

# INFORMER

THE MAGAZINE OF THE FELBERMAYR GROUP 1/2011



## **TEAMWORK**

MULTI-MODAL TRANSFORMER TRANSPORT

## **SUCTION INSTEAD OF SHOVELS**

FLAT ROOF RENOVATION WITH SUCTION EXCAVATOR

## **BIG BOYS**

GAS TANKS TRANSPORTED TO OCEAN-GOING VESSEL

## **BLUE GIANT**

COMPOSITE STRUCTURE LIFTED INTO PLACE WITH CRAWLER CRANE

# **STEP BY STEP: HIGH-SPEED TRACK FOR RAILWAY**





**Dear readers,**

The signs of an upturn are there; the truck fleet is working at full capacity, employee numbers have remained steady and even increased in some areas – so there's enough work to go round again. But the past two years have left their mark, and it hasn't been easy to make progress. Why? Prices are rock-bottom and showing few signs of recovery. Energy costs, on the other hand, are increasing and another tough winter has delayed many projects and construction jobs. However, week by week we're see-

ing a following wind build and the economic engine getting up and running. And we're ready for it too. We always had confidence, and took advantage of the past two years, identifying where savings could be made, improving processes and procedures, and making every effort to ring-fence the Felbermayr company from the omnipresent and undesirable economic developments. Together with our customers and employees, we've succeeded in putting the group of companies back on the road to recovery. The follow-

ing pages contain just a few examples, such as an item on Krefeld port, situated on the Rhine, as well as other interesting items. Combined with the heavy load port in Linz, it now represents another key building block in trimodal transportation. New sites in Austria and the rest of Europe also bring us much closer to customers in the transport and lifting technology sectors, as well as in construction. But let's not forget – it's still only half-time. With this in mind, we wish your company and ours continued success.

Yours sincerely,

Horst Felbermayr

Horst Felbermayr, DI

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## KREFELD TRIMODAL INTERFACE FOR RAIL, ROAD AND WATER

As the operator of the heavy and bulk cargo port in the Rhine city of Krefeld, Felbermayr is expanding its potential in Germany. The 15,000 square metres of storage space and 5,000 square metres of handling space guarantee customers maximum flexibility. With a permanent cargo-handling capacity of 500 tonnes and the ability to receive and send by rail, road and water, the harbour is ideally equipped to meet the requirements of trimodal transport.



## STRUCTURAL ENGINEERING Living by the Mühlbach

A residential building dating from 1920, situated by the Mühlbach in the centre of Wels, is currently being brought up to the latest standards in building physiology and technology. A total of 1,500 square metres of living space is being renovated sensitively in order to preserve the turn-of-the-century style while creating a modern ambience in keeping with the times. Only the load-bearing walls, curving staircases and fine vaulting will be retained. A total of 15 apartments with loggias and south-facing balconies will be created over 4 storeys, plus 9 garages and 8 parking spaces. Completion is planned for the end of 2011.



## MOBILE ON SITE Felbermayr expands its range of mobile construction cranes

Felbermayr is enlarging its rental fleet with three new MK88s and one MK110. This is the company's response to the regional requirements of our customers. This will bring to nine the equipment in the fleet and cover performance categories from the MK 63 to the MK 110. The new equipment was supplied to branches by Liebherr and the crews instructed and trained over a period of just six weeks. The MK series of cranes combines the manoeuvrability of a traditional mobile crane with the functional advantages of a rotating tower crane. MK cranes have the latest undercarriage technology for maximum mobility, safety and comfort. The MKs are designed for fast, programme-based one-man installation at the press of a button and are ideal for use in the tightest of spaces. Multiple uses per day are no problem for these »taxi cranes«.





## BLACK GOLD TRANSPORT OF AN OIL-DRILLING RIG

Two mobile cranes and six tractor units are currently in use east of Vienna looking for new oil and gas deposits. Circumstances require the drilling rig to be moved to the region around Gänserndorf. Because the drilling modules can be up to three metres high, additional mega-trailers and semi-low-loaders are also in use. Up to 60 transporters will be needed for one rig because the individual components can weigh as much as 40 tonnes. The project started in August 2010 and is scheduled to be completed in July this year. It will make a significant contribution to safeguarding domestic oil and natural gas production for OMV.



## NEW SLANT Felbermayr builds Salzach pedestrian bridge

Felbermayr equipment was contracted for about a month for the transport and erection of a cable-stayed bridge over the River Salzach. Felbermayr was able to complete the work in the Salzburg suburb by the middle of March. The two Salzburg suburbs of Aigen and Josefiaw were then joined by the 96-metre long Salzach bridge. A total of seven loads up to 33 metres long and with 32 tonne sections were needed. These parts of the bridge came from Furth im Wald (Germany), 300 kilometres away. The sections had to be on site before 6 am in order to prevent traffic hold-ups. An LTM 1500 from Liebherr and an AC 120 from Terex Demag started the lifting operation. The AC 120 was used as a compensator crane. The actual 32-tonne load was borne by the LTM 1500. That is how the raising of the first pylon for anchoring the wire cables on the Josefiaw side was achieved. Sections one to four formed the footbridge itself. An island was created in the bed of the Salzach using rip-rap stones to allow the sections to be deployed. The LTM 1500, AC 120 and an AC 80 were used to raise the sections, 5.9 metres wide, and up to 25 metres long. The five-tonne, 90-metre steel cable for tensioning the bridge was laid out using a crane. Once the pylon had gone up on the Aigen side, the precision work was carried out using a mini crawler crane and a 36 metre high telescopic platform. The cable-stayed bridge was finally completed in June. Some 10,000 locals will profit from the pedestrian and cyclist bridge – their trips to work or school will now be considerably shorter.

## INCREASED CAPACITY Lambach railway station to be enlarged

During the extension of the Westbahn track, Lambach station in Upper Austria will be enlarged and modified by employees of the Felbermayr civil engineering section to accommodate the future increased requirement for shunting for companies located in the area. By the time the work is completed at the end of 2011, one new kilometre of track (incl. base and drainage), three sets of points and some 30 kilometres of cable will have been installed. A new bridge and retaining walls will have been constructed to cross the public road. These will be supported by 27 drilled piles 90 cm in diameter and up to 11.5 m in length. Some 28 kilometres of the existing cable will have to be replaced during the rebuilding. As the construction work will be carried out close to or on the track near the station, it will have to proceed in stages and will require very labour-intensive scheduling. To guarantee the work near the track is safe, sections will be closed at night and at weekends so that ÖBB train services are not affected.



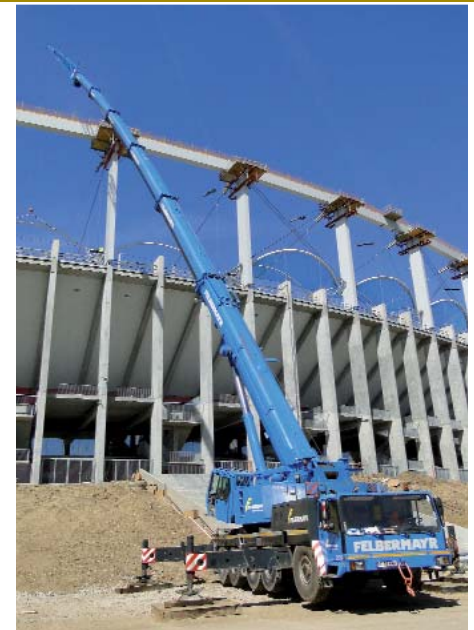


## FUTURE-ORIENTATED

## Electric cars used at Wels expoEnergy



The stars among the other mainly powerful vehicles are two electric cars which, together with the combustion engines in the Felbermayr waste management fleet, will be responsible for the cleaning and waste removal services at the Wels exhibition site. With the purchase of these two electric production cars from Mitsubishi, Felbermayr is demonstrating its openness to future developments. The i-MiEV vehicles will be used mainly for urban business trips. On the spot at the Wels exhibition grounds Felbermayr employee Barbara Dickinger will be responsible for business trips in an electric car for the Felbermayr waste management section. She is very pleased with the vehicle. Only the range is a little limited – 150 kilometres according to the company. However, Ms Dickinger says that this reduces global warming considerably, although that is a secondary consideration at the exhibition. The main advantages there are the low noise emissions. And given the numbers of visitors expected at the exhibition, the vehicle will certainly have its admirers from the point of view of future mobility.



### FOOTBALL TEMPLE STADIUM CONSTRUCTION IN BUCHAREST

Ten mobile cranes plus platforms and lift-trucks have been in service since April building the canopy over the Romanian national stadium in Bucharest. The cranes are units capable of handling maximum loads of 55 to 250 tonnes. Because the use of working cages is forbidden in Romania, two lifting platforms working at more than 60 metres have been employed. These will help with the installation of the transparent roof, among other things. When it is finished in August, the stadium will be able to accommodate 55,000 sports fans. Some 4,000 of these will be able to follow the leather ball from VIP seats. The football temple is named after discus-thrower Lia Manoliu who brought the discus gold medal back to Romania from the 1968 Olympic Games in Mexico.

## ENFORCED BREAK

## Low water level delays transport

Nine nacelles for wind turbines have been transported from Rotterdam via the Rhine-Main-Danube canal and the Danube to the heavy load port in Linz. The load included 72-tonne fibre glass and carbon components. The heavy weight stemmed from the integration of generators and transformers. Low water in Eastern Bavaria meant the load had to be distributed over two vessels in Regensburg. This reduced the draught and allowed the vessels to proceed. Despite this enforced break, the vessels needed just 10 days to reach the heavy load port in Linz, where gantry cranes took over the load. The nacelles remained in the open depot at the Felbermayr heavy load port before continuing on to Markgrafneusiedl in Burgenland.







## POWER PACK SUPERHEATER BUNDLES REPLACED

Two so-called superheater bundles were replaced in mid-March at the AVE heat recovery facility in Wels. One of the most powerful cranes in Austria was used to exchange these 31-tonne components. It was an LTM 1500 with a 75-metre long boom including compensator. The crane was also equipped with 165 tonnes of ballast. An LTM 1045 (45-tonne crane) was used to erect a scaffolding tower so the components could be stored temporarily after lifting. The two new superheater bundles were also suspended there, waiting to be lifted into their future location. These were taken from the low-loader and suspended in the scaffolding tower using a third crane (LTM 1090). One day was needed for the replacement. Felbermayr was also contracted for the transport of the two superheater bundles to Wels. They started from the international industrial service company FMT in Graz, which was also Felbermayr's client. The power company Energie AG reports that some 60,000 households can be supplied from the heat recovery facility in Wels.

## STRUCTURAL ENGINEERING Framework agreement for service station shops



By the end of 2011, the structural engineering section will have converted around 30 service station shops owned by the Doppler Group into new »SPAR express« outlets. The work to be carried out will range from completely new designs, starting with clearing the site, to the external design and construction of washrooms. However some service stations will only require modifications to their internal layout. The new SPAR express service station shop concept will also allow Doppler customers to buy from the service station at supermarket prices.



## A BIG'UN Demolition excavator for site clearance

With a boom that can be extended up to 31 metres, the new demolition excavator weighs in at more than 64 tonnes. Fitted with an electrical working area limiting system, rear and jib cameras, and a safety windscreen, the high-tech machine leaves nothing to be desired when it comes to safety, either. A breaking tool/hammer and sorting grapples come as standard on this special machine. It also stars when it comes to digging ditches, thanks to an adjustable jib and a three-cubic metre bucket.



## BAUTRANS FLEET PART ENLARGED

Six new tractors were recently delivered to the Felbermayr subsidiary BauTrans. The new machines represent a replacement investment for retired equipment. Five of the machines are being sent out from BauTrans Hungary, based in Budapest. One of them is assigned to BauTrans in Lauterach (Austria). The Scania tractors, with up to 560 HP, will be used for transporting exceptionally wide or heavy loads across borders.

PHOTOS: MARKUS LACKNER, MARIO NIMMERFALL, STEPHANIE EBENBERGER, FLANZENDORF





## SPECIALISED CIVIL ENGINEERING SHOTCRETE WALL FOR FESTIVAL HALL

The work involved in securing a 1,500 m<sup>2</sup> rock face lasted from January to March. It was needed for the construction of the new Tirol Festival Hall in Erl. Some 2,500 lineal metres of rock anchor, 15 tonnes of reinforcement and 800 tonnes of concrete were needed to shore up the rock face which was up to 20 metres high and 80 metres long. Rock slabs with a total area of 150 m<sup>2</sup> came loose during routine blasting because of a geological fault. The drill truck and 32-metre carriage were used because the digger was unable to reach the 10-metre away location. The truck was able to drill the holes for the anchors and make the site safe.



## MANUAL WORK Electric motor installed using strand jack

Installing an electric motor can be a heavy job, especially when the rotor and stator weigh in at 69 tonnes. That's the way it was for the Felbermayr insertion team from Linz, but they showed it was a piece of cake in the Polish capital of Warsaw at the end of February. The 4.8-metre diameter stator was lowered to the precise millimetre using lifting gear and strand jacks into a 3.5-metre deep opening and attached to anchors. The 32-tonne rotor was 3.6 metres in diameter and 3.7 metres high. After it had been brought into exact position above the stator using delay tracks, it was lowered gradually with the strand jacks. Thanks to advance calculations and manual assistance, it was lowered into the stator in a just a few hours. When you consider that there is only two millimetres clearance between rotor and stator, the result was really in the »luxury class manual labour« category. The lifting gear used has a maximum lifting capacity of 125 tonnes per piston. When all four pistons are used, that means a 500-tonne stroke.



*On behalf of the partner company BIS Gerätetechnik, Felbermayr transported a mobile container system at 600m<sup>2</sup> of office space in mid June. The assignment was carried out to the highest satisfaction of the end customer voestalpine.*

## AWESOME Container village moved by self-drives

At 45 metres long and 7 or 10 metres high and wide, the BG80 from voestalpine Stahl can certainly be described as »impressive«. Thanks to thorough preparation by the client, BIS Gerätetechnik, transport was a snap. Four mobile cranes lifted 32 containers of different designs and placed them on the 24-axle self-drive. The mobile offices were then driven to the new location 800 metres or so away and placed on their foundations.



## Railway embankment for high-speed track

In August last year, the Felbermayr civil engineering section began work on straightening the four-kilometre section between Lambach and Breitenschützing. By 2013, trains here should be capable of up to 230 km/h and thus make a considerable contributions to increased mobility of the Westbahn railway.







*New addition to the fleet: The automatic levelling controller kept the 22-tonne bulldozer used to construct the railway embankment on a flat footing.*

Even today, the future high-speed stretch of the ÖBB is steaming ahead. Up to seven dump trucks are making their way up and down the three-kilometre construction site. They are filled continuously by two bulldozers so there's no time for the excavator operators to get bored. Site manager Thomas Wallenstorfer from Felbermayr construction operations is also hard at it: »The main earthwork activity consists of creating a 2.5-kilometre long railway embankment including installing vibration-compacted columns to reinforce the sub-soil and the creation of a drainage system including retention basins, plus a train station,« he explains. The figures behind this bland project summary are truly impressive. For example, the total amount of rubble processed for construction of the embankment comes to

**Five railway and two road bridges were constructed in the course of the project. This required laying an 80-metre section of road.**



some 16,000 dumper loads. This is the equivalent of 160 kilometres of vehicles end to end. Equally remarkable is the installation of more than 7,000 vibration-compacted columns and the laying of around 2,500 lineal metres of drainage and sewage pipes.

### Embankment construction with obstacles

Because the existing soil was not strong enough to support the embankment, the soil had first to be replaced. »That involved removing 25,000 m<sup>3</sup> of material,« says Wallenstorfer. Vibration-compacted columns were inserted where the stable soil couldn't be made deep enough: »The equipment forces a steel rod in to a depth of up to eight metres, just like a ram. After that, a funnel at the top feeds in washed gravel to a particular specification and compresses it using compressed air,« says Wallenstorfer, explaining the method that had to be used every three metres along the embankment and every metre in the station area. In this way, a total of 7,100 columns were inserted. 35,000 m<sup>2</sup> of geocomposites were laid on the prepared base to act as a granular sub-base. This is the equivalent size of five football fields. After the addition of around 30 centimetres of drainage gravel and the laying of 2,000 running metres of drains, plus another geotextile layer, the »foundation« was ready for the actual embankment.

### Technology in support of earth movement

When it is finished, the embankment will be 20 metres wide and 4.5 metres high. Accounting for why the embankment is currently seven metres high, Wallenstro-

fer says, »For maximum compaction, a 2.5 metre high top layer of fill was also added.« Once settlement is complete, this layer will be removed. The geologists will decide on the timing. The material was compacted using a 12-tonne roller equipped with a surface compaction checker. This keeps the operator continuously informed of the degree of compaction of the embankment area being rolled. »Even the bulldozers are software-controlled and so help the operator by creating the correct level for the railway embankment,« Wallenstorfer continues. The result is that time-consuming levelling using a surveyor's staff and laser are a thing of the past in the case of major earthmoving projects. The earthworks will be followed by installation of the railway equipment. As Wallenstorfer



*The material needed to build the embankment came from close to the site. After project completion, the 26,000 m<sup>2</sup> area will be carefully renatured.*

explains: »During that phase, we'll be installing about 100 pylon foundations and numerous cable troughs for the railway electrics.« The change-over from the existing to the new track is scheduled for summer 2012. After that, the old embankment will be taken down and the construction site recultivated. Sections of the old embankment will be included in the creation of ponds and ecological buffer areas. ■



## Across the roofs of Linz

Suction instead of shovels is the motto of the Felbermayr waste management section. This refers to the suction excavator introduced successfully several years ago. The advantages of this easily used device became clear during some flat roof renovation in Linz.

The high-rises south of Linz are 52 metres high. Their flat roofs have also done their duty for decades. But it was now time for the flat roof to be recovered to prevent damage to the building. However, the first step was to remove the gravel holding down the sheeting. Removal in the standard way, using wheelbarrows and chutes, was not possible owing to the different levels of the roof and the 13-storey height. »By using the suction excavator, we were able to provide an economically-viable solution,« comments area director Reinhold Reisenbichler from Felbermayr Waste Management.

### Time- and money-saving solution

A lot of skill was required to set up the 100-metre suction hose. One worker thought it would not be easy to lay the pipe from the suction excavator to a height of 52 metres. However, this was achieved in just a few hours thanks to the practical experience of the Felbermayr employees and some dedicated scaffolding. »Two days were needed to suction-clear the 800 m2 area,« reports Reisenbichler.



*The suction excavator also provides sterling service when it comes to flat roof renovation: costs are saved thanks to its flexibility when removing gravel fill.*

This included the preparation and removal by truck of 40 tonnes of material. Felbermayr will be called on again once the roof

renovation is complete. This won't be for suction but to transport the new gravel using a crane – also a time- and money-saving solution. It also minimises the potential risks for the workers on the site. ■







*The combination of construction and lifting equipment made possible the renaturation of Traun near Fischlham in Upper Austria.*

# Traunau sensitively renatured

Construction machinery weighing many tonnes was used until March in the Traun meadows near Fischlham in Upper Austria. Its task was careful renaturation and a potential increase in drain-off in a flood event. This federal/state initiative is aimed at protecting low-lying communities from flooding and preventing the woodlands from drying out.

**T**he Traun, originally a branching system of waterways, has become a narrow river bed as a result of well-intentioned regulations over past decades. The result has been washed-out bank protection and flooding, frequently threatening communities. Now, efforts are being made in numerous places to again liberate the Traun from its deep river bed and thereby reduce the risk of flooding. One example is the 1.2-kilometre stretch of the Traun at Fischlham in Upper Austria. »We're widening the Traun and recreating the natural drainage system,« explains Hans Wolfsteiner from Felbermayr hydraulic engineering. Almost 60,000 m<sup>3</sup> of material will be excavated to widen the river bed. Because of restrictions by the water authorities, it is not

possible to move the material to the nearby banks, explains Wolfsteiner but there is a solution: »To transport the material to the opposite side, we created an island in the middle of the river. That's where we located a crawler crane. Fitted with a double-shell type grab, it transports the material to the opposite bank. From there, it's taken away by truck.« The crane uses a jib length of up to 45 metres to span the 70 metre wide river bed. The crane will take about three months to transfer the material. After that the artificial island will be removed.

## Granite gently guides river

»To shore up the flat banks, we'll be dumping some 20,000 tonnes of ar-

mourstone in so-called groynes,« explains Wolfsteiner. This should subtly guide the flow of the Traun. The granite will come from the Felbermayr gravel pits four kilometres away in order to keep the logistical costs under control. »Once the work is finished, we'll restore the access road needed to transport the crane,« says Wolfsteiner, looking to the future. A huge effort, then, for 1,200 metres of river, but one which is justified if we consider the long-term improvement in living conditions for the animals in the woodlands and the minimal maintenance of the Traun banks that will be required in the future. There will obviously be a significant benefit in protecting nearby communities from flooding as well. ■









PHOTO: FELBERMAYR





Self-propelled vehicles also make difficult roll-on/roll off activities possible when unloading ships.

## Big boys

**Towards the end of last year, Felbermayr moved two gas tanks for the transport of LPG from the Romanian Black Sea port of Constanza along the Danube to Turnu Severin in Southwest Romania. The Romanian specialist shipyard of Severnav was the unloading point for the 820 tonnes of megacontainers.**

**T**he sky-blue self-propelled modular trailers (SPMT) have already carried lots of heavy weights on their backs. However, they demonstrated unprecedented strength last December when transporting the two liquid-gas tanks. »At 540 tonnes, the larger of the tanks was our major headache,« says Daniel Costea from the Felbermayr branch in Bucharest contracted for the job. It was a very impressive sight at 40 metres long and 18 metres wide. And if that wasn't enough, it was 12.2 metres high! To get an idea of the size, just think of the 10-metre tower in your local swimming pool. Yet the height played a minor role in the transport of the two tanks. The core issues were their transport on the Danube and unloading at the dock.

### Locks as obstacles

The steel colossuses travelled on a sea-going vessel from Shanghai to the Black Sea port of Constanza, according to Costea, taking some three weeks via the Suez Canal. Once they were there, a float-

ing crane was used to transfer the larger, double tank to a flat-deck pontoon. The smaller of the two was stored temporarily at the port. Some 650 kilometres of the Danube now separated the tanks from the shipyard in Turnu Severin. »A transit time of about a week is normally enough,« explains Costea. However, flooding threw out the schedule for the Felbermayr crew. There were considerable delays passing through a dozen locks and, because of flooding, the last damn 30 kilometres from the destination denied the pontoon and its expensive freight a smooth passage. A very low bridge over the lock was causing delays. »We managed it in the end,« say Costea, »with just 1.2 metres clearance«. That may be generous for heavy transports on the roads, but a close call for shipping which can involve waiting a week and incurring additional costs.

### Unloading

»Road transport of the SPMTs took about three days from Wels to Turnu Severin,« says Costea of the 900+ HP self-pro-

pelled vehicles. Six trucks were needed for the modular transport vehicle, which weight around 60 tonnes. The six undercarriages and two drive units were assembled using the harbour crane at the destination. Unloading was planned to be »RORO«. »This stands for Roll-on/Roll-off,« explains Costea, »meaning unloading from the vessel via a ramp.« And that was another problem: there was no ramp. »We built a temporary ramp using gravel and reinforced concrete to solve the problem,« say Costea. After unloading, the tank was lowered into the dockyard. The second tank was transported in the same way. At »only« 29 metres long and 12 metres wide, it was not quite so spectacular. The grand final was a superlative highlight: Working together, two crawler cranes from Liebherr lifted the tanks into the hull of a gas tanker. The vessel's owner and builder was Hartmann-Reederei from the East Friesian town of Leer. Impressive though the lift was, the big boys soon disappeared for good into the hull of the 115 metre long and 17 metre wide »Gaschem Werra«. ■

PHOTO: FELBERMAYR



# Heavy transport for largest run-of-river power plant

In early April, a convoy from Felbermayr transported three heavy components for the Iffezheim power station on the Upper Rhine. The starting point was the Andritz Hydro GmbH plant in Weiz.

The teams worked together tremendously,« says a happy Günther Trauner, manager since 2007 of the heavy transport section in Wels. The convoy left on its 950-kilometre journey from the Andritz-Division für Generatorenbau in Weiz (Styria). From there, it followed the A2 southern motorway to Eisenstadt, then on via the A1 past Amstetten to the heavy load port in Linz.

## On the limit

»Thanks to the very cooperative authorities at Asfinag, approval was given for the traffic procedures needed,« says Trauner, whose team, together with transport escort service Trummer from Graz, carried out advance route studies and surveys. The result was a minutely detailed schedule. The dome, 7.76 metres long and 7.51 metres wide, was followed by the stator and rotor, the largest components to be transported. The first 25 kilometres to the motorway were a challenge: »The load was half a metre wider than the road, so all the roadside posts had to be removed,« explains Trauner. It was also necessary to



*The power station components were around eight metres wide. That called for numerous traffic routing measures.*

dismantle numerous roundabouts in the convoy's path, plus traffic lights and road signs. Some of the narrow bottlenecks in the towns were even more of a problem. The convoy's progress was decided by just a few centimetres. »We really were on the limit,« says Trauner, full of enthusiasm that the convoy was finally successful. A number of traffic routing measures also had to be scheduled for the motorway. For example, a construction site on the A2 between Peggau and Zöbern could not be cleared. This meant that the oncoming lanes had to be blocked temporarily for

10 kilometres to allow the heavy transports to pass, making the convoy a kind of wrong-way driver. Some 350 kilometres and two nights' driving later, the convoy reached the Felbermayr heavy load port in Linz. »When it came to the actual implementation, you really had to take your hat off to the drivers,« says Trauner about the perfect teamwork. »They did a great job all the way!«

## River trip

The three components were subsequently transferred to an inland waterway vessel and transported via the Danube and Rhine-Main-Danube canal to their destination in Iffezheim some 600 kilometres away. There, bearings, rotor and stator should guarantee the problem-free operation of the fifth generator and contribute to the production of a further 122 million kWh power per year. This will allow around 75,000 people to be provided with hydro-electric power. The five generators will produce a total of 870 million kWh per year and supply electricity to residents in the equivalent of a city the size of Bonn. ■

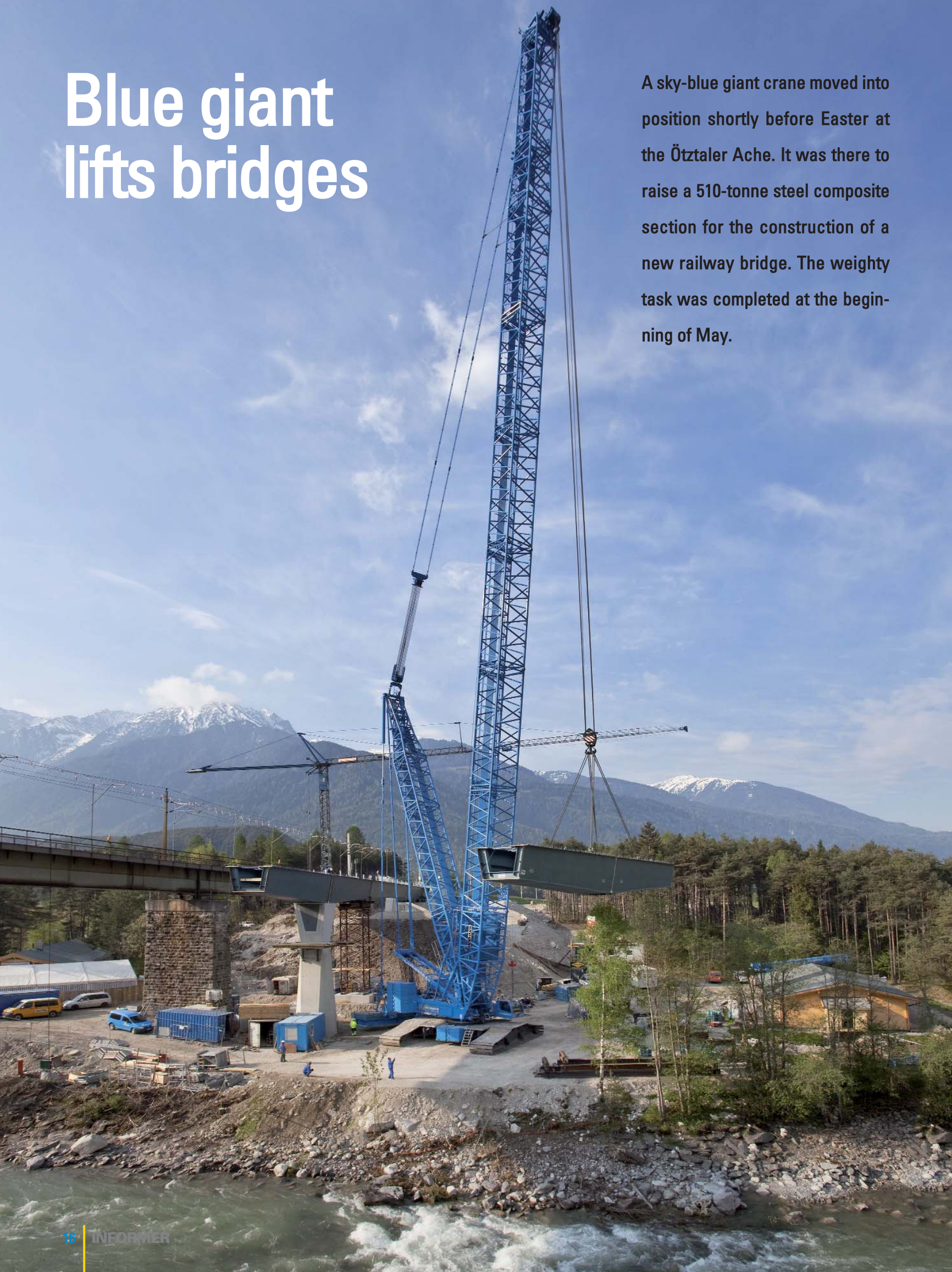
*At 100.5 tonnes, the stator was the heaviest component. Its weight was distributed over 12 axles.*





## Blue giant lifts bridges

A sky-blue giant crane moved into position shortly before Easter at the Ötztaler Ache. It was there to raise a 510-tonne steel composite section for the construction of a new railway bridge. The weighty task was completed at the beginning of May.







Six sections weighing up to 130 tonnes were lifted into place for the new Ache bridge in the Tirol. An LR 1600 crane with a 102-metre lattice jib was used for the job.

Currently, trains can only travel over the Ache at 40 km/h. The new bridge close to Roppen will in future permit speeds of 80 km/h. According to the ÖBB, that will mean more punctual trains and less railway noise. The new bridge is being constructed next to the existing bridge. With a length of 145 metres, the pre-assembled steel section weighed 510 tonnes. »Six sections in all had to be lifted for the bridge,« says Günther Wimmer from the project section in Wels.

## Crane logistics with obstacles

Even the approach to the site called for extensive preparations. A total of 42 heavy transporters were required to bring in the LR 1600 with its maximum lifting capacity of 600 tonnes. »The crane brings to 45 the number of individual components that have to be assembled on site,« explains Wimmer. And that's not counting 30 ballast stones weighing 565 tonnes. However, that

was not the problem. The first difficulty came from access to the site only being possible along an unsurfaced woodland lane. »The one-kilometre long lane had to be considerably upgraded for the transport, but up to 22 percent of the curves, trees and slopes were retained,« reports Wimmer, adding that curve simulations were carried out in advance »to make sure we didn't get stuck«. The six transporters with their up to 130 tonne bridge sections also had to use this road. In addition, the sections had to come 500 kilometres from where they were manufactured at St Paul in the Lavanttal. »The slope had to be climbed to remove the crane,« says Wimmer, so a 650 HP 4-wheel tractor was called on to help.

## Giant crane raises bridge section

Once it was assembled, the dimensions of the LR 1600 became clear. You just can't hide 628.5 tonnes of steel. It made the 250

and 120 tonners needed to assemble the crawler crane look almost tiny, even though they are among the heavy-weights on the domestic crane scene. »The largest load



The bridge elements were transported to the site »just in time«. They were manufactured by NCA Container- und Anlagenbau GmbH in St Paul, Lavanttal

was 88.8 metres long and weighed 45 tonnes,« says Wimmer. Nevertheless, 350 tonnes of suspended ballast, 150 tonnes of superstructure ballast and 65 tonnes of central ballast meant the crane and its 102-metre lattice jib was able to stand firmly by the Ötztaler Ache and lift the bridge section to an accuracy of several centimetres. With the help of a guide, the crane operator was able to lift all the other sections accurately into position. Between 12 and 34 metres long, the premade steel sections were welded together and connected to the bridge pylons. The lifting work was completed in early May. The new bridge should be finished and ready for rail traffic in August. ■



The LR1600 needed up to 565 tonnes of ballast for the lifting.



## Crane duet for conveyor system

This year, Linz AG will start up a new thermal power station using waste material. Lifting technology from Felbermayr was employed in the construction of a 460-metre conveyor system from the treatment plant to the power station.





Just about a year ago, cranes and platforms from Felbermayr appeared at the site for the first time for the construction of the conveyor. The gap closed at the beginning of April. The last part to be lifted weighed in at 50 tonnes, and was 35 metres long and five metres wide. The whole project was spectacular, but first some local history.

*The telescopic jib on the mobile crane reached up 84 metres to »fill the gap« in the overhead pipe conveyor. A truck platform with a 61-metre working height was used for assembly.*



PHOTOS: PETER BAUER

»The pipe bridge section had to be brought in for assembly at a height of 68 metres,« reports head of operations Gottfried Hrast from the Felbermayr subsidiary in Linz. A jib length of 40 metres made lifting extra difficult. That was why an LTM 1500 with 500 tonnes maximum lifting capacity was used as the main crane. This crane from Liebherr had back-up in the form of an LTM 1200 with 200 tonnes maximum lifting capacity. »The LTM 1500 was fitted with 165 tonnes of ballast and an 84-metre long jib,« says Hrast, explaining the main crane's configuration. Additional power for the LTM 1500 came from a so-called Y-anchor.

### Millimetre-accurate assembly

The back-up crane made do with 72 tonnes of ballast and a 72-metre telescopic jib. Only a few hours passed between fastening the load and reaching the assembly position to an accuracy of several millimetres. »That's where we brought a successful end to the last major part in the construction of the power station,« says a pleased Hrast referring to the gap closure.

### Efficient waste utilisation

There was also cause for celebration at Linz AG. The commissioning of this high-efficiency waste recovery facility means that some 200,000 tonnes of waste can be processed annually. It will allow approximately 37,000 households to be supplied with electricity and some 11,000 with environmentally-friendly district heating.



*The lifting LTM 1500 was fitted with a Y-anchor and 160 tonnes of ballast. Only 72 tonnes were needed for the back-up crane.*

## HIGH-EFFICIENCY WASTE MATERIAL RECOVERY PLANT

The plant is designed to recover approximately 150,000 tonnes of processed waste and some 50,000 tonnes of sewage sludge. The waste material can be delivered by truck or ship.

What kinds of waste are recycled?

- Prepared communal waste
- Household waste
- Bulk waste
- Trade and industrial waste
- Sewerage sludge
- Other non-hazardous special waste



*The fuel from the treatment plant is transported to the power station via a 460 metre long conveyor.*



## Teamwork for transformer transport

At the beginning of May the Felbermayr subsidiary company BauTrans completed the ten day transport of a transformer with the laying of the foundations. Previously the 265 tonne voltage transformer was transported from ABB works Bad Honnef near Bonn to the village of Fällanden not far from Zurich. In future it will help to ensure the power supply for the city of Zurich.



*In Möhlin (CH) the Möhlinbach was crossed using a special bridge crossing system, due to insufficient load bearing capacity of the bridge. Two truck trailers were required to transport this. However the system was able to be constructed in just two hours.*

This was a brilliantly, minutely planned co-operation« says Felbermayr manager Christoph Nüßler about the successful completion of the transport which was primarily co-ordinated by Felbermayr Switzerland as the contractor of ABB. The Felbermayr site Hilden (D) was operative in the assignment, for the transport to the RoRo system (from the English Roll on/Roll off) and the Felbermayr sector ITB was significantly involved in the preparation of the carrier and the Felbermayr subsidiary company BauTrans, for the final road transport. The transformer was taken on at the ABB work Bad Honnef. It was then transported to a RoRo system around two kilometres away on a twelve axle special low loader. »This enabled the heavy goods to be unloaded from the road vehicle to a pontoon«, says Nüßler. The transformer was then transported around 120 kilometres North West on the Rhine, to the Felbermayr heavy goods port in Krefeld. When it arrived there the heavy weight was transferred to an inland navigation vessel and transported to Basel on the Rhine and unloaded. For the further transport of the twelve metre long and 4.4 metre high and 3.67 metre wide trans-

former two traction machines and a pushing machine were used. The second traction machine was incidentally provided by a further Swiss transport company, as well as a third traction machine which was to serve as a reserve for wet road conditions. Regarding the section of the route carried out by BauTrans, Nüßler says: »On the 105 kilometre route between Basel and Zurich there are many hills and hairpin bends, which could lead to inadequate grip on the tyres in the case of rain«.



*The transformer was changed over in the Felbermayr heavy goods port in Krefeld.*

### Seventy metre long transport combination

The transformer was transported on a twenty axle carrier combination. The total length of the transport including the three machines was 77 metres and weighed a total of 475 tonnes. In order not to impede traffic the road transports were only carried out at night. The first stage led to Wettingen; whereby a bridge had to be crossed over the Möhlinbach halfway through the route. As the load bearing capacity of the bridge was not sufficient, a special bridge crossing system was used. »Thereby the weight was distributed onto the bridge head and therefore no strain was put on the self supporting part of the bridge«, explains Nüßler about the function. The second night the remaining thirty kilometres to the destination in the village of Fällanden with 8,000 inhabitants was covered. The assignment was completed with the laying of the foundations in the electricity works. Here the transformer will ensure the energy supply for Zurich.





*The Hanusch-Hof on Ludwig-Koeßler-Platz in the 3rd district of Vienna after renovation. Constructed in 1923, the property was named after the social-democrat politician Ferdinand Hanusch, a founder of modern labour law.*



# Rebirth of a monument

After installation of new insulation by Sareno, the Hanusch-Hof in Vienna again showed its better side.

Mayor Karl Seitz would have been very pleased. Built during his term of office in 1923, the Hanusch-Hof was like new again after its thorough refurbishment. In the early 1920s, it was regarded as a prime example of urban housing. Unlike the bedsits in tenement blocks, with toilets and water available in the corridors, the apartments in the Hanusch-Hof had toilets and washrooms in the apartments themselves, as well as a number of shared facilities. The architect was Robert Orley (1876 – 1945),



*Before: The Hanusch-Hof was showing its age. Some of the plasterwork had fallen away. Renovation was unavoidable.*

a member of the Hagenbund and Secession groups of artists. He belonged to the avant garde of his time and is often men-



*The energy-saving EIFS façade grows under the netting.*

tioned in the same breath as Adolf Loos and Josef Hoffmann. His other works included the plan for the Zeiss plants in Penzing (Vienna), but his main achievement was the 1908 Luithlen sanatorium (later Auersperg sanatorium). From 1927 to 1932, he contributed to the plan for the Turkish city of Ankara.

## Renovation was inevitable

Over the years, the splendid Hanusch-Hof had become unsightly, and renovation was inevitable. The contract for thorough refurbishment from Stadt Wien – Wiener Wohnen went to ARGE Leyrer+Graf/Sareno. The task of local supervision went to ARGE Gemeinnützige Wohnungs- und



*After: Renovated from the ground up and with modern Capatect insulation installed, the property now offers a considerably higher quality of accommodation.*

Siedlungsgen. »Siedlungs Union« reg. Gen.m.b.H – A. & G. Galli Gesellschaft m.b.H. Over a three-year period, the property was renovated from the ground up, connected to the district heating, and given a Capatect WDVS (exterior insulation finishing system) over a total 26,200 m<sup>2</sup>, bringing it up to modern energy standards. A series of new apartments was also created under the new roof of the top floor. Approx. 11.5 million euros was the investment made by Wiener Wohnen for the renovation and restoration of the building which today is again a district showpiece. ■



*After renovation: The residential building constructed under Mayor Karl Seitz on the Erdberger Lände is today a model for the revitalisation of urban residences from the end of the 19th century.*





*With a length and width of 85.8 and 10.4 metres, respectively, the »Horst Felix« is the ideal size for heavy goods transport and can also be used for hydraulic engineering projects. This delights its namesake and grandson of the senior director, Horst Felix. Its role as a dredger is captured in a painting by the six-year-old.*



## Heavy goods vessel takes to the water

With the planned commissioning of this new vessel, the Felbermayr fleet substantially strengthens in presence in water transport. The conversion of this jewel of the inland waterways began in autumn 2010. It was completed this March.

Some 200 tonnes of steel were used in the conversion of the vessel from dry freighter to heavy goods transporter. Work started in September 2010, after the vessel entered the ÖSWAG dry dock in Linz. The superstructure over the main deck was modified by the experienced maritime engineers, and the loading area, with its wear-resistant Hardox plates, rebuilt. »That also provides ideal conditions for heavy goods,« notes Horst Felbermayr who had the vessel re-



*The hull was fitted with trim tanks. The vessel's draught can be varied by flooding the tanks.*

named »Horst Felix«. It is also worth mentioning that the wheelhouse was equipped with a scissors lift. »That gives you a good view of higher loads,« the senior director points out. »Other highlights for future heavy goods transport include external reinforcement of the bow and the creation of a 1,200 m<sup>3</sup> ballast hold,« adds Horst Felbermayr. »The bow now allows loading and unloading using a RORO ramp. And the ballast hold can be flooded with water if required to vary the draught of the vessel when passing under bridges, for example.« The 85.6-metre vessel can also be held steady in the current by two hydraulic stilts.

### Conversion completed

Most of the conversion work was completed by the end of January and the vessel could be launched after the five-month job using the ÖSWAG dock's own slipway. The interior fit-out and installation of nau-

tical equipment followed. The final trials and commissioning of the »Horst Felix« took place in March.

*Most of the work was complete after five months of conversion at the Linz dock. The vessel was launched in January from the ÖSWAG dock's own slipway in Linz.*







L to R: Robert Stürzlinger, Johann Gangl, Andreas Hüttmayr, Ulrike Vorhauer, Horst Felbermayr, Barbara Weiß, Rosa Adamsmair, Markus Godina, Robert Grundner, Josef Stroissnigg

## WELS HALF-MARATHON CONSTRUCTION ATHLETES ON THE GO

Construction section managers Horst Felbermayr and Johann Gangl were joined by eight other staff members in March to exert themselves in the Wels marathon. While the two managers demonstrated with their respectable averages over the half-marathon distance that the company is more important than excessive training, Robert Stürzlinger, closely followed over the 7.1 kilometres by Andreas Hüttmayr, was able to come out the Construction winner. A tendon inflammation got the better of Barbara Weiß, who limped home at the rear of the 252 participants in the 7.1 kilometre event. However, one thing was certain for her and all the others on the Felbermayr team: »We'll be there again next year!«

## 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.

Engelbert Bachner – Waste management Wels · Sandor Bajusz – Heavy transport Lauterach · Anton Paul Benndorf – Transport Lanzendorf · Franz Brendle – Crane Wels · Ladislav Broco – Crane Bratislava · Rasim Cavkic – Workshops Wels · Vahid Hodzic – Structural engineering Wels · Nedeljko Jetic – Civil engineering Wels · Ostoja Kovacevic – Civil engineering Salzburg · Neydharta Krondorfer – Administration Wels · Sefidin Krueziu – Civil engineering Salzburg · Velibor Mejancic – Civil engineering Salzburg · Hubert Rathmoser – Project section Wels · Ratomir Momcilovic – Civil engineering Wels · Franz Nimpf – Workshops Wörgl · Franz Seidl – Crane Wels · Johann Sperz – Civil engineering Grieskirchen · Richard Tarbuk – Transport and lifting technology Slovakia · Milo Trivkovic – Crane Linz · Paul Walter – Transport Lauterach · Alois Zach – Crane Lanzendorf

## Competition

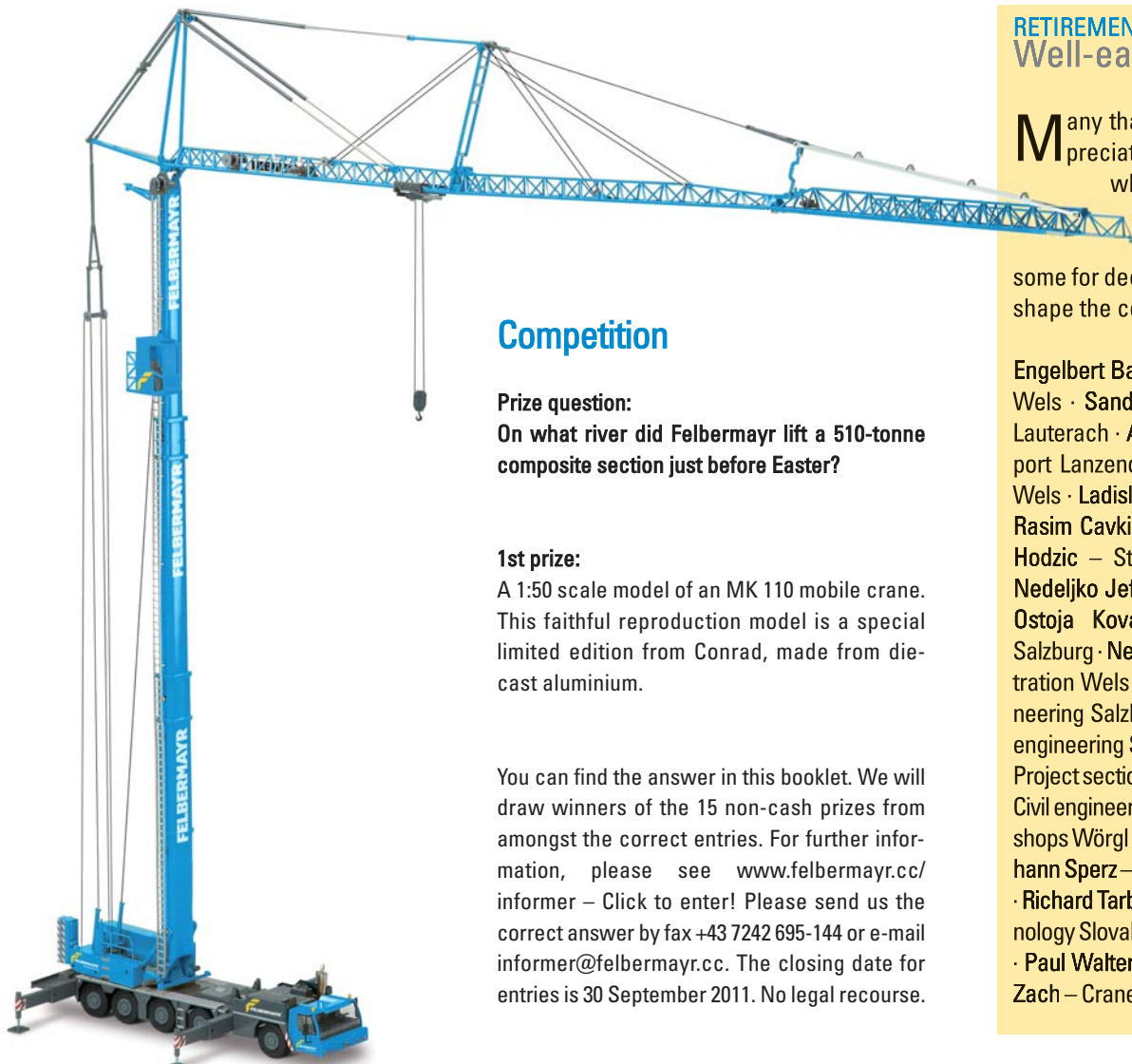
### Prize question:

On what river did Felbermayr lift a 510-tonne composite section just before Easter?

### 1st prize:

A 1:50 scale model of an MK 110 mobile crane. This faithful reproduction model is a special limited edition from Conrad, made from die-cast aluminium.

You can find the answer in this booklet. We will draw winners of the 15 non-cash prizes from amongst the correct entries. For further information, please see [www.felbermayr.cc/informer](http://www.felbermayr.cc/informer) – Click to enter! Please send us the correct answer by fax +43 7242 695-144 or e-mail [informer@felbermayr.cc](mailto:informer@felbermayr.cc). The closing date for entries is 30 September 2011. No legal recourse.



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