INFORMER

FELBERMAYR GROUP MAGAZINE 1/2014

THE FIRST TIME
PREMIERE FOR THE SKY-BLUE 1000-TONNER

BREATHTAKING
100,000 CUBIC METRES OF BUILDING SPACE DEMOLISHED

ANIMALISTIC
MOVING "CRAB-LIKE" OVER THE BRIDGE

PHOTO: WILLI WILHELM

Reforms!

Dear readers,

We are proud of our company and of our employees. It is clear to see what we have achieved together. For example, 40 years ago, we founded a department for heavy transport. Ten years later, we branched into the container rental sector and, from this, founded the locally successful Waste Management division. Another ten years on from this, we acquired several low-loader rail carriages from Intercont, meaning that we now had a presence on the road and the railways. Around the same time, we purchased the heavy load port in Linz and thus brought to life our vision – rail, road and water as transport modes were brought together. To maintain this ten-year cycle of development, we should draw your attention to the creation of Felbermayr's Specialised Civil Engineering division in 2004, and „Bau Salzburg", which saw Felbermayr becoming established in the canal, bridge and power plant construction sector. And, in the same year, Scheffold and AKS (crane-rental companies in Tirol, Austria) were integrated into the company, along with the Polish company, ZRE, which specialised in rail transport. Today, another ten years later, we can say that these companies and their employees feel right at home with the sky-blue structures and are now an essential component of our joint success.

However, the politically motivated general conditions in Austria are making it increasingly difficult to operate successfully – companies that have continuously grown in the past decades, thanks to their own hard work and investment, are being punished for this very growth. The potential damage caused by this ranges from increasing bureaucracy and failed energy and climate policies, through to a tax burden that is difficult to fight against – for both employees and employers. This makes it difficult to keep up the momentum and therefore not get bogged down by this swampland of taxes.

Our work needs to be worthwhile again, and must not be devalued by ever-increasing incidental wage costs. We remain hopeful that this backlog of reforms will finally be overcome so that, in the future too, satisfied employees can find employment with successful companies.

Horst Felbermayr

Best regards,

Horst Felbermayr DI

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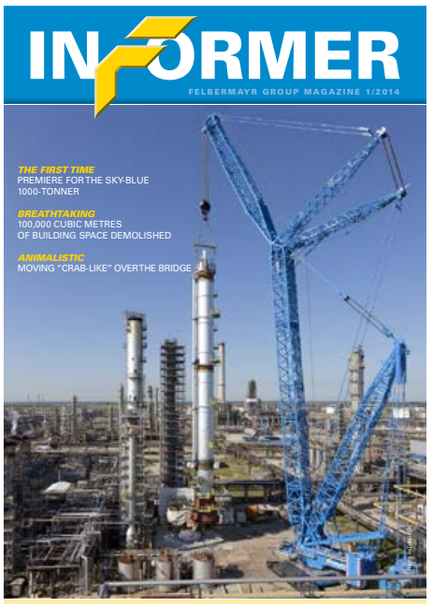
Starting in April, employees in the Pipeline Rehabilitation department at Felbermayr were commissioned to revitalise a section of the tunnel for the Opponitz hydroelectric power station in Lower Austria. The supply line, which is approx. 2400 metres long, was renovated using the relining procedure. This procedure involves installing new pipelines in the existing tunnels and backfilling the existing annular gap with a special concrete emulsion. Apart from the extremely short construction time, this procedure can also help to achieve large cost-savings compared to a new construction.

PHOTOS: MARKUS LACKNER (3), WILLI WILHELM



COVER STORY
1000-TONNE CRANE

There is a new kid on the Felbermayr block – the LR1750 now has a big brother, the LR 11000. Find out more on page 8.

STRUCTURAL ENGINEERING
NEW SERVICE CENTRE IS BUILT

In autumn 2013, Felbermayr's Structural Engineering division started work on the construction of a new service centre in Bisamberg, near Korneuburg. The customer for this project, which Felbermayr carried out as a general contractor, is Kuhn, a loading and construction machinery engineering company. The supporting structure for the hall, which is approx. 1100 square metres in size and has its own wash bay and paint shop, was built using steel profiles. The adjacent office building includes storage and side rooms with a floor area of around 500 square metres and was built using prefabricated concrete elements. By the end of April, the entire interior of the building was completed. As a general contractor, Felbermayr is also responsible for constructing the entire outer surface of the building. An oozing basin covering more than 200 cubic metres had already been constructed, and the asphalt work, covering a total surface area of 6600 square metres, was completed at the end of April. The building was completed and handed over in May 2014.

INDUSTRY EVENT
The trade fair in Antwerp was a complete success

With more than 5500 visitors, the "Breakbulk Europe", which took place in mid-May, not only saw a new record for visitor numbers being set, but also offered a wealth of information for heavy-load service providers, carriers and companies linked to shipping. Felbermayr made the most of its appearance at its sky-blue stand to provide visitors with a progress report on the current redevelopment of the Krefeld port. But Peter Stöttinger, Managing Director of the company, notes that there was a lot of interest in, and inquiries about, the 1000-tonne crane that is new to the Felbermayr fleet. This trade fair also offered an ideal platform for Felbermayr's subsidiaries – BauTrans, Best Logistics, Haeger & Schmidt, RKE and Wimmer Maschinentransporte – to have a unique opportunity to meet business associates away from the negotiating table and to exchange news. Raffle tickets were sold among the hundreds of visitors to the trade fair stand and the winner, to their delight, took home a model of LR 1750 from the German die-cast model company, Conrad.

PHOTOS: MARKUS LACKNER, WILLI WILHELM, KUHN

CONSTRUCTION PROJECT SIGN	
Construction project:	Hofer store in Ansfelden, Auweg 2, 4052 Ansfelden
Client:	Hofer KG, Sattledt branch office
Planning/local construction supervision:	Ing. Wolfgang Bester (jürgen matzer ziviltechniker GmbH)
Sareno project manager:	Roland Löfler
ETICS area:	673 m²
Insulation system:	Baumit EPS-F external thermal insulation composite system
Plugging:	Baumit adhesive anchor 55 (concrete)
Render:	Baumit SilikonTop 1.5 mm (first layer); Baumit UniTop Fine 1 mm (second layer)
Start of full thermal insulation work:	14th October 2013 (CW 42, 2013)
Completion:	5th November 2013 (CW 45, 2013)

SARENO
THERMAL REHABILITATION

Thermal rehabilitation is a job for specialists: Hofer is setting new standards with the pioneering architecture used for their stores – insulation materials with a thickness of 46 cm. Using the latest machine technology and qualified specialists, SARENO Objektisolierung managed to carry out the thermal insulation of the Hofer store in Ansfelden in a record time – just 2½ weeks. The innovative architecture also includes energy-efficient thermal insulation along with intelligent machine technology, as was used by SARENO for this building: They used the Baumit insulation board (0.040 W/mk) with a thickness of 46 cm as the insulation material. The insulation material thickness of 46 cm was laid in two layers (first insulation board: 40 cm; second board: 6 cm). The rendering was applied using two layers of textile reinforcement mesh. The customer requested that the rendering structure be as smooth as possible. To meet this request, SARENO also had to apply the rendering in two work steps (first layer: SilikonTop 1.5 mm; second layer: UniTop Fine 1 mm).

MAJOR PROJECT
Gantry crane for France

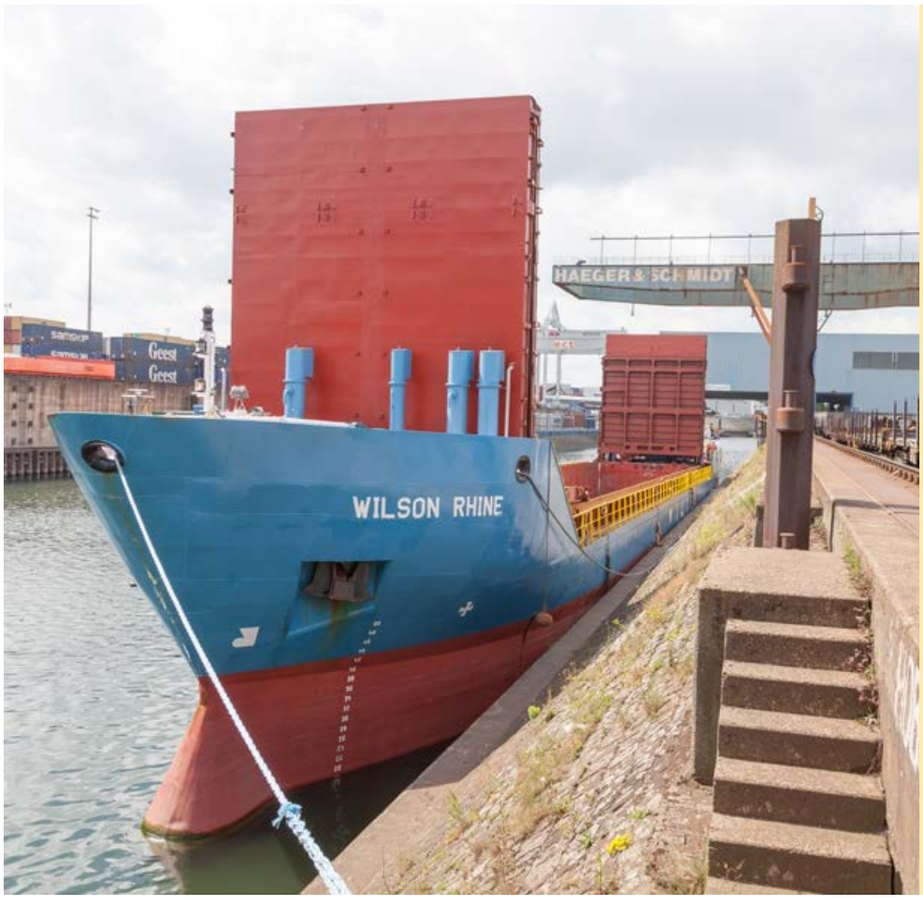
In the first half of 2014, Felbermayr's subsidiary BauTrans was commissioned by the crane manufacturer Künz to transport four gantry cranes. The four crane systems were heading to the port in Sandouville, near Le Havre in France. The cranes were produced at the various production facilities in Austria, Poland and Slovakia. Working with lengths of around 41 metres and widths of up to 5.95 metres, the transportation was quite a challenge. The demanding transport route took the cranes approximately 2000 kilometres across Europe. By mid-May, the final shipment arrived on time for delivery at the construction site.

PHOTOS: SARENO, ANDREAS MATHIS

HEAD IN THE CLOUDS

Transport order for the world's largest hydroelectric power station

At the end of February, a turbine wheel, weighing in at approx. 73 tonnes, began its journey to one of the world's most powerful hydroelectric power stations. The wheel has a diameter of 5.6 metres and was manufactured by Voith Hydro, an international engineering company. The wheel was picked up from the factory in St. Pölten. From there, this power station component was transported to Schwechat Airport (Vienna) on an eight-axle semi low-loader. A 350-tonne mobile crane was used to load the runner, which has a diameter of approximately six metres, onto the plane. The high-tech component's final destination was the hydroelectric power station in Bratsk on Lake Baikal – located approximately 7000 kilometres away.



PHOTOS: MARKUS LACKNER, MARIUS HÖFLINGER

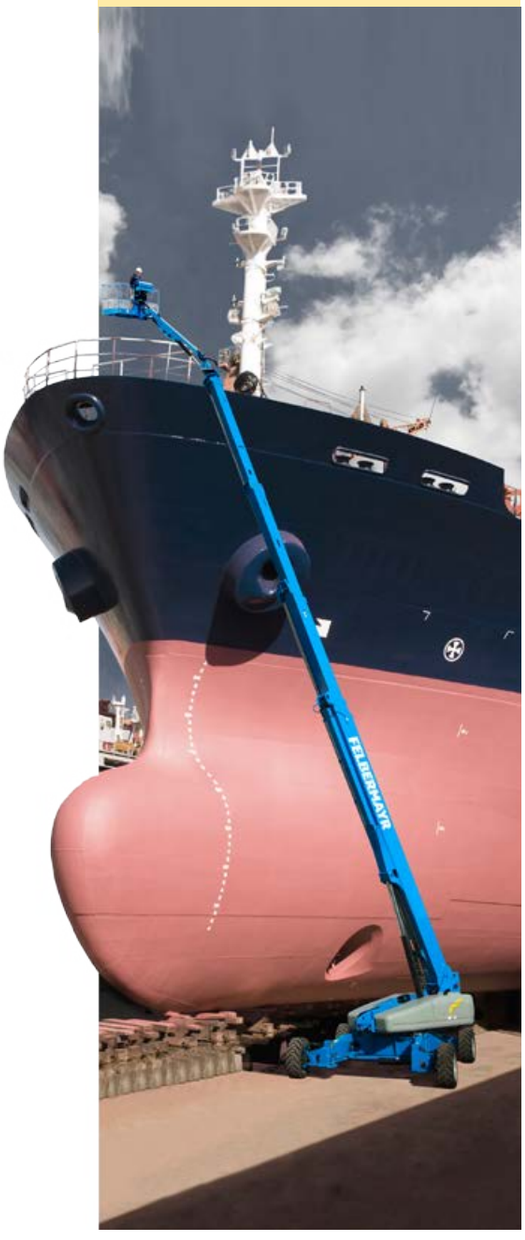
SHORT SEA SHIPPING

Haeger & Schmidt are forming an alliance with Wilson ASA

Haeger & Schmidt International GmbH and Wilson ASA are planning to found a joint venture in order to pool the experience and expertise of Wilson NRL Transport GmbH and the river-sea shipping division of Haeger & Schmidt International GmbH. This new company will be called HSW Logistics GmbH. The objective of this collaboration is to be able to offer customers an even greater range of logistics solutions. HSW Logistics GmbH has access to the powerful combination of the vast inland navigation network, cargo-handling and warehouse logistics, and transport logistics from Haeger & Schmidt along with Wilson's fleet of ships – they currently have 115 seagoing vessels operating in the European river-sea traffic. Transport solutions are offered on, to and from the Rhine, including delivery to and from transhipment point. The tried-and-tested solutions which are already available in Norway and the United Kingdom will remain unchanged.

AIMING HIGH
57-metre working height

In the summer, Felbermayr will receive two of the highest telescopic work platforms ever supplied in Europe. With a working height of 57 metres, this innovation achieves heights that were previously reserved for truck platforms. Furthermore, the aerial platform is portable, even at full height, and requires no support. Yet another advantage lies in its compact design, which also means that it can be used even in confined spaces. For the time being, the machines will be stationed in the Linz and Vienna subsidiaries. The F-57 TKX telescopic platform from Genie will be used at Felbermayr.



PRECISE
MACHINE INSTALLED FOR LIGHTWEIGHT AUTOMOTIVE PARTS

In January, Felbermayr transported the components for two v-duo machines, which are used in the production of carbon-fibre plastic bodywork components. The shipments departed from the Engel plant in St. Valentin. Engel is an Austrian manufacturer of injection moulding machinery. The destination of the shipments was the BMW plant in Landshut. The components were assembled on-site by the Felbermayr subsidiary Wimmer Maschinentransporte – starting with the unloading. After the components were unloaded, the individual components (each weighing up to 100 tonnes) were moved to the production hall using a self-propelled industrial roller and were assembled there to become a 220-tonne machine. Due to its weight, the machine was then transported further to its base using an eight-axle self-propelled transporter. Once there, the machine was placed on its base using lifting gear. This method was used to set up two machines within just two weeks.

UNDER HIGH VOLTAGE
Grid expansion in Saxony and Thuringia

In the Free States of Saxony and Thuringia, 50 Hertz Transmission GmbH's high-voltage grid is also being modernised. To minimise the effects on nature and the environment as much as possible, the new lines are being partially installed on existing power lines while power is still running through the grid. Steel lattice poles, with heights of up to 90 metres, are being erected. To ensure that the individual mast sections, which are first assembled on the ground, are installed safely at these heights, cranes with load-bearing capacities of up to 400 tonnes were used. Otherwise, it would have been impossible to manage the work with these individual components, some of which weigh 30 tonnes. In autumn, the pipeline construction companies LTB Leitungsbau GmbH and ALPINE-ENERGIE Deutschland GmbH will be able to hand over their sections of the line to the operator – right on time. This means that these companies alone erected more than 100 steel lattice masts, weighing over 10,000 tonnes in just one year.

PHOTOS: GENIE, DUNJA WOLSKI, WIMMER

PREMIERE

LIFTING GEAR USED ON THE LASTDRAGER

In April, Felbermayr's subsidiary, Best Logistics, transported two heat exchangers (each weighing 143 tonnes) to an air separation plant in the Polish town of Głogów. These components – measuring 18 metres in height and about 7 metres in width or height – started off their journey in China. From there, they were shipped via Rotterdam to Stettin. Best Logistics handed over the components in the Polish port of Stettin. In Stettin, a floating crane was used to transfer the components from the ship onto the "Lastdrager 30". Due to the dimensions of the components, the load had to be transported by ship as close to the destination as possible. According to Best Logistics' Managing Director, Andreas Häfner, this meant that it was necessary to erect a temporary RORO facility in Głogów. Lifting gear was used to load the heat exchangers onto the low-loader – the load was lifted and the low-loader was then moved under it so that it could be lowered onto the low-loader. It was then possible to use a tractor to roll the load out. The last kilometres to the new Air Liquide air separation plant could then be covered by road. In addition to the two heat exchangers, Best Logistics also transported about a dozen other components to Głogów, with a total weight of 50 to 100 tonnes.

PHOTOS: ANDREAS HÄFNER, MARKUS LACKNER

HYDRAULIC ENGINEERING

Heavy goods vessel in use for riverbank landscaping

For several weeks, the Horst Felix, a heavy goods vessel, was in operation on the Upper Austrian section of the Danube, close to Mauthausen, for Felbermayr's Hydraulic Engineering division. The work started in March and included the erection of platforms and the implementation of measures to reinforce the riverbank. 18,000 tonnes of gravel was laid so that the platforms could be erected. The objective of the work was to optimise the flow conditions of the river and to create quiet areas for fish. Around 10,000 tonnes of armour stone was used to reinforce the riverbank. The measures were necessary due to erosion of a section of the river that runs for about two kilometres.

To lift the 358-tonne column, a total of 1788 tonnes of ballast was required for the two cranes.

Duet of the giants

Felbermayr Lifting Technology can look back on a successful premiere for the LR11000. At the end of May, the thousand-tonne crane was used, together with another heavyweight, to lift a 358-tonne „Butylenesplitter". The setting for this spectacle was a Petrom refinery in Romania.

A who's who of Felbermayr Lifting Technology was used for the turnaround at the refinery in Ploiesti, says Thomas Titura about the project for the Romanian subsidiary of Petrom. Precisely 68 cranes and 22 lifting platforms with working heights of up to 103 metres. With the mobile cranes, the range of machines extends through to the 500-tonne crane. However, the highlight among the lifting devices was the two LR 1750 machines with a maximum load-bearing capacity of 750 tonnes and the 1000-tonne LR11000 crane. Since Felbermayr has exclusively received the contract for lifting and transport work, seven heavy-duty tractor units with any low-loaders that may have been required were also in continuous operation.

Transports with obstacles

To refine their functions, the machines have to be shut down and serviced at regular intervals. This "turnaround" usually takes place every two years. In the case of the turnaround at the Petrom refinery, the work was concentrated on the FCC plant for the manufacture of hydrocarbons. Essentially, during this process, four components with unit weights of 81 to 358 tonnes are transported and lifted. Three of these four components were transported to the refinery from Buzău, a city that is located 100 kilometres away. While it was possible to transport the two heavy parts (weighing approx. 80 tonnes) using a 10-axle semi low-loader, the 32-axle series had to be used for the 358-tonne „Butylenesplitter". "Despite the 56 metre length and a diameter of more than 4.9 metres, we were able to complete the transport of this column in just one day – even though three days were planned for it," says Titura proudly

as he goes on to explain how the company overcame one of their greatest obstacles just 30 kilometres from the refinery: "At this point in the journey, we came across a bridge that did not have the required rated load capacity, so we decided to use a pivot plate to move each of the 16 axles in a staggered formation. This meant that the load was distributed perfectly." The total length being approx. 84 metres meant that it was still quite a feat to traverse the local roads. However, thanks to detailed studies of the route, there were no surprises and the shipments were delivered according to plan. The same was true for the delivery of the fourth column, which departed from Bucharest. We used a low-loader trailer to collect this 81-tonne component from the plant. To transport this column to the refinery too, two mobile cranes were used to transfer it onto an eight-axle semi low-loader. However, since pipe bridges with low clearance heights kept getting in the way (even in the grounds of the plant), cranes had to be used a few more times to lift the component over these obstacles. Of course, the same was true for all of the other columns too. The reactor head, which departed from Deggendorf, was also noteworthy when it came to transport. Due to its diameter of 5.44 metres, it would not fit through the gates to the plant and therefore had to be lifted over the refinery's fence using a 500-tonne crane.

Premiere for the 1000-tonne crane

The LR11000 and an LR1750 were used to lift the column, which is 56 metres long and weighs in at 358 tonnes. "This lifting operation was preceded by numerous studies, which started around one year before the event," says Titura. Ultimately, both cranes together had a total charge weight of 1788 tonnes. The LR11000 was transported directly to the construction site by road and sea from the Liebherr plant in Ehingen. For the 358-tonne component, a new earthquake-proof foundation was laid. According to Titura, this was necessary due to new regulations. To lift the column, the first step was to attach the hook on the LR11000 to the column head and attach the hook on the LR1750, which was being used as a tracking crane, to the lower end of the column. At this point, the cranes were able to get to work. Slowly but steadily, the reactor head was lifted into the air until it finally reached a height of approx. 68 metres. The LR1750 cautiously tracked the load and thus prevented the column (at 56 metres high) from swinging. During this process, the boom on the LR11000 reached a height of 93 metres. The LR1750 was no longer required at this point. Together with 450 tonnes of suspended ballast, 210 tonnes of revolving platform ballast and 50 tonnes of central ballast, the LR11000 was now able to turn by 180 degrees. The crane with suspended load then had to be moved by a few more metres to ensure that the column could be positioned above the foundation – accurately to within centimetres. At this point, the time had come for the precision work of lowering the load over the threaded rods. After a few hours of concentrated work by the crane operator, the job was done and the column had reached its final position, where it could be secured in place by the installers. Since the new reactor was installed parallel to the old one, it was then necessary to remove the old column and take it away from the site.

Technical specifications for the LR11000

Max. load capacity for unloading	1000 t at 11 m
Max. load torque	15,171 tm
Main boom	24 m – 156 m
Extension trellis	18 m – 114 m
Derrick boom	36 m – 42 m
Revolving platform ballast/ central ballast	250 t/90 t
Derrick ballast	450 t
Engine output	500 kW
Driving speed	0 – 1.36 km/h
Total ballast	790 t

The use of pivot plates meant that the bridge could be crossed in a staggered formation.

PHOTOS: WILLI WILHELM

After about four weeks of intensive use of devices, the work of about 100 Felbermayr-employees was done. According to Titura, the project's success can be, to a significant degree, attributed to the excellent collaboration with other companies involved. "Since we have already been part of such maintenance work three times, we know the refinery very well," Titura continues and is glad about the excellent collaboration with OMV associate company Petrom. Incidentally, the client was very happy, too. Petrom's product manager Betram Muchan applauds Felbermayr's services: "they are professionals and can master even the most complex situations." ■

FELBERMAYR®

PHOTO: MARKUS LACKNER

The high-rises, which were constructed using poured concrete, were demolished with a 1300 kg wrecking ball.

Construction site clearance at a high level

For around 40 years, the four high-rise buildings close to voestalpine in Linz were a landmark that could be seen from afar. Early this year, these symbols of the boom years during the seventies began to crumble. This marked the beginning of one of the biggest demolition jobs to be carried out in the history of Felbermayr.

With a gigantic space of 100,000 cubic metres, the demolition was one of the biggest to be undertaken in the last 10 years in the Alpine republic. The demolition of the buildings, which were originally used to house employees of the former VÖEST, became necessary on account of regional planning considerations – the four 45-metre high buildings were no longer in harmony with the constant changes in urban development, industry and living comfort.

Demolition technology

Before the actual demolition work could begin, the buildings had to be cleared and gutted. This involved the recycling and disposal of around 500 tons of materials of highly varying fractions. "We cleared everything, from door frames to wash hand basins", reported an operator. This work commenced in November of last year. The actual demolition work has been in progress since the beginning of the year.

In general, controlled explosions are used for demolition projects of this order. In the case of the buildings in the Lunzerstraße in Linz, however, this proved impossible. "Owing to the media supply lines which had been laid in the construction site, this would not have been expedient", explains project manager, Bernhard Radler, going on to say: "This is why we decided to use a demolition ball". In order to ensure safety for the transportation of the demolition ball, which weighed around 1300 kilograms, a Liebherr cable excavator with a dead weight of 45 tons and 20 tons of rear ballast was used. It had only been possible to use the demolition ball because there was sufficient clearance around the buildings to be demolished. Further excavators, including, for example, a CAT with a dead weight of 64 tons and a 33-metre long boom, were used for additional demolition, crushing and sorting work.

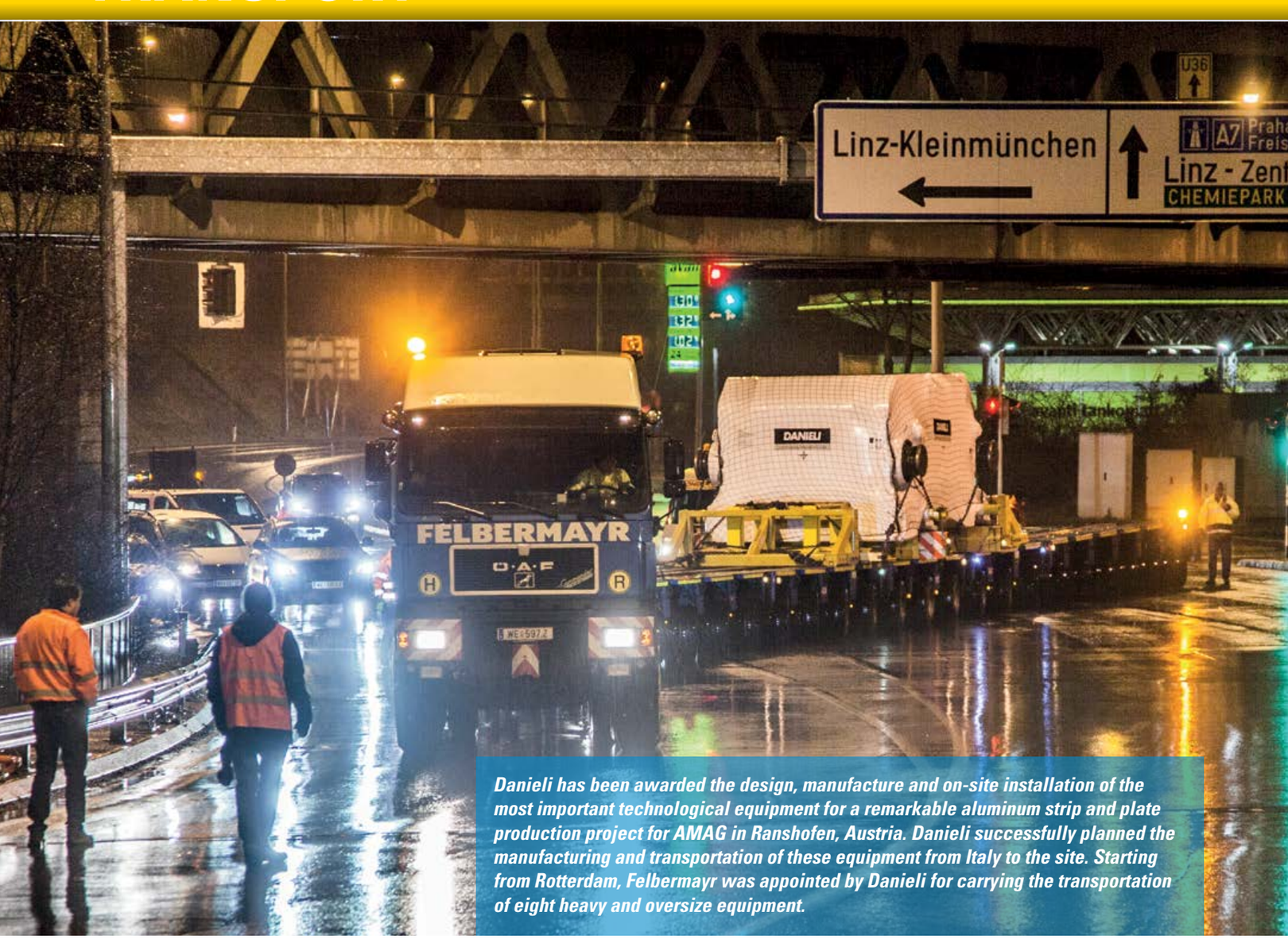
In addition to the demolition work, the mineral materials were processed on-site using a mobile crusher. In this way, around 100,000 cubic metres of concrete were recycled for use as back-filling material. This is equivalent to around 5000 truckloads. In order to avoid unnecessary transportation, the material was reused on site. Sorting grapplers were used extensively to separate timber and metals and recycle them in accordance with fraction-specific specifications.

But to reduce dust generation to a minimum, Radler brought out the big guns: "In addition to water cannons, we also used a powerful dust-laying system", explains Radler who has been responsible at Felbermayr for some spectacular demolitions over the last 25 years. The system works much like a snow cannon, and with a working radius of 340 degrees, it has a range of 70 metres. In order to ensure safety on the construction site, more then 400 linear metres of construction fencing was erected in addition to other measures. The demolition work is to be completed by September. ■

Any residual construction materials arising have already been sorted on-site in accordance with their recyclability.

A dust-laying system was used to reduce dust emissions to a minimum.

PHOTOS: MARKUS LACKNER



Danieli has been awarded the design, manufacture and on-site installation of the most important technological equipment for a remarkable aluminum strip and plate production project for AMAG in Ranshofen, Austria. Danieli successfully planned the manufacturing and transportation of these equipment from Italy to the site. Starting from Rotterdam, Felbermayr was appointed by Danieli for carrying the transportation of eight heavy and oversize equipment.

Moving "crab-like" over the bridge

From Rotterdam, Felbermayr organised eight heavy load shipments for a new aluminium factory opened by the upper Austrian aluminium manufacturer AMAG in Ranshofen. Our subsidiary Haeger & Schmidt International, arranged for transportation of the components by ship from Rotterdam to the Felbermayr heavy load port.

The route of the ship from the Dutch port city of Rotterdam to Linz crossed the Rhine-Main-Danube Canal and went on to the Felbermayr heavy load port in Linz. A number of traffic control measures were required for the subsequent shipment by road. It was therefore essential to be able to unload the shipments of the 200-tonne components in Linz in good time. However, this only proved possible as a result of the proactive measures taken by the employees involved, among other things. The word went round, "The ship has to wait for water," when the ship was stuck in Regensburg two days before the planned shipment by road. With some good will and thanks to the water god Neptune, all three ships could be unloaded "just in time."

Clearing the bridge

In the middle of December 2013, the first shipment was made with two mill housings, each of which was eight metres long by five metres wide. "Because they weighed around 200 tons, each of the components was transported in convoy on 20-axle low-loaders", explains Jürgen Steinbrecher from the Welser transport division. Just a few kilometres from the port exit, the transport team encountered the first hurdle. For structural reasons, the 100 meter long bridge had to be crossed in a so-called "crab walk". "This meant that the low-loader had to be pulled diagonally (more sideways like a crab) across the roadway using two tractor units", says Steinbrech-

PHOTOS: ALEXANDER HUBER, WERNER KUZEL, PETER NIEDERMAIR-AUER

The Felbermayr subsidiary, Wimmer Maschinentransporte based in Feldgeding jointly completed the order to assemble the new plant together with their colleagues at the Felbermayr Heavy Equipment division in Hilden.

er, explaining the method used to improve weight distribution. Fortunately, no such special measures were required to cross a further sixteen bridges. After a journey of approximately 90 kilometres, however, this was followed by the Ort im Innkreis motorway exit, and with it a bridge over the A8, and on account of the total shipment weight of 305 tons, it could not be negotiated. "The proposed solution was to use the bridge-free access ramp as the exit", says Steinbrecher. To do this, the section of the motorway had to be blocked off for a short period and the centre guard rail for changing lanes had to be removed. The motorway was reopened after around three hours.

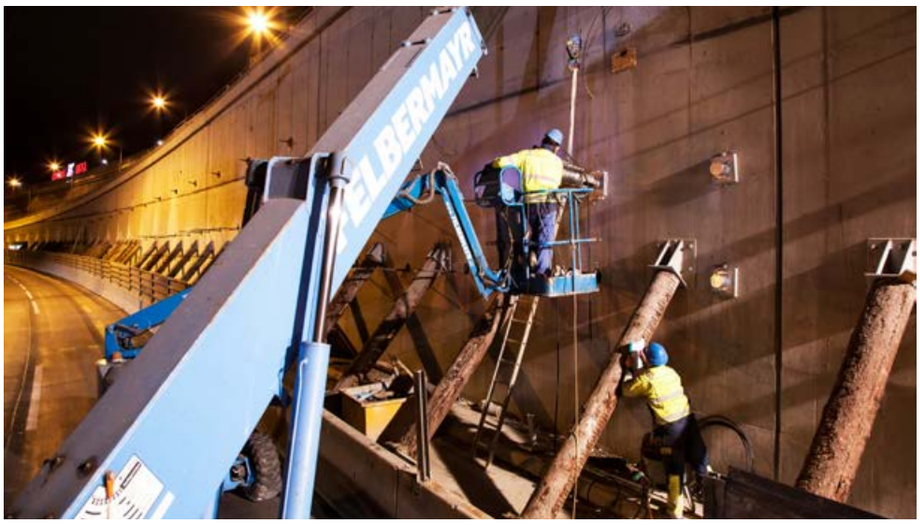
A further convoy consisting of two shipments followed in the middle of January, and it was also carried out according to plan. The heavy duty components will be used for a new hot-rolling mill. The Italian mechanical engineering firm, Danieli, placed the order for the project with Felbermayr Italy. ■

The two mill housings were transported to the Felbermayr heavy load port by ship and were then transferred to 20-axle low-loader vehicles.

In order to keep the crawler-type drill as mobile as possible, and in order to reach the required height, a semi-low-loader was used in combination with a loading crane.

Felbermayr Specialised Civil Engineering Department deployed for urban project

The employees of the Felbermayr Specialised Civil Engineering Department worked to repair and secure the four portal retaining walls of the Laaerberg tunnel in Vienna for approximately two months. During the project, they, in co-operation with the ARGE partner, Porr Grundbau, installed around 10,000 linear metres of anchors in record time. At the beginning of March, the construction site on the A23 was shut down.



A hydraulic press was used to pre-tension the strands. The steel elongation was documented precisely to the hundredth millimetre.

While the work of the specially trained employees of the Felbermayr Specialised Civil Engineering Department generally involves rock faces and embankments as well as difficult excavation situations, the purpose of the project in Vienna was to secure the reinforced concrete retaining walls on the A23. Over 100,000 drivers use the busy south-east bypass every day. This meant a considerable amount of extra logistical and organisational effort. "In order to prevent major traffic disruption, heavy duty equipment could only be used at night between 9 PM and 5 AM and up to 9 AM at the latest at weekends. During the day, all the lanes had to be kept clear for traffic", explains construction manager Stefan Sturm. In order to comply with the tight schedule, cooperation between the employees from the Specialised Civil Engineering Department subsidiaries in Salzburg, Stams and Lienz, as well as the Transport and Lifting Technology divisions had to be harmonised with precision.

The retention work

The work primarily consisted in installing a total of around 600 anchors to retain the four 400-m long portal retaining walls of the Laaerberg tunnel located directly beneath the Favoriten roundabout. In order to drive the work forward quickly, up to five drills were in use at the same time. "To reach these specified anchor points in the walls, which were a maximum of twelve metres high, the drilling platforms were lifted using a loading crane", explains Sturm. To lift the workers, up to ten articulated telescopic and scissor platforms from the Felbermayr subsidiary in Lanzendorf were used. To install the anchors, holes ranging in depth from 15, 16 to 18 metres were drilled. These depths were required in order to penetrate the reinforced concrete retaining walls, which were up to one metre in thickness, and the drainage core behind them, and to guarantee optimum force transmission to the load-bearing substrate. In order to ensure that the specified clearance profile for the lane to be kept clear for traffic was not affected by the long rod anchors, the rod anchors were lugged. Before the anchors were inserted, the drill holes, some of which were cased, were filled with 100 kg of cement slurry in order to ensure that the anchors could be installed cleanly. Depending on the technical requirements, rod and permanent strand anchors with an operating life of 100 years were used as anchors. Following primary grouting and final grouting, and attachment of the anchor head, the anchors, which consisted of three strands or individual rods, were pre-tensioned using a hydraulic press. A mini crawler crane from Felbermayr Lifting Technology was used to lift the occasionally heavy presses into place. To achieve a pre-tension force of around 50 tons, it was necessary to work to a precision of hundredths of millimetres. "This ensures the necessary force transmission capacity of the anchor in the substrate while at the same time safeguarding the roughly 40-year old retaining walls, against excessive pressure", explains Sturm. At the beginning of March, the work was successfully completed before the specified deadline. ■

A mini crawler crane facilitates setup of the hydraulic press.

PHOTOS: MARKUS LACKNER

Biggest urban cable car network ever installed

The biggest urban cable car network in the world is currently being installed between the Bolivian cities of La Paz and El Alto. Felbermayr Lifting Technology is supplying the cranes and work platforms for this project on behalf of the Vorarlberg cable car manufacturer Doppelmayr.

Together with his Tyrolean colleagues Andreas Prosch and Günther Wanner, Elmar Gsaller is managing the construction site in Bolivia.

The native crane companies described the project to erect the total of 67 supports for the three cable car connections as impossible. But for the employees of the Tyrolean Felbermayr subsidiary in Wörgl, the challenges seemed manageable from the start. "We have a lot of experience in handling mobile cranes at high altitude and in inaccessible terrain", says Elmar Gsaller who has been working on extreme construction sites such as the Hintertux and Stubai glaciers in the Tirol for around 20 years, and who is involved in the project on-site as a crane driver. "But the successful start of the project was due in no small part to the spirit of cooperation with Doppelmayr", comments Johann Lettenbichler, the responsible site manager working for Felbermayr: "The period from the initial meeting to the day on which the contract was ready for signing took just a few days." When you remember that in principle, no foreign-registered cranes may be used in Bolivia, and that customs clearance can take weeks, that is quite remarkable.

Altitude sickness

Owing to positive experience with Liebherr cranes at high altitude, the decision for Bolivia went in favour of the Ehingen crane manufacturers. For travel to the construction site in Bolivia, 160, 130, and 90-tonne machines were shipped to Bremerhafen along with articulate telescopic and scissor platforms as well as telescopic forklift trucks, and were then driven on their adventurous way from the Chilean port of Iquique to the construction site in La Paz. But it was not only the 1000 kilometre journey ascending to 5000 metres above sea level that was difficult, the work on site also presented challenges: "The potholes are up to half a metre in depth, and nor should the bumps be underestimated", says Gsaller. Furthermore, gradients of around 18 percent are not uncommon. "For automatic gearboxes, this is hard work, and every now and again we had to let them cool down."

But it is not only the road conditions that present a challenge; people and technology alike struggle to cope with the low air pressure. This means that not only is the operation of diesel engines problematical at this altitude, the workers also find it difficult to adapt to the unwonted conditions at 4000 metres above sea level. For example some of the fitters complained of headaches and were brought to hospital where they were given oxygen for several days. And others, for their part, flew straight home because they were unable to cope with the altitude sickness. "The human body is slow to adapt to the low air pressure", says Gsaller, describing his experiences. For him and his two colleagues, however, that was never a serious problem at any point. "We are Tyrolean", he says jokingly with an unmistakable dialect.

Completion by the end of 2014

The work to erect the first cable car connection started in the autumn of 2013. This first connection was opened by Bolivia's president, Evo Morales in May. It connects the cities of La Paz and El Alto and is therefore contributing to major decongestion of the over-crowded road network. The two other lines are to be completed by the end of 2014. ■

Major challenges require special solutions.

PHOTOS: ELMAR GSALLER

RETIREMENTS
Well-earned retirements

Many thanks and well-deserved appreciation are extended to all those who have recently retired. They have contributed to the growth of the firm, some for decades, and thus have helped shape the company's history. **Hermann Bauer** – Deponiebau/Wasserbau Hagn Umwelttechnik, **Walter Flatz** – BauTrans Lauterach, **Heinrich FRITZ** – BauTrans Lauterach, **Norbert Füller** – Wasserbau Reinhold Meister Wasserbau, **Gottfried Ganglmayr** – Tiefbau Wels, **Luka Grigc** – Hochbau Wels, **Franz Haselmayr** – Kran Linz, **Hans-Peter Heftberger** – Mischanlage Haag/Hausruck, **Ante Kajic** – Schwertransport Wels, **Anton KARL** – Werkstätte Reinhold Meister Wasserbau, **Herbert Klampferer** – FST Salzburg, **Wolfgang Lederhass** – Werkstätte Graz, **Safet Mehmedovic** – Hochbau Wels, **Herbert Moriz** – Deponiebau HAGN Umwelttechnik, **Manfred Reindl** – Kran Linz, **Gottfried Strolz** – Tiefbau Wels, **Josef Thurner** – Tiefbau Salzburg, **Viktor Wildemann** – Deponiebau HAGN Umwelttechnik, **Josef Wilflingseder** – Schwertransport Wels, **Ulrich Wittwer** – BauTrans Lauterach, **Josef Zraunig** – Kran Klagenfurt

Friedrich Rametsteiner

PROMOTION
CHANGE IN MANAGING DIRECTOR IN CONSTRUCTION

Since December 2013, Friedrich Rametsteiner has been working as the Commercial Director of Felbermayr Construction. Mr Rametsteiner has decades of experience as an executive in the construction business, and has also acquired comprehensive expertise in the commercial processing of international construction projects. Mr Rametsteiner succeeds Johann Gangl, who after more than ten years of successful work, is leaving Felbermayr of his own accord.

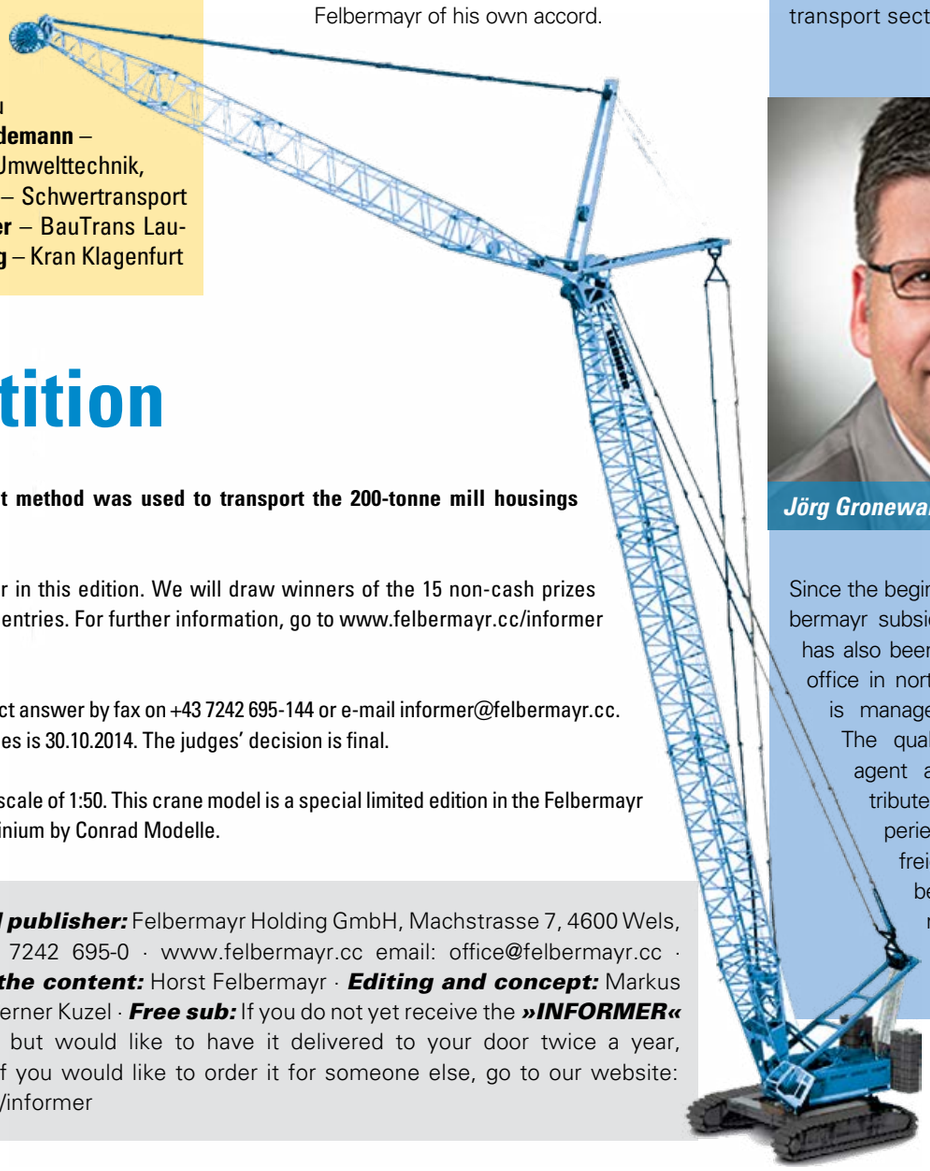
Per Nyström

NEWCOMERS
HAEGER & SCHMIDT

In March, business graduate Per Nyström took on the role of Commercial Director for the Felbermayr subsidiaries Haeger & Schmidt International and H&S Containerline. This means that Nyström is responsible for financial issues relating to container shipping and inland shipping as well as warehouse logistics. In addition, the companies, which are represented in four countries in Europe, also operate in the short sea transport sector.

Jörg Gronewald

Since the beginning of the year, the Felbermayr subsidiary, H&S Containerline has also been represented by a sales office in northern Germany. The site is managed by Jörg Gronewald. The qualified freight forwarding agent and specialist can contribute around 30 years of experience in the field of sea freight. Mr Gronewald will be primarily responsible for marketing hinterland container traffic in northern Germany.



Competition

PRIZE QUESTION: What method was used to transport the 200-tonne mill housings across a bridge?

You can find the answer in this edition. We will draw winners of the 15 non-cash prizes from among the correct entries. For further information, go to www.felbermayr.cc/informer – Click to enter!

Please send us the correct answer by fax on +43 7242 695-144 or e-mail informer@felbermayr.cc. The closing date for entries is 30.10.2014. The judges' decision is final.

1. PRIZE: An LR 1280 to a scale of 1:50. This crane model is a special limited edition in the Felbermayr colours, die-cast in aluminium by Conrad Modelle.

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