

INFORMER

THE FEFELBERMAYR GROUP MAGAZINE 2/2018

INNOVATIVE

CANAL REHABILITATION
IN BAVARIA

LARGE-SCALE DEPLOYMENT

MAINTENANCE SHUT-DOWN
AT VOESTALPINE

GODLY

WORLD'S LARGEST CHURCH
BELL LIFTED INTO PLACE

PHOTO: ANDRITZ AG

STEEL 'YANKEE'
DRYING CYLINDER FOR 'ZELLSTOFF PÖLS'



Dear Sir or Madam,

The economy is booming and still on a path of growth which means that we, too, can look forward to next year with optimism. Even if the growth will slow down a little, the fact that infrastructure measures were put on hold in the times of austerity caused by the financial crisis will continue to fill our order books next year. Thus, we benefit from the good current economic climate but still have to deal with a shortage of qualified specialists and are looking for staff in almost all sectors and departments.

Operational business is not only made more difficult by a shortage of specialists, however. The dry weather also presents

a challenge. Lowering river levels cause regional fuel shortages at the pumps as waterways such as the Danube, the Rhine and the Elbe can only be used to a limited extent. This hits the industry hard which can only be supplied with raw materials insufficiently or at a higher price. This makes life tough for our maritime subsidiary Hæger & Schmidt. Therefore, the company specialising in short sea and inland waterway transport had to find alternative ways to meet the ongoing demand for shipping space – a challenging task which the company masters successfully.


The changing climate likewise demands change and new solutions. Just like we did

in the past, we will continue to face these challenges and to motivate our staff to take them on.

Let's defy the climate together with our innovative suppliers, and we're not talking about the weather but rather the geopolitical change with punitive tariffs and the EU drifting apart. This will be the only way to continue to impress our customers and remain successful.

We would like to thank you for the things we have achieved together, wish you all well-deserved and relaxing holidays as well as much health and success in the new year.


DI Horst Felbermayr


Horst Felbermayr

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News from our employees

HAEGER & SCHMIDT LOGISTICS Contract for container transshipment at Andernach port extended

Felbermayr subsidiary Haeger & Schmidt Logistics (HSL) has been doing business at the Andernach (D) location for more than 30 years. On 31 October, before its termination, Stadtwerke Andernach and HSL have extended its cooperation contract for further ten years. Since 2000 HSL, together with port operator Stadtwerke Andernach, has been offering individual transshipment, forwarding and warehousing solutions at the tri-modal combined transport terminal of CSA Andernach. Since the beginning of their partnership, container transshipment has increased from 10,000 TEU in inception year 2000 to more than 130,000 TEU. Andernach port is the largest port on the Middle Rhine and an important tri-modal transport hub for the regional economy.

From left to right: Lars Hörnig (Commercial Director of Stadtwerke Andernach), Heiko Brückner (CEO of Haeger & Schmidt Logistics), Jan Deuster (Technical Director of Stadtwerke Andernach), André Hoffmann (Haeger & Schmidt Logistics Branch Manager), DI Horst Felbermayr (GF Felbermayr Holding), Jens Lauermann (Port Operating Manager at Stadtwerke Andernach), Lord Mayor Achim Hütten (City of Andernach).



CONSTRUCTION ENGINEERING Underpass structure constructed for forwarder

In the framework of the creation of new parking spaces at transport company Gartner's headquarters in Lambach in Upper Austria, Felbermayr was commissioned with building a road underpass. The underpass was built as a closed reinforced concrete frame and underpasses the B1 Wiener Bundesstraße (sliding method) and a bypass. The structure's total length is about 45 metres while it measures some ten metres in width.

Additionally road-building and hydro-engineering measures such as infiltration basins were created. Infrastructure measures associated to the project such as line construction and auxiliary construction measures were also part of the contract's scope. In December 2018, following seven months of construction, the project which was executed by a consortium, was completed.



ROOF GRAVEL REMOVAL
Suction dredge
saves time

A suction dredge deployed by the Wels-based Environmental Technology and Resource Department was used in September in the framework of the addition of another storey to a foodstuff retailer's building in Marchtrenk. In a matter of one and a half days some 50 cubic metres of roof gravel were suctioned off at a height of about 15 metres and submitted to the recycling process. Using a suction dredge allowed for dust-free suction and efficient work methods prevented construction delay.

This suction technology is also used for civil engineering and earthwork, by the way. It can, for instance, be utilised to safely expose ground lines. Another advantage is the fact that removal and transport is done by a single piece of equipment.



BUILDING CONSTRUCTION
Shoe factory becomes art factory

In mid-March Felbermayr's Building Construction Department began work on the rehabilitation of the former Kitzmantel shoe factory in Vorchdorf in Upper Austria. The scope of the contract commissioned by the municipality included all master builder work from partial demolition and gutting work to bricklaying and the construction of a staircase with lift and sanitary blocks. The building's rehabilitation was completed in late autumn with screed and plaster work. Now, the building houses a 500-square-metre museum area on the ground floor and 500 square metres of event space on the first floor.



PHOTOS: GÜNTER ZEHEITMAIR (2), VORCHDORFMEDIA (2)



TRANSSHIPMENT

Five days for five tanks

Mid-September saw the transshipment of five natural gas storage tanks at Felbermayr's Krefeld heavy cargo terminal. 'Big Rocky', the terminal's stationary crane and a crawler crane with a maximum load capacity of 750 tonnes were used for the steel con-

tainers' transshipment. At a length of 67.5 metres and a diameter of 6.5 metres, three of the containers weighed 280 tonnes each. At 148 tonnes, the other two steel giants only weighed half as much measured 35 metres in length and the same 6.5 metres in

diameter. To put the tanks onto their foundations at the nearby destination, lifting frames supplied by Felbermayr subsidiary Wimmer Maschinentransporte were used. The containers had departed from Haselünne-Flechum in the north-west of Germany.

INNOVATION

Lifting bridge for transformer transport

Late October's transport of a 150-tonne transformer involved Bau-Trans's Assembly Logistics and Transport Services Departments as well as ITB (International Flatbed Rail Transports) and Felbermayr's Mägenwill branch. Its route led from Bassecourt (CH) to Bickingen in the region of Berne. One of the special features of this transport was the adaptation of the deployed lifting bridge to serve as a transformer bridge.

To complete the transport as cost-efficiently as possible its holding device was adapted for the beams of a vessel bridge



to allow it to be hooked up to the upper part of the lifting lever. This allowed for the transformer to be lifted and lowered during transport. Thus equipped the transformer could, for instance, be lifted over barriers when negotiating corners. The load jour-

ney of several hours was accompanied by numerous traffic guidance measures. Among other things, signal systems had to be removed and the load was raised and lowered several times to overcome obstacles.

FRAME CONSTRUCTION

Industrial hall for the manufacture of clamping and anchoring technology built

In a mere five months Felbermayr's Building Construction Department built an industrial hall with a ground space of some 2,000 square metres. The unit was executed as a reinforced concrete frame construction with panel lining and houses some 1,200 square metres of production area, 900-square-metre warehouse and about 100 square metres of office space. As a general contractor Felbermayr was also responsible for landscaping some 2,500 square metres of exterior space. The project was completed in late November. Some ten metres tall, the hall is used to produce clamping and anchoring technology for the construction industry.



Heavy haulage and lifting technology for high-tech paper machine

Late July saw the start of one of the year's most important projects for Felbermayr's Project Department. The challenge was to transport two approximately 100-tonne steel components from Tiszkécske (HU) to Pöls (A) for Europe's most modern kraft paper machine. A crawler crane with a 63-metre cantilever performed the grand finale in early November. The client was ANDRITZ AG.

The heavy haulage transport led from the Hungarian factory of international technology corporation Andritz in Tiszkécske to Zellstoff Pöls, a member of the Heinz Group, in Styria. "The 550-kilometre route was littered with obstacles," recalls Jürgen Steinbrecher from Felbermayr's Transport Department: "Many lane changes as well as a dozen tunnel shut-downs were required but also the

transport height which – despite the use of flatbed trailers measured 4.3 metres – challenged our drivers. They had to use all their skills, especially in the many tunnels." Considering all of this it becomes obvious why the so-called Yankee cylinder had to be transported in two halves with a length of 7.3 metres and a height of 3.3 metres each. Both parts weighed in at some 100 tonnes.

Once they had arrived at Zellstoff Pöls in Styria the two steel cylinders were unloaded with a mobile crane and stacked with millimetre precision. This provided the prerequisite for welding the two high-tech components together and to 'marry' them to form one large part, as the experts say. This increased the cylinder which will be used to dry and straighten paper with a diameter of 7.3 metres to a height of approximately 6.6 metres and a weight of more than 200 tonnes. This makes the steel giant the largest welded high-precision drying cylinder in the world. This operation was followed by two lift jobs that were no less difficult than the demanding transport when it came to the stipulated care.

Two-stage crane job

In order to lift the cylinder into the machine hall via the roof, it had to be turned horizontally by 90 degrees on a previously installed shaft. "An LR 1750 crawler crane with a ballast of 515 tonnes and an LTM 1350-6.1 with 80 tonnes of ballast were used for this purpose," says Michael Lehner from Felbermayr's Project Department about the details. The crawler crane with its higher carrying capacity was responsible for lifting the cylinder off the ground while the mobile crane turned it. Two days later it was time for the grand finale – the cylinder was lifted into place. "For this purpose another 150 tonnes were added to the suspended ballast and the 35-metre main boom was extended with a 28-metre luffing jib," Lehner explains. Furthermore, an approxi-

In order to be able to negotiate Grünhübel Bridge, the load was lifted hydraulically to make sure it wouldn't collide with barriers or bridge railings.





Zellstoff Pöls is an industrial location belonging to the Heinzel Group. Together with other production facilities in Laakirchen (A), Raubling (D) and Estonia, it is one of the most important manufacturers of market pulp and packaging paper in Central and Eastern Europe.



Passing through the many tunnels along the route demanded millimetre precision and challenged drivers and escorts alike.

mately 30-metre track for the crane had to be built from bongossi timber to achieve a better weight distribution. For to add to the job's difficulty the crawler crane had to rotate by about 180 degree after it had lifted the load and then drive more than 20 metres in the direction of the machine hall with the more than 200-tonne drying cylinder suspended. "This stage demanded extreme levels of concentration since we

could under no circumstances let the load start to swing," Lehner reports, appreciating the crane operator's work. Once the opening in the machine hall's roof had been reached the latter had to once more show off his skills with the joysticks. At this stage, the crane operator had to put all his trust in his guide's commands in order to lower the Yankee cylinder into the machine hall through the opening which was barely wider

than it. This is where the features of the luffing jib came in – only it allowed the team to reach the roof opening without colliding with the building's edge. Three hours of full focus later the crane job, which had been meticulously planned for months, was completed and the Yankee cylinder – the core piece of the new paper machine – had been lifted into its final place. Lehner's comment: "Planning and reality matched – perfect." ■

'David' and 'Goliath' join forces for canal rehabilitation

Hagn Umwelttechnik is the Felbermayr subsidiary that once again found a solution with its innovative strength. The problem was leakage on the Isar Canal near Eitting in the north-east of Munich.

Similar to a bypass the 'Central Isar Canal' branches off the Isar River north of Munich, meanders through Upper Bavaria for some 64 kilometres before once again merging with the Isar River at Landshut. In between it descends by some 100 metres which is exploited to produce electricity. The canal's construction started in 1919. Due to a road tunnel leading under the canal the canal's base started to leak in the past close to the town of Eitting. This is why the decision was made to additionally seal the working canal in the area of the Eitting Tunnel. Hagn Umwelttechnik's Project Manager Michael Altschäffl on the subject:

Careful removal

Prior to fixing the cracks in the concrete canal, an additional seal which had been installed in 2016 had to be removed. One solution that involved the use of a demolition excavator in the canal was quickly discarded as the existing concrete canal seal would most likely not have been able to withstand its weight. A solution was finally found in a 'combination of David and Goliath', David being represented by a walking excavator with a weight of only 15 tonnes placed in the canal. This excavator was used to gently remove the seal consisting of sand mats, geomembranes and concrete-filled mats.

tres in length could be covered. But how was the crane supposed to take care of the seal's construction? "The only solution was a converted and remote-controlled sorting gripper with a hydraulic aggregate," Altschäffl illustrates. Furthermore, it became necessary to lower the water table in the canal by some four metres to a maximum of two metres. Otherwise the excavator operator would have gotten wet feet. The excess water was re-routed into the Isar River for the time of construction.

This way a total of 5,000 square metres of sand mats and geomembranes each were removed. Furthermore, 64 concrete-filled geotextile tubes with a diameter of about one metre and a length of approx. five metres had to be lifted out using the crane. "These elements weighing some ten tonnes served as the load to secure the geomembranes in the canal's cove," Altschäffl describes further details.

Innovative rehabilitation concept

Industrial divers were deployed at the same time as the removal. Their job was to clean the exposed canals using pressure washing systems. "After that the cracks were filled with underwater suitable injection mortar. Asked why the canal couldn't be completely drained Altschäffl comments that this wasn't possible since a certain amount of water still needed to flow down it to cool Munich's northern thermal power station. As a 'slide layer' on top of the sealed concrete base tubes filled with Bentonite sand were laid along the cove base. Supported by a walking excavator, the long boom excavators laid tubes with a unit length of some four metres and a diameter of approximately 25 centimetres. "On top of that we used another layer of two-metre-wide Bentonite sand mats that were installed in flow direction in the centre of the cove," Altschäffl



Teamwork: The walking excavator passed the material on to the sorting gripper of the crawler crane.

"In the winter when it snows huge temperature differences occur between the canal's base which is protected by the soil and the area that is exposed underneath due to the tunnel's routing." This led to thermal tension that, in the end, resulted in cracks in the canal's concrete base.

Lifting the material out of the canal was where Goliath's – a crawler crane with a working weight of 1,000 tonnes and a 140-metre cantilever arm – came in. Thanks to the length of its cantilever arm and the crawler chassis' mobility, the entire construction site area some 150 me-

illustrates and adds that Bentonite – contrary to concrete – is a building material that doesn't fully harden, which is why this material has good water absorption capabilities, stays flexible and retains its excellent sealing properties. After that a twenty-centimetre underwater concrete base was installed along the whole length of the project.

Due to the fact that no power could be produced by the river's hydro power plants during the remediation work, construction time was limited to six weeks. "Thanks to our innovative concept and the dedication of all employees, we were actually done a full week before the end of the deadline," Altschäffl exclaims proudly. ■



A concrete layer twenty centimetres thick was created as a load for the sealing structure.



Prokurist Michael Altschäffl from Hagn Umwelttechnik is happy with how swiftly construction progresses.



Due to temperature differences in the area of the tunnel, the canal had started to leak.

Rehabilitation of war-time buildings

In early May, Felbermayr's Building Construction Department started work on the rehabilitation of a number of buildings from the 1940s located in Linz's Bindermichl district. Master builder work is being implemented on behalf of Wohnungsanlagen Gesellschaft WAG. Most of the work is scheduled to be completed by the end of 2019.

The historic building stock and flats managed by WAG in Linz's Bindermichl district have been modernised several times over the years and adapted to the requirements of contemporary living. Most recently, the buildings dating back to World War II were also thermally rehabilitated. The rehabilitation project now commenced, however, also includes life cycle-related measures to the benefit of the tenants.

Rehabilitation adds value

The contract includes the rehabilitation of a total of 159 flats. "On the three-storey buildings, we will attach loggias with a depth of 2.3 metres to the existing façade,"

Construction Manager Robert Grundner says about work to be done on the courtyard side. The walls will mostly be executed in concrete. For this purpose, the existing flat window will be turned into doors.

Additionally, construction also includes the creation of 50 new flats on the attic floor. "For this purpose, we will first remove the roof truss," says Grundner. The materials removed will be submitted to the recycling process. Following this, the existing exterior walls in the courtyard will be bricked up by some three metres and dormers will be created to increase the size of the flats." A positive side effect of these expansion efforts is the fact that the buildings will receive a fourth floor. This also means

that 25 lifts have to be retrofitted to the complex. This would not have made economic sense with the previous three-storey layout, according to the housing development association. From the lifts, the flats will be accessed via the protruding loggias. Much to the satisfaction of many tenants, this also allows for barrier-free access to all four floors.

"It's great to see how an approximately 80-years old building is modernised and adapted to the requirements of modern living," according to Grundner. As a special requirement for such rehabilitation measures, however, a great deal of manual skill and tact on the part of the skilled workers is also a prerequisite. ■

The top floor's expansion creates some 50 new flats.

The use of sound insulation tension rods thermally decouples the protruding loggias, reducing heating costs.



To create the construction pit some 20,000 cubic metres of loose stones and 9,000 cubic metres of rock were removed.

Landfill construction

Work on the extension of the Guggenberg landfill in the Bavarian county of Miltenberg began in April. Felbermayr subsidiary Hagn Umwelttechnik based in Sulzemoos (D) serves as the contractor for the approx. 25,000 square metre project.

Landfill construction is always associated with high quality demands and strict controls," says Florian Pieringer from Hagn Umwelttechnik. The fact that no technical defects were reported during the entire construction period makes the 28-year-old construction manager all the more proud.

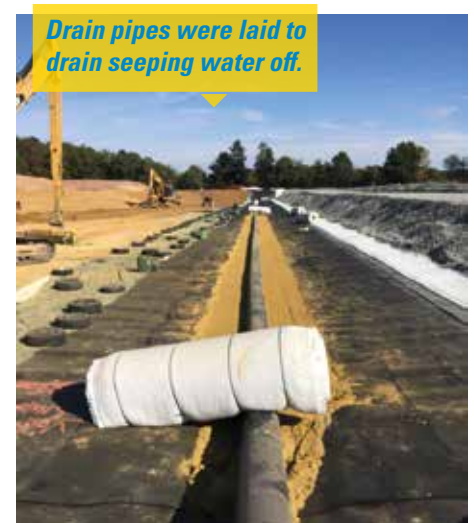
Intermediate sealing to adjoining structure

"The intermediate sealing consist of four layers and is created along the slope of the existing landfill to drain accruing surface water and minimise the seepage of contaminated water," Pieringer remarks and explains the landfill's structure as follows: "First comes a compensating layer made of household waste incinerator slag." This was necessary to make sure the following plastic sealing membrane is not damaged by pointy objects in the existing landfill. Following the laying and accurate welding of 2.5-millimetre-thick and 7.5-metre-wide plastic sealing membrane, vertical flues are installed. This allows the gases to escape from the waste underneath. This is followed by a fleece covered with a drainage layer of some 20 centimetres. "This allows the slanted intermediate sealing layer to drain all the way to the landfill base from where the

surface water is drained into the sewers," Pieringer further describes the project. The first step is thus completed and the team can start building the actual new landfill surface.

Base sealing measures

First the topsoil has to be created. "In our case all growth was removed from an area of some two hectares and after that loose stones and rocks were lifted out of the connection pit and disposed of," says Pieringer. The sealing system, layers of compacted loam up to 1.5 metres thick, is installed in the construction pit. This loam serves as a mineral seal to the soil below and is covered with a plastic sealing membrane. To drain potential seeping water drainage pipes are laid at defined intervals at rock bottom. Accruing water is guided into a cleaning system and after that fed into the waste water system. "To prevent mechanical damage to the plastic membranes, 2.5-centimetre-thick sand mats which are in turn covered with a 50-centimetre gravel layer for drainage, follow," Pieringer illustrates. After that and the inspection, the landfill can finally begin operation. In the case of the Guggenberg county landfill this will take place in early 2019 after eight months of construction.



Drain pipes were laid to drain seeping water off.

This expansion has been designed for a life time of some 15 years and is supposed to provide a capacity of about 130,000 cubic metres. This is equal to a cube with an edge length of 50 metres. The structure meets the quality standard of landfill class II. This allows the landfill to be used for non-hazardous waste with a low percentage of organic matter. To meet these high demands and to ensure compliance with proper execution the project was constantly audited by the Hagn Umwelttechnik laboratory and a company commissioned by Miltenberg county during construction. Additionally, the results of these audits were monitored by Bavarian's Environmental Office. ■



HALF TIME

Felbermayr's Construction Department has been working on the new Traunleiten Power Station in Steinhaus bei Wels since September 2017. The project had been commissioned by Wels Strom. Following its commissioning the power station will produce some 90 gigawatt of power per year. This is equal to an increase of about 70 per cent compared to the old power station. Commissioning is scheduled for November 2019.



Large deployment for voestalpine

July's maintenance shut-down of Blast Furnace A in Linz marked the beginning of one of year's most formidable challenges for Felbermayr's Transport and Lifting Technology Department: a logistical challenge concerning crane and platform rentals and one involving the manipulation of heavy goods.

Dozens of mobile cranes with load capacities of up to 500 tonnes and cherry pickers with working heights of some 60 metres were used during the maintenance shut-down," Felbermayr Area Manager Peter Linimayr summarises. voestalpine's largest blast furnace had to be shut down as a result of periodic service work which only happens every 14 years. In addition to truck-mounted cranes, cherry pickers and fork lift rentals, Felbermayr had also been commissioned with transporting and placing on its foundations a 180-tonne container.

Furnace gas scrubber marries

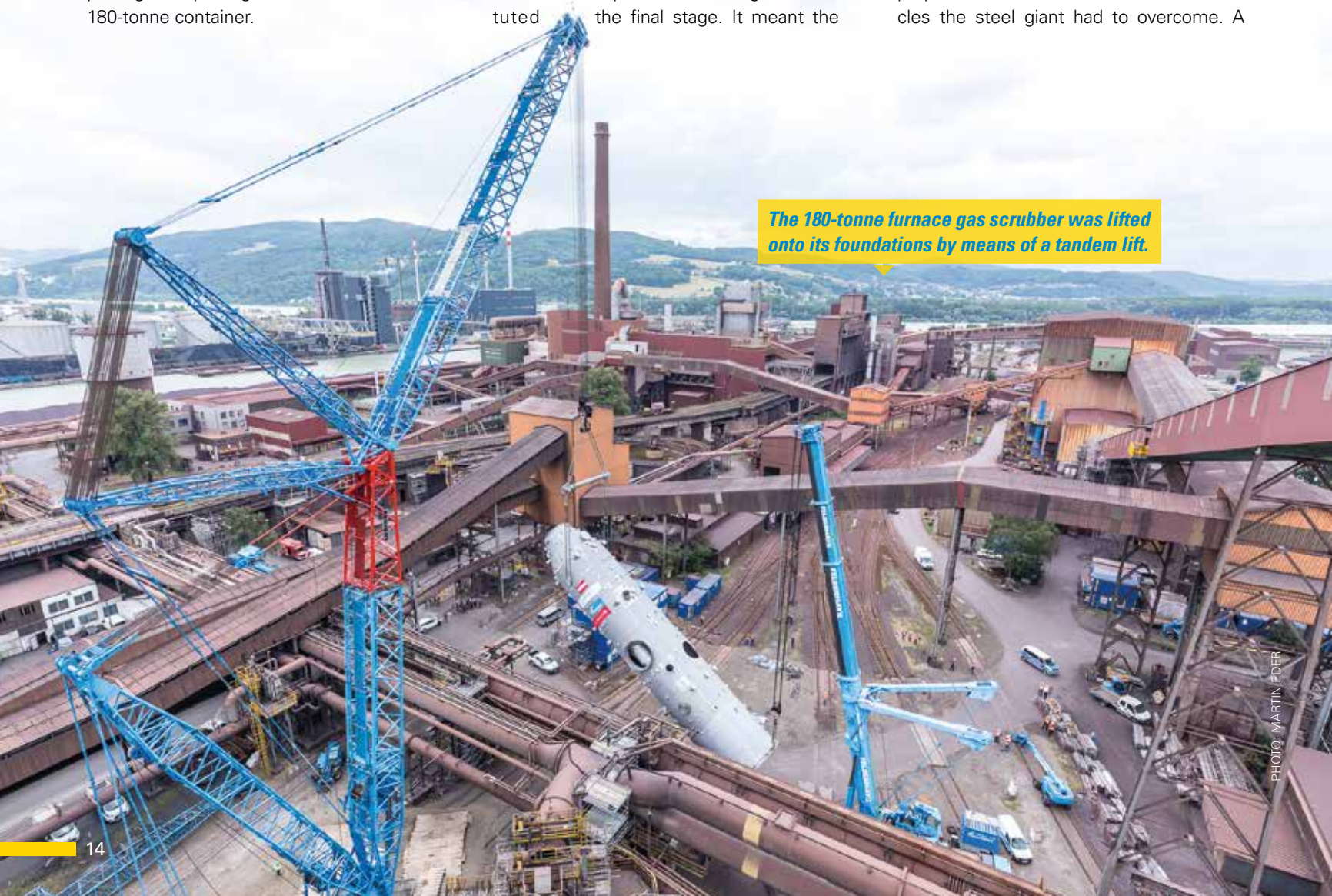
Located in the immediate proximity of the voestalpine works, Felbermayr's heavy cargo terminal with its production halls is a perfect place to produce so-called 'over-sized cargo'. This made the branch ideal for the furnace gas scrubber's assembly. The company commissioned with its manufacture only took about half a year to finish the approximately 34-metre construction with a diameter of more than seven metres. The component's 'marriage' constituted the final stage. It meant the

scrubber's three almost equally sized parts were combined to one large component.

Heavy haulage and crane jobs

"Our Project Department took about 50 days to work out a transport concept for the furnace gas scrubber," Linimayr reports. And that despite the fact that the assembly location and the components destination were only 3 kilometres away from each other. The reason for the long preparation time were numerous obstacles the steel giant had to overcome. A

The 180-tonne furnace gas scrubber was lifted onto its foundations by means of a tandem lift.



Self-propelled modular transporters are perfect vehicles for intra-plant transports.



pipe bridge six metres tall presented the first one the heavy haulage transport with self-propelled modular transporter ran into only some 900 metres into the journey. It was too low for the almost 10-metre-tall transport unit. Production-related matters made it impossible to remove the obstacle which is why the furnace gas scrubber had to be lifted over the pipe bridge. Two cranes with maximum load capacities of 500 and 750 tonnes did the trick. The lifting units were equipped with a total of 650 tonnes of ballast. Thus, the self-propelled transporter was able to pass under the bridge after the load had been lifted and to take back the load on the other side. After that the furnace gas scrubber made of Duplex steel was put down at a temporary storage site. "Then we removed the old container and also set it down at a storage site for it to be used further by the customer," Linimayr illustrates the process, adding details on lifting the old / new furnace gas scrubbers out of and into place: "We used two cranes, an LR 1750 crawler crane and an LTM 1500-8.1 mobile crane as a tracking crane. First the container's top side was attached to the bottom hook block of the crawler crane, it's bottom to the weaker mobile crane. After that both cranes started to lift until the 34-metre steel giant was in a horizontal position, after which it could be positioned on the waiting self-propelled modular transporter." This process was reversed to lift the new furnace gas scrubber into place. The crane job was made more difficult by the fact that, despite the spatial conditions at the site, a pipe bridge was located between the foundations and the transport vehicle. Which means the main crane was located on the scrubber side and the tracking crane on the road side, with the pipe bridge in between. In the course of turning it, the container thus

had to be lifted over the pipe bridge simultaneously. A hook height of 70 metres was reached in the process.



Prokurist Peter Linimayr, Branch Manager for Linz and, since the beginning, Felbermayr's 'Head of Cranes' is highly familiar with voestalpine's requirements.

Replacing the so-called furnace gas bunker on the 'head' of the blast furnace also proved complex. For this job, the team used another crawler crane with a load capacity of 600 tonnes and a working weight of 725 tonnes, 545 tonnes of which were ballast.

"This was necessary to lift the 56-tonne furnace gas bunker out of and into place at an outreach of 71 metres and at a height of approximately 85 metres on the one hand and to perform smaller jobs more than 110 metres above ground," says Linimayr, adding that the lifting concepts had been worked out by his colleagues in the Wels-based Project Department. Another challenge related to the furnace gas bunkers was the fact that – surrounded by steel structures – they had to be dismantled and assembled on the inside of the furnace frame which meant the crane had to be converted several times.

The project's scope of services furthermore included the transport of some 600,000 tonnes of upstream skelps. "We worked seven days a week, 24 hours a day with three vehicles," Linimayr reports. Weighing in at some 30 tonnes the skelps were needed to compensate the furnace's production standstill.

"We have once again given our best and are proud to have been working for voestalpine," says Linimayr. Worth mentioning that all work could be completed without a single accident. "We have once again proven worthy of the steel manufacturer's 'Supplier Award' we received five years ago for being a stable and reliable partner," a pleased Linimayr expresses.



The three individual parts of the furnace gas scrubber were 'married' to form a 34-metre container in Felbermayr's heavy-load hall.

World's largest church bell lifted in place

At a height of more than three metres, the largest one of the five bells of the new orthodox Church in Bucharest is regarded as the largest suspended church bell in the world. Weighing in at 25 tonnes the bell was lifted into the belfry of the newly erected Catedrala Nationala in early September.

Felbermayr has been active through its subsidiary in Romania since 2007. Up to today, the company has completed many transport and lifting technology jobs with lengths of some 50 metres and weights of approximately 300 tonnes in the land of churches and castles. With its six locations Felbermayr Romania not only covers the field of 'oversized cargo', but also serves as a sought-after service provider when it comes to smaller construction projects with its crane and platform rental business. By lifting the world's largest suspended church bell into its place, the Austrian family-run company of Felbermayr has now set another important milestone in Romania.

Deployment planning

Gabriel Puscoiu, Felbermayr's Head of Operations on site, began to prepare for the job as early as one month before the actual date. "Using computer-aided planning, we found out that the lifting job can be achieved using a 500-tonne class mobile crane," Puscoiu explains and adds that this was not clear from the beginning as the distance from the crane to the belfry was quite large due to the conditions on the construction site. It turned out, however, that the lift job could also be done using an LTM 1500 with a 84-metre main telescopic boom and 135 tonnes of ballast. "We not only made

sure that we provide excellent work but also that the cost factor was satisfactory for the customer," says Puscoiu and adds that a crawler crane with a higher load capacity would have been the alternative. This, however, would also have increased the costs significantly. Among others, the computer simulation took into account the bell's weight, distance to the centre of the crane's swivel head and possible wind speeds as well as the required ballast. Another important factor in such calculations are so-called interfering edges – parts of buildings over which the cantilever needs to lift the load.

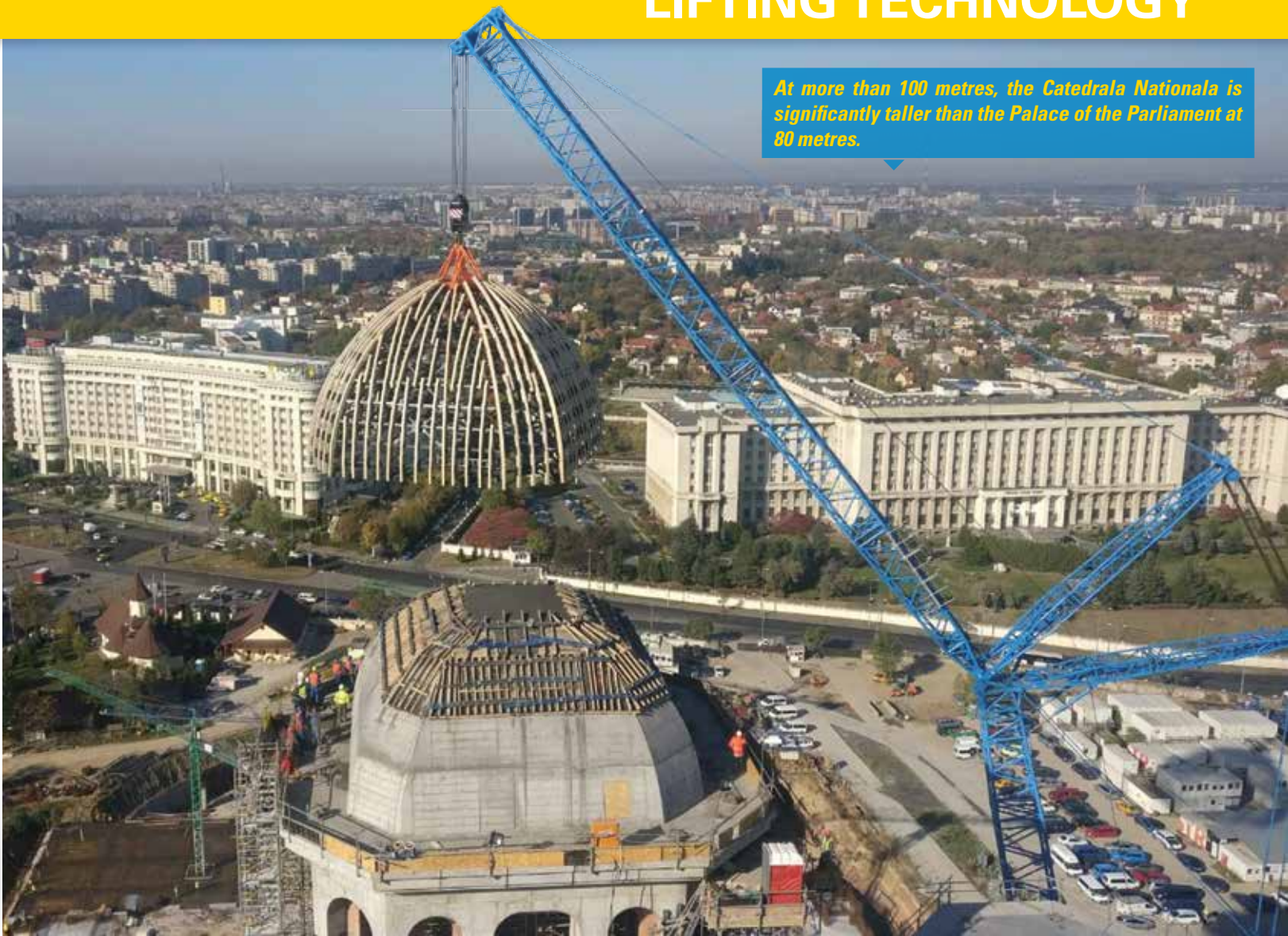
Despite all technical possibilities, the job remained exciting to the very end. "In advance, you never know whether the practical application matches the theory," says Puscoiu. On top of that, one always has to take into account and prioritise the safety of one's employees. Thanks to meticulous preparation and the experiences of all those involved the team nonetheless managed to perform the lift job with a hook height of 80 metres according to the simulation. Lifting the other four bells into place was 'bell's play' compared to their big brother. Together with the largest one, they weigh in at some 33 tonnes, creating a monumental chime.



The monumental chime of the new Cathedral is comprised of a total of five bells.



At more than 100 metres, the Catedrala Nationala is significantly taller than the Palace of the Parliament at 80 metres.



Dome lift for largest Orthodox church of the Balkan

Next on the agenda was the lifting in of the 96-tonne dome with a hook height of 102 metres. This crane job thus significantly exceeded the technical requirements for the bell lift. This time, there was no getting around the use of a crawler crane with a higher load capacity. "We used an LR 1600 with a maximum load capacity of 600 tonnes and a total of 550 tonnes of ballast," says Puscoiu. The crane was equipped with a 66-metre main boom and a 48-metre luffing fly jib to overcome an interfering edge. "This setup was not least necessary because of the 48.6-metre outreach of the cantilever arm," Puscoiu explains.

The bell will chime for the first time when the Church with the official name Catedrala Mântuirii Neamului (Cathedral of the People's Redemption) is officially dedicated on 25 November. Work on the object measuring some 9,000 square metres began in the fall of 2010. Together with multi-use halls, pilgrimage shelters and a soup kitchen, it is supposed to provide space for some 6,000 worshippers.



A crane with a 84-metre telescope boom was used to lift the 25-tonne bell into place.

Repowering the Oberzeiring Tauern Wind Park

Wind power systems have a limited service life which is why it can make sense to replace outdated systems with more powerful and efficient ones. Using as an example the Tauern Wind Park of Oberzeiring, Lukas Winkler from the consulting firm EWS which specialises in wind power, reflects on the background of these repowering measures.

Repowering is a hot topic right now. In 2018 EWS Consulting GmbH was working on four large repowering projects in Austria at the same time, involving the replacement of a total of 35 existing systems with 20 systems of the latest generation. Due to the further technical development of the system technology, repowering allows for the nominal output to be increased considerably on the same base area. Due to the more efficient new systems, significantly higher electricity yields can be achieved.

Fewer systems, higher performance

Repowering will increase the electricity yield of the Tauern Wind Park of Oberzeiring in Styria by more than 50 %, producing enough power for more than 25,000 electric cars or approximately 20,000 households. Now, the facility is state-of-the-art and perfectly prepared for the next 20 years. When it comes to repowering, the focus is on keeping existing systems in operation, producing electricity for as

long as possible which in turn guarantees responsible dismantling management. The right concept for the reuse of the existing infrastructure and organising the recycling or environmentally friendly disposal of all components can also save costs for the operator. By increasing the emission-free wind power yield at the same location, repowering also contributes to climate protection which makes it an important topic in the years to come, especially regarding the Austrian and European climate related targets!



In operational implementation, the quality of transport logistics is crucial for success or failure.

Alpine Wind Park 1,920 metres above sea level

EWS and Felbermayr had already closely cooperated in 2002 when the first systems were erected at the Tauern Wind Park in Oberzeiring in Styria. Back then EWS had been responsible for permit planning and construction management. Felbermayr had taken care of transport logistics. The altitude and the associated extreme climate with snow, ice and of course wind as well as the sensitive alpine flora and fauna had posed a challenge. New transport routes were found and the long distances were covered. 900 metres of altitude change had to be overcome along the 11.5-kilometre access road.

Following the trouble-free erection of the Tauern Wind Park I pilot project in 2002 and since all yield data had been satisfactory and experiences with ice, storms, thunderstorms, turbulences etc. positive, the area still left available was put to good use and two more systems were built in 2004 and another one in 2014. In 2011, a solar power system capable of producing two megawatts was added. Due to the trouble-free implementation of the wind power facilities to the full satisfaction of the client, Tauernwind Windkraftanlagen GmbH once again commissioned EWS and Felbermayr with the repowering measures in 2018. In the repowering project's framework 13 Vestas V66 systems were reduced to nine Vestas V112 systems.

Transport logistics support repowering project

Since the very beginnings of wind power exploitation in Austria, Felbermayr has been a reliable partner for the construction of wind turbines. The repowering of the Tauern Wind Park of Oberzeiring, however, posed an extreme challenge for all trades involved. Preparation alone took about three years. As early as May 2016 Felbermayr conducted the first route studies for the erection of the Vestas V112 units at the Tauern Wind Park. Building on the results of the bend simulations a special version of the Vestas tower segments was developed due to the tight corners found at this location.

The time window for construction projects in an Alpine environment is exceedingly short – six months from dis-

COMMENTARY



**Lukas Winkler, Managing Director
of EWS**

"Tauern Wind Park Oberzeiring is a truly special project for us. Many renowned companies were involved in the 2018 repowering project. Our man on site Thomas Sutter tapped into his long experience and thanks to excellent cooperation with many partner companies, including Felbermayr of course, we were able to complete the construction work quickly. When problems did occur, they were solved jointly using swift measures and competent solutions."



mantling to commissioning. June 2017 saw the beginning of the establishment of new crane sites and the adaptation of the wind park's paths. The access ramp was adapted to the requirements of the transport in August of 2017 and in foundation construction started in September 2017. After that the transport specialists inspected the site to coordinate the transport logistics. The tight town centre of Oberzeiring as well as the simultaneous removal of the old systems posed particular challenges. Together with EWS the team worked out a clever transport concept. On 22 May 2018 – right after the thawing period – the dismantling of the 13 old systems began in Oberzeiring and was complete three months later. Setup work on the 9 new systems began at the same time. The first components of the V112 wind power systems were delivered in June. Commissioning began as early as early September and thus, the systems were taken into service one by one within a single month.

Felbermayr's Project Manager Georg Ferchumer was responsible for the transport logistics regarding the towers and

rotor blades needed for the new wind power systems' erection: "All in all, we were really lucky with the weather! We usually had good wind conditions during the construction of the turbines. Unfortunately, this was not the case with the crane conversion. The conversion took three days in wind speeds of 20 to 30 metres per second were pre-cases, which caused of tension. However, of joint experience challenges even in verse conditions, we master the situation the end, we actually construction site 2.5 schedule," Georg Ferchumer sums up.



**A total of 27 rotor blades with a length
of 56 metres each were transported to
the construction site.**

90-metre boom lift in action for cultural monument

Besides its jobs in the industry, the latest purchase of Felbermayr's Platform Rentals Department is also the perfect solution for creating expert reports and the restoration of cultural monuments. "F-90 LTK" proved this in mid-August during a job at Klosterneuburg Monastery.



90-metre boom lift in action for cultural monument

The limestone sculptures on the north and south tower of the Klosterneuburg Monastery have been exposed to the elements for several centuries. This wears the limestone down. To prevent hazards from falling material, the monastery's administration commissioned a scientific expert report. In a first step, crumbling material was identified and removed. AT 900 HF from Ruthmann based on a Scania chassis (Felbermayr denomination F-90 LTK) proved the perfect height access device for the job.

Maximum flexibility thanks to work platform

With a working height of 90 metres and a lateral reach of 42 metres and the 33-metre upper boom, the F-90 LTK is the perfect tool when it comes to maximum flexibility in accessing interfering edges and working at great height. Due to local conditions, inspecting the towers only worked when using setup sites to the west and south. This meant that the north tower some 40 metres tall had to be accessed via the nave's gable. "That was no problem thanks to the platform operator's skills and the F-90 LTK boom lift," says the responsible field agent Thomas Wiesner who goes on to specify that the stone figures located at 65 metres could also be accessed this way. The maximum lateral outreach was 40 metres. The basket's possible rotation angle of 440° allowed for particularly efficient work.

Cost-efficient deployment

Alternatives to the use of a work platform had been to build a scaffold or use a mobile crane with a work basket. Both

alternatives would have exceeded the costs of the work platform by far, however. Additionally, the work platform can approach the sensitive limestone works with centimetre precision thanks to gentle and jolt-free navigation. This provides the employees involved with a sense of security and helps prevent millions of Euros of damage.



Master of the skies: Platform operator Stephan Lux has been working with large Felbermayr platforms all around the globe for ten years.

In order to avoid possible hazards, some 100 kilograms of loose stone were removed right after the report had been created. The two 85-metre-tall towers are scheduled for a comprehensive restoration in 2020.



Heavy haulage using a bridge trailer

In early September Bau-Trans carried out two special transport jobs using a bridge trailer. Departing from Steinhaus close to Wels it transported two 86-tonne containers.

Preparations for the creation of a transport concept for the use of this special flatbed trailer took about half a year. "Due to an overall transport weight of some 250 tonnes, the bridge trailer had to be statically calculated. Secondly, because of its overall length of some 74 metres, a temporary motorway exit had to be updated as well," Josef Amman, the Department Manager for Heavy Haulage Transports explains the background of this special transport jobs carried out in cooperation with Felbermayr. The two storage containers weighed in at 86 tonnes each and sported a length of roughly 27 metres. They measured some four metres in diameter.

Pusher and tractor unit

Together with the bridge trailer and the tractor unit, the transport setup reached a total weight of a more than 200 tonnes. "Due to the inclines en route, the transports also required us to use a pusher unit," Amman reports. The tractor unit was a Mercedes Arocs 8x6 with 630 bhp,

by the way. An MAN TGX 8x4 with 640 bhp pushed the unit.

The bridge trailer was used because of the containers' length of 27 metres. Thanks to its special construction it can,

for instance, be lifted about six feet and thus be pivoted on top of barriers and other obstacles if tight corner radii or roundabouts demand it. This is a process that rigidly constructed frames do not offer. ■



29 WINS AND 58 PODIUM PLACES
TEAM FELBERMAYR SIMPLON WELS CELEBRATES ITS MOST SUCCESSFUL SEASON YET

For the professional cyclists from Wels, 2018 proved the most successful year of racing since the team's inception. In total, the strongest domestic professional cycling team celebrated 29 race victories this year, in addition to 29 other podium finishes. "With a total of 58 podium places, 37 of them in international races, we exceeded all expectations this year. Only excellent cooperation between all riders made this result possible," Racing Manager Andreas Grossek underlines. The majority of the top placings were achieved in major international races. In the end, 5 overall victories at international tours made the difference: At the Czech Cycling Tour, the Rhone Alpes Isere Tour, the Tour Paris Arras, the Tour de Savoie Mont Blanc and the Int. Oberösterreich-Radrundfahrt, Felbermayr riders in the shape of Riccardo Zoidl and Stephan Rabitsch were able to grab top honours. Adding to this was an outstanding victory in singles and team standings of the

Federal Cycling League. Another highlight of the year was the team time trial at the World Cycling Championships in Innsbruck, where the team took 16th place out of 22

teams. In other good news, Riccardo Zoidl has extended his contract and will continue his strong support of the Wels-based team in 2019.



PRIZE QUESTION
READ AND WIN

Prize question:
Who had commissioned the work on the expansion of the residual landfill of Guggenberg in Bavaria's Miltenberg County?

You can find the answer in this issue. From all those sending in the correct answer, we draw 15 winners who will receive non-cash prizes. Stating your mailing address, please send the correct answer per e-mail to: informer@felbermayr.cc or fax +43 7242 695-144. The entry deadline is March 31, 2019. All decisions are final and not subject to legal appeal.

1. prize:
A LTM 1250 5.1
scale 1: 50.



SNOWBOARD
MERINGER BEGINS
SEASON FULL
OF EXPECTATIONS



To keep up his fitness over the summer Meringer has followed a programme of thirteen units of weight training per week as well as specific and functional workout. The ÖSV snowboarder supported by Felbermayr had hoped for more at the Junior World Championships in New Zealand but two 23rd places are pretty respectable considering he had participated for the first time. The 17-year-old's goals for the upcoming season are to make it into the finals of the Eurocup as well as podium finishes at the next Junior World Championships in March of 2019.

PHOTOS: RSW, NZG, JACOB MERINGER

AWARD-WINNING FELBERMAYR RECEIVES AWARD FOR HR PROJECT

In October, Vienna's Hofburg Palace hosted Austria's largest HR Trade Fair, the HR-Inside Summit for the fourth time. In the context of this event for human resources specialists the best projects from the German-speaking world were chosen and awarded. Felbermayr landed a prize

in the Recruiting and Employer Branding category for a project to recruit crane operators. On behalf of the HR team the coveted trophy was accepted by Managing Director Andrea Felbermayr and Head of HR Astrid Reischl.



EMPLOYEE JUBILEES A BIG THANKS TO LONG SERVING EMPLOYEES

15 YEARS Robert Hierhold – Platforms Graz · Karl Thomas Schloffer – Transport Graz · Erich Odabas – ITB Linz · Radoslav Djordjevic – Cranes Lanzendorf · Karl Riegler – Cranes Lanzendorf · Alexander Jambor – Cranes Lanzendorf · Vladimir Trujkic – Cranes Lanzendorf · Gregor Gajko – Transport Lanzendorf · Jürgen Por – Cranes Lanzendorf · Petar Vucic – Cranes Lanzendorf · Josef Gschwandtner – Heavy haulage Wels · Reinhold Stöckelmayer – General cargo Wels · Reinhold Puttinger – General cargo Wels · Stefan Schörgendorfer – Workshop Wels · Burama Jarju – Workshop Wels · Franz Mai – Workshop Wels · Azem Ademi – Civil engineering Wels · Johann Zeschner – Civil engineering Wels · Angelika Kaiser – FST Salzburg · Johann Polzhofer – FST Salzburg · Markus Edlinger – FST Salzburg · Markus Winkler – FST Stams · Nedjmedin Durguti – MTA Wels · Hans Wolfsteiner – Hydraulic engineering Linz · Birgit Arthofer – Administration Wels · Thomas Schimpfhuber – Administration Wels · Claudia Peterleithner – Heavy haulage Wels · Carina Rößlhuber – Administration Wels · Ingo Müller – Bau-Trans Lauterach · Peter Klauser – Bau-Trans Lauterach · Andreas Haferkorn – Bau-Trans Lauterach · Michael Liebezeit – Wimmer Maschinentransporte Krefeld · Uwe Haake – Hagn Umwelttechnik Sulzemoos · Thomas Henninger – Hagn Umwelttechnik Sulzemoos · Jozef Lorinc – Felbermayr Slovakia s.r.o. · Stefan Hock –

Wimmer Maschinentransporte Sulzemoos · Hans-Jürgen Leichtle – Wimmer Maschinentransporte Sulzemoos · Roland Turo – Wimmer Maschinentransporte Sulzemoos · Reimer Jacobs-Hansen – Wimmer Maschinentransporte Sulzemoos · Thomas Eberhard – Wimmer Maschinentransporte Sulzemoos · Jörg Hesselink – Reinhold Meister Wasserbau Hengersberg

20 YEARS Hans Peter Plotsch – Cranes Graz · Dragan Kantar – ITB Linz · Marco Caruso – Management Klagenfurt · Martin Mayer – Transport Lanzendorf · Sascha Golubich – Bringing in Lanzendorf · Martin Zoidl – Bringing in Linz · Wolfgang Schwarzgruber – Heavy haulage Wels · Özlem Sakalli – General cargo Wels · Robert Brugger-Schiefermüller – Workshop Wels · Heinz Baumgartner – MTA Wels · Monika Zehetmair – Administration Wels · Jürgen Stütler – Bau-Trans Lauterach · Ljubica Pocrnja – Bau-Trans Lauterach · Dagmar Steiner – Bau-Trans Lauterach · Sandro Schieck – Hagn Umwelttechnik Sulzemoos · Roland Fuchs – Hagn Umwelttechnik Sulzemoos · Axel Rummel – Haeger & Schmidt Logistics Duisburg · Melanie Hauschild – Haeger & Schmidt Logistics Duisburg · László Bori – Bau-Trans Ungarn · Johann Eberl – Wimmer Maschinentransporte Sulzemoos · Thomas Wimmer – Wimmer Maschinentransporte Sulzemoos · Reno Schur – Reinhold Meister Wasserbau Hengersberg

25 YEARS Horst Harald Budaker – Civil engineering Wels · Gerhard Muckenhuber – Civil engineering Wels · Christian Wagner – Civil engineering Wels · Walter Hejl – Administration Lanzendorf · Jürgen Steinbrecher – Heavy haulage Wels · Marko Cvrtak – Heavy haulage Wels · Pvoslav Kostadinov – Heavy haulage Wels · Manfred Knoll – General cargo Wels · Mario Rensch – General cargo Wels · Josef Hetzenauer – Bringing in Wörgl · Dietmar Purucker – Hagn Umwelttechnik Sulzemoos · Rudolf Benz – Hagn Umwelttechnik Sulzemoos · Thomas Meyer – Haeger & Schmidt Logistics Duisburg · Melanie Schmidt – Haeger & Schmidt Logistics Duisburg · Maik Otto – Reinhold Meister Wasserbau Hengersberg · Martin Waizenegger – Reinhold Meister Wasserbau Hengersberg

30 YEARS Jürgen Schleiss – Abfallwirtschaft Wels · Edmund Kornfellner – Heavy haulage Wels · Günter Kreutzer – Heavy haulage Wels · Christine Wiesleitner – Administration Wels · Ludwig Schaumberger – Reinhold Meister Wasserbau Hengersberg

35 YEARS Günther Trauner – Heavy haulage Wels · Manfred Kunesch – Heavy haulage Wels · Martin Rindsfuser – Haeger & Schmidt Logistics Duisburg

40 YEARS Richard Brelich – Hagn Umwelttechnik Sulzemoos · Birgit Körfer – Haeger & Schmidt Logistics Duisburg · Petra Schlegtendal-Metzner – Haeger & Schmidt Logistics Duisburg

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