GmbH executes its biggest project in the Sultanate Oman. A Reed Bed treatment system, having the size of 3.6 to 6.4 km, biologically treats residual water (contaminated with oil) coming from the petroleum industry in Oman. The operation period of the plant, of which the first half was commissioned at the end of 2010, will be 20 years.

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