



Dear Ladies and Gentlemen,

the corona pandemic is currently determining our feelings and thoughts, both in our private lives and at work. The biggest pandemic of the past one 100 years has confronted our company with previously unimaginable challenges.

Thanks to the measures taken, the personal commitment and diligence of our employees, we have managed to adapt brilliantly to the changed conditions. For example, it has been possible to overcome interrupted supply chains and the lack of availability of skilled workers due to adverse travel regulations.

In the interests of our customers, this has enabled us to successfully complete many

a contract and start new ones, even under considerably more difficult conditions. I would like to thank our employees for this, who, even under physical exertion in some cases, complied with the respective valid regulations in an exemplary manner and thus showed responsibility: towards their colleagues, the clients and also society. As a result, our teams remained ready for deployment and the company remained economically on course – better than initially seemed possible.

Apart from regional fluctuations, the trend in new orders for the coming year is also positive. Ultimately, however, even we do not have a crystal ball and can only plan based on our confidence in the economy. And this confidence is great. That means that next year we will again invest heavily in our vehicle fleet and infrastructure in order to overcome this crisis in a stronger position. I am convinced that this is the basis for the successful continuation of the company. For there will be an economy after or with Corona. We have confidence in this and it gives us the strength to keep the company on the go. I would like to invite each and every one of our employees and suppliers on this journey. Furthermore, I would like to ask our customers to continue to trust in the efficiency of the Felbermayr company in the future.

In this spirit, I wish you a Merry Christmas and a successful New Year. But above all: Stay healthy.

Warm regards,

/CUUM Horst Felbermayr







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### **ANNOUNCEMENTS**



### STRUCTURAL ENGINEERING Building constructed for social welfare association

In August 2019, the construction of a new building for the social welfare organisation "pro mente OÖ" in Linz began with Felbermayr structural engineering as general contractor. The property offers around 1,450 square metres of office space and a catering kitchen with dining hall.

Around 1,350 cubic metres of concrete were used for the three-storey building. A special aspect of the structural engineering was the installation of the approximately 40 interior doors, which were finished with real wood veneer and the highest sound insulation requirements. Since the building

is being cleaned with an above-average amount of water, W5 seals were used for the catering kitchen, which meet the highest requirements for waterproofing. The planned completion date in August 2020 was met and the new building was handed over on time.

### BAU-TRANS Heavy transport for chemical plant

In October, three heavyweights were transported by water and road by our Felbermayr-subsidiary Bau-Trans Hungary. In Rotterdam, the goods were taken over for the chemical plant and shipped to Budapest by barge. This journey took two weeks. The parts weighing between 17 and 59 tonnes were then transferred from a 500-tonne truckmounted crane to the transporters. With one flatbed, one low-bed and one semi-trailer,

the transports took a total of four nights distributed over ten days to the unloading point - a chemical plant in Kazincbarcika (HU). For heavy transport, numerous overhead power lines were temporarily dismantled, bridges were statically calculated and an old cable car bridge in Mályi (HU) was dismantled and disposed of. The heavy transport was successfully completed at the end of October.



### THE BEST LOGISTICS WITH BEST LOGISTICS Abnormal load from Poland to Finland

In June, colleagues from Best Logistics, a Felbermayr subsidiary in Poland, transported two generators with a weight of 170 tonnes each from the EthosEnergy plant in Poland to the power station's powerhouse in Loviisa in Finland. This was done using inland water vessels with a harbour crane with a lifting capacity of 500 tonnes and two mobile cranes for transshipping onto road vehicles. Due to low water conditions an artificial wave was created as far as Szczecin (PL). This is achieved by selectively retaining and draining water in individual barrages. Best Logistics also celebrated 20 years of trading in June. We would like to congratulate you on your anniversary.



### **ANNOUNCEMENTS**



# LIFTING TECHNOLOGY Lifting frame for new fruit juice press

In April, a 25 tonne fruit juice press was replaced by the Felbermayr heavy installation at the Upper Austrian fruit juice producer "Pfanner" in Enns. A lifting frame with four pistons and a maximum lifting force of 50 tonnes was used for this project. The tight spatial conditions required this special lifting frame due to its narrow design.

The 6.6 metre long and 3 metre wide machine was lifted from the foundation and set down on a rail shifting system. Arriving on the rails at the production site, a mobile crane with a load capacity of 250 tonnes and a forklift and telescopic truck were used to manipulate the parts of the press weighing a total of 43 tonnes. The order was thus successfully completed.

### RENEWABLE ENERGY Small power plant for VERBUND

In cooperation with the Felbermayr Wels Power Station Construction, Spittal an der Drau Civil Engineering and Stams Specialised Civil Engineering departments, we were recently able to complete a residual water power station near the existing Häusling power station in the Ziller Valley ("Zillertal"). The construction of a 160 metre long pressurised water pipeline from the reservoir to the new small power station was particularly challenging. For this, the pipes used, with a piece weight of 5.4 tonnes and a length of 8.2 metres, had to be installed partly vertically

on a mountainside. Starting from the storage area near the power house, transport of the pipes to the construction site was carried out using a crawler excavator.

Construction began in autumn 2019. It was completed in November 2020. The power station uses the residual water from the Häusling pumped storage power station. It has a maximum continuous output of 1.8 megawatts and generates environmentally-friendly electricity for around 2,000 households.



### ANNOUNCEMENTS



# RECORD-BREAKING Longest push convoy ever used

April 2021. The provisional arrangement will remain in place until the new hospital extension can go into operation in mid 2024.

In August, Felbermayr hydraulic engineering transported 27 reinforced concrete girders with unit weights of up to 35 tonnes on the Vienna Danube Canal to the Kaiserbadschleuse lock. The lock, which has not yet been used but is a listed building, was connected to the Danube Canal promenade with the delivered parts and is thus to be converted into a new promenade. The starting point was the Felbermayr heavy goods terminal in the Albern harbour in Vienna. The F 131 large-capacity push barge with the 200-tonne crane mounted on it started from there. The "Grafenau" tugboat assisted by pulling the 126 metre long barge. The pushboat "Theresa" pushed the vessel. Joined this way, the total length was around 185



metres. This makes it the longest push convoy ever used on the Vienna Danube Canal. The length posed a particular challenge in the partly curved canal and the spatial geometry limited by bridges and the canal floor. However, this was

accomplished and the reinforced concrete girders, which were up to 26 metres long, were able to be moved by ship's crane at their destination in Vienna. The following day, the ship transport was repeated with a second transport.



#### **DIGITA**

### 3D-scanning for transformer replacement

Felbermayr carried out a transformer replacement for the Malta-Reißeck power station group in May. The special thing about it: The power station was accessed through the 358 metre long Galgenbichl tunnel on the Malta-Hochalmstraße. However, during

the approximately 30 years of operation of the transformer, this tunnel has been structurally modified, significantly reducing the clear width of the tunnel. For this reason, the tunnel and the GANTRY were surveyed in advance using a 3D-scan. This was the

prerequisite for being able to simulate the removal of the old transformer in advance on the computer. The result showed neuralgic points, but also revealed that the transport would be possible without any further construction measures.

# NURSERY SCHOOL Felbermayr builds new playground for the very youngest

The Felbermayr structural engineering is building a new nursery school for Wels in the city district of Pernau in ARGE with EWW Anlagentechnik as general contractor. The new play and wellness oasis for the very youngest is to be completed by May 2021. Around 800 cubic metres of concrete and 1,300 square metres of brick were processed – 15 Felbermayr employees actively pulled



up the shell of the building. The Liebherr 65 K fast-erecting crane was used for general contractor duties. All construction

services, with the exception of garden design and parking, are being carried out by Felbermayr structural engineering.

# GREAT 750-tonne crawler crane for recycling companies

The project department of the Felbermayr site in Wels used a Liebherr LR 1750 crawler crane in September for the waste recycling in Wels. Two refuse cranes of the waste recycling department had to be replaced. Two new, 24-tonne refuse cranes were lifted in to replace the old ones weighing 30 tonnes. The LR 1750 was built on four supports instead of the crawlers, because there is a guide wall at a distance of about 25 metres and the ground would not have withstood the pressure of the crawlers with the crawler crane's usual construction method. This guide wall protects the lower-lying buildings from the groundwater, which is about six metres higher than the lowest point of the buildings. The calculations for this were carried out by a structural engineer.





# for wind power

In order to also be prepared for the wings of the latest generation with lengths of around 80 metres, Felbermayr has now invested in the latest developments of the German vehicle manufacturer Goldhofer, based in Memmingen. Three "BladeS" and one "FTV 550" were ordered.

The "BladeS" is a follow-up concept for wind blades and thus an expansion of the Felbermayr portfolio for wind power. This will

make it possible to react to the increasing blade lengths and weights of future wind turbine developments and ensure their unsupported transport. Felbermayr has also decided on the variant with a larger hydraulic stroke. This allows the lower edge of the load to be raised to up to two metres above road level, which means that crash barriers and roundabouts, for example, can be overcome.

The "last mile" to wind power construction

sites often passes through minor road networks including forest roads. Restricted by low clearance gauges, the curve radii there can no longer be negotiated with conventional transport equipment; this is when the so-called blade lifters come into play. This allows the wing to be raised up to 60 degrees. With the "FTV 550", Felbermayr now has such a system in use for all current wing types. Delivery of the two units is planned for the beginning of next year.

**NEW SUCTION EXCAVATOR** Suction and blowing thanks to vacuum technology

Since July, a new suction excavator with vacuum technology has been in use in the Felbermayr environmental & resources division. The unit supplements the existing suction technology at Felbermayr. In the future, dry materials such as roof gravel can be blown away and liquids such as various sludges can be sucked up.

This is made possible by a vacuum pump with a suction capacity of 18,000 cubic metres per hour. The resulting vacuum causes the material to be sucked up through a hose and transported into the vessel with a capacity of 14 cubic metres. An essential feature of this technology is the use of hose lengths of up to 250 metres.





In September last year, Felbermayr began with the construction of its new company headquarters in Wels-Oberthan. All general contractor duties were carried out by the company itself, including the necessary transport and lifting technology services. The interior work is currently in full swing so that completion can be expected in July next year.

ground-breaking ceremony took place September, the earthworks on the ten-hectare construction site were already in full swing. A total of about 215,000 cubic metres of material were moved. This corresponds approximately to the volume of a rectangle the size of a football field, 50 metres high. Approximately 115,000 of these were accounted for by the underground car park, which holds around 400 vehicles. and the basement areas. This was followed by work on soil stabilisation in the area of the halls as well as securing existing high-voltage pylons in the south of the construction site with Felbermayr specialised civil engineering. In October the earthworks were almost finished again.

# From civil engineering to structural engineering

Site manager Christian Daxer from Felbermayr Structural Engineering commented at the beginning of the construction activities in November 2019 that the schedule was "very sporty", not yet knowing what obstacles he and his employees would still be confronted with in the spring of the coming year.

But things were still progressing rapidly; the 11,000 square metre underground car park was paved as early as December. Likewise, it was still possible in the past year to produce a large number of the total of 352 sleeve foundations for the supports used for the installation of the precast concrete elements. Some of these uprights, which were erected using cranes and stages rented from Felbermayr, rise up to 15 metres in height and, viewed from an adjacent mound of earth, look like skyscrapers striving to outdo each other in height. "Furthermore, in February we already started with the formwork and concreting work for the underground car park and the basement", says Daxer. These are ideal pre-conditions for the building to grow rapidly upwards.

### Lockdown delays construction work

In mid-March, a lockdown was triggered by a pandemic, the effects of which are still unforeseeable today - Corona had reached Austria and meant that work on the company's largest single investment to date, at more than 50 million euros, had to be suspended for around three weeks. "At that time it was not foreseeable how things would continue," says Daxer, recalling closed borders and lack of material supplies. However, the implementation existing regulations and a corresponding safety concept made it possible to slowly resume work after the threeweek lockdown. But border closures and quarantine regulations also made urgently needed workers on the construction site rare. "You cannot manage a project like this with local staff only, after all" Daxer notes, adding that for a few weeks the supply of materials had also come to a virtual standstill.

### **CONSTRUCTION**





Felbermayr is pleased with the construction

progress and thanks the employees.

By the summer, however, a large part of the lost time had been made up for, so that in mid-July a Corona-related reduced topping-out ceremony could be held. By September, the shell construction work on the three halls for the operational areas and the 8,500 square metre office and social building with childcare facilities had been largely completed, so that work could begin on the interior and exterior design. "I am glad that together with my staff I still managed to do this so well", Daxer says happily and adds with a smile that it is good to be able to hand over the exterior design to his colleague from civil engineering now, because he does not want to make the road to his new workplace himself after all.







# Showdown of heavy lift logistics for the petrochemical industry

Felbermayr and its subsidiary companies Bau-Trans and Haeger & Schmidt recently put the combined force of heavy lift logistics into effect for Hungary's largest corporate group. This involved the transportation of around 100 components in dual traffic right across Europe to Tiszaújváros, north-east of Budapest. The assignment, with piece weights of up to 400 tonnes, was completed in mid-May.

oughly 170 kilometres north-east of Budapest, the Hungarian oil and gas group MOL is constructing a plant for preliminary products used in the production of plastics – a polyol plant. "This is a flagship project for us, in which we can employ almost our entire range of heavy lift logistics," enthuses Peter Stöttinger. As managing director of Felbermayr Transport- und Hebetechnik, he also played a decisive role in ensuring the assignment was a success: "Working

together with our client, the project department of Schenker Deutschland AG, I began developing a logistics concept for the petrochemical plant around three years ago". Because the plant is being built "on a greenfield site" not far from the town of Tiszaújváros – home to 20,000 residents – the first step was to plan the necessary infrastructure. This included constructing a heavy-duty jetty on the River Tisa for inland waterway vessels. Furthermore, it was necessary to

build an approx. 1,000 metre long temporary access road from the transshipping point to the nearest public road. From here, it was around eight further kilometres to the site of the plant, which is the size of 56 football pitches.

### Inland water transport and Linz heavy lift terminal

The starting points for the oversized cargo consignments were primarily in



Belgium and Italy. "The shipments from Belgium, for example, were transported by our subsidiary Haeger & Schmidt using inland waterway vessels", says Stöttinger, explaining that these consignments were principally transported via the Belgian canal system, the Rhine, Main-Danube Canal and Danube to the Felbermayr heavy lift terminal in Linz. Intermediate storage followed here if necessary, in order to optimise the logistics chains. This was the case, for example, with a column approx. 30 metre in length and 8 metres in diameter. After an intermediate stop in Linz, this component – weighing in at approx. 200 tonnes - was transported on the company's own Lastdrager 30 (ro-ro capable heavy-lift lighter) along the Danube to the mouth of the Tisa, close to the Serbian town of Titel.



Felbermayr Managing Director Peter Stöttinger: "The project is a successful proof of the good cooperation with the subsidiaries Haeger & Schmidt as well as Bau-Trans.

A detour, one might think. However, transshipping from the Danube to the road in Budapest was not an option for onward transport to Tiszaújváros - transport by road would have been technically impossible due to the dimensions of this column. It was therefore necessary to select the destination ports of the components according to their dimensions. The transshipping of "roadworthy transports" onto low loaders took place in the Hungarian Danube ports in Gönyű and Budapest, after which they were transported directly to the construction site. This comprised around 25 special transports. Some of these were driven in convoys of up to five vehicles and reached their destination in Tiszaújváros after several nighttime stages.



Components delivered from Italy made their way via the Romanian Black Sea port of Constanta. The journey continued via the Danube and Tisa, to the transshipping point in Tiszaújváros.

### Crawler crane with 1,400 tonne operating weight

Those transports that arrived at the construction site by water were once again transshipped for the final part of their journey. An LR 1750 with main and derrick boom as well as ballast wagon was used, to guarantee the lifts with the steel giants weighing in at several 100 tonnes. "With this equipment, the crawler crane achieved an operating weight of around 1,400 tonnes", explains Stöttinger. This generates enormous pressures that have to be dissipated into the ground. A fact that was also taken into consideration when the crane site was built.

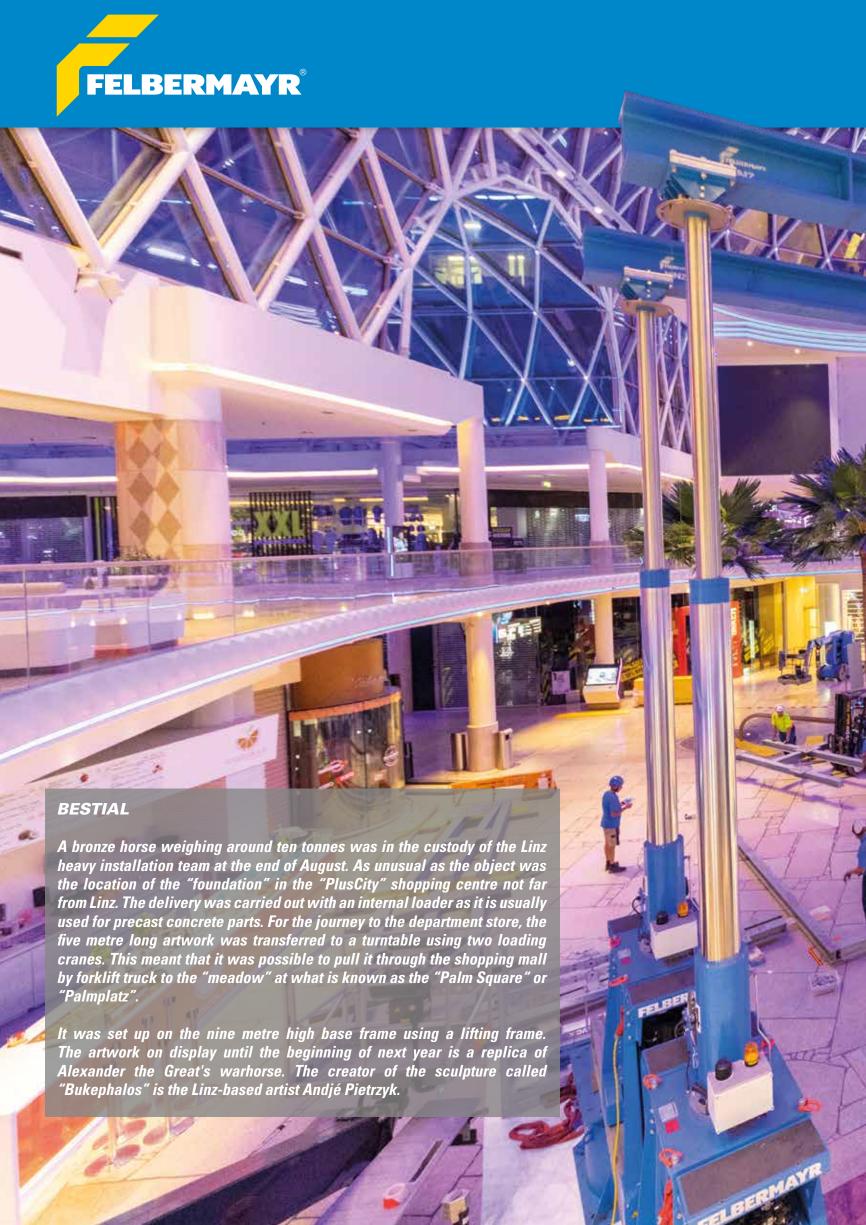
# Self-propelled modular transporter, vessel bed and semi low-loader for the last mile

Upon arriving at the temporarily constructed port in Tiszaújváros much had been achieved, but the goal had not yet been attained. No effort could be spared in going the proverbial last mile. As such, two self-propelled mo-

dular transporters – each with 18 axle lines and 500 horsepower – were on site to take care of the deliveries. Tractor units with semi low-loaders and vessel beds were used for lighter components weighing up to around 100 tonnes. "The heavy transports were completed in mid-May with three pieces of equipment, each individually weighing several 100 tonnes", Stöttinger recalls a further highlight. It was still necessary to statically calculate and support a bridge on the route to the factory, in order to withstand these steel giants.

And then it was complete - around 100 heavy transports had been successfully driven across Europe in roughly five months. Despite low water levels on the inland waterways and a pandemic with border closures, the project was completed on time thanks to dedicated employees and the best possible personnel planning. Stöttinger comments: "It was a logistical challenge. We have proven quality cooperation with the employees of Bau-Trans Hungary, who provided the special transports by road, including the permitting procedure and the construction site coordination on location, as well as the inland water transport specialists at Haeger & Schmidt". This brought the petrochemical plant a big step closer to its planned completion in the coming year.







### **CONSTRUCTION**



In May, the crane ship from Felbermayr hydraulic engineering was used for the construction of a temporary bascule bridge for pedestrian and bicycle traffic. The installation became necessary due to the renovation of a road in the area of the Kuchelau marina between Vienna and Klosterneuburg.

ith a length of 126 metres and a width of 11.4 metres, the crane ship from Felbermayr hydraulic engineering is very versatile. Thanks to a loading capacity of 3500 tonnes and two extendable stilts for holding on station in water flows, it is also ideal for salvage operations, specialised civil engineering work on inland waterways and bridge building. What makes the special push-lighter unique, however, is a crane positioned on the deck. This crane is mobile, has an approximately 37 metre long jib and a lifting capacity of 200 tonnes. In May, the vessel operating under the name "F 131" was used to build a temporary bypass bridge. This enabled foot and bicycle traffic to be diverted over the Kuchelau marina. Bridge sections can be raised thanks to the bascule bridge design. This allows boats to pass through the bridge.

# Setting pile moorings with a pile driver

"The prerequisite for the erection of the temporary crossing was the driving in of a total of eight pile moorings", describes Felbermayr division manager Hans Wolfsteiner. These piles were rammed vertically into the riverbed and later served to support the bridge structure. "The pile driving had to be done with precision down to the last centimetre," Wolfsteiner remarks, explaining that these 17-metre long, three-tonne pile moorings had to be rammed into the ground with an accuracy of a just few centimetres. Otherwise the bridge construction would not have fitted properly. This was made possible by the precise positioning of the crane ship by means of GPS and subsequent fixing to the river bed by means of two stilts. A template was attached to the side wall of

the ship. This served as a guide for the crane operator for setting the pile moorings with the crane. To fix the pile moorings sufficiently, they were rammed about seven metres into the riverbed. A pile driver with a seven tonne operating weight was used for this.

### Lifting in the bridge sections

The bascule bridge essentially consists of two panel bridges, each about 30 metres long – these lead from the left and right banks respectively to the middle of the river. In addition, a platform was placed on the pile moorings – this was mounted between the two panel bridges in the middle of the river and later accommodated the two elements of the actual bascule bridge.

However, in order to be able to assemble the components, they were first trans-



ported from the port of Albern to the construction site. As with the pile moorings beforehand, this was also done with the special push-lighter. Incidentally, Felbermayr is also the operator of the Albern heavy goods port. "This makes things a lot easier," comments Wolfsteiner, ad-

ding that this was also where the bridge sections were finished by the bridge construction company Waagner-Biro. The lifting in of the bridge sections was carried out with the ship's crane. Wolfsteiner adds: "With a radius of about 20 metres, the crane easily handled even the hea-

viest parts, weighing 20 tonnes." The cooperation with Waagner-Biro technicians and the local fitters was also seamless: "Textbook," Wolfsteiner says happily. So, the bridge was ready for operation after about two weeks and the construction site thus completed.



# **TRANSPORT**



Concentrated know-how was demonstrated by the Felbermayr subsidiary Wimmer during the relocation of a press for the production of steel rims for the automobile industry. The Wimmer employees received support in terms of transport logistics from colleagues from the other Felbermayr subsidiaries Bau-Trans and Haeger & Schmidt. The project was completed in August with the commissioning of the 830 tonne press in Troyes, France.

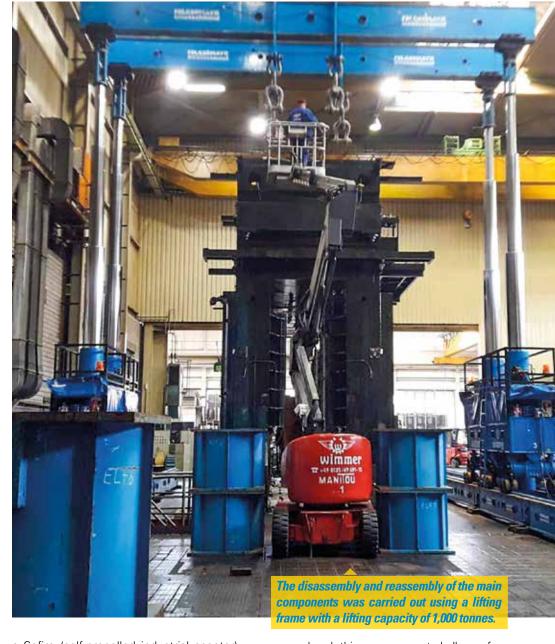
uring this project, from dismantling to assembly in Troyes, we had virtually every screw and electrical cable of the press weighing around 830 tonnes in our hands," says project manager Jürgen Nawijn, summing up the relocation of the press. The 55-yearold project manager from the Wimmer branch in Krefeld went on to say that it is therefore also worth mentioning that around two thirds of the scope of work was dismounting and mounting work, including electrical and hydraulic installation work. If one also takes into account that only about seven months passed between dismantling in Ebersbach (Germany) and commissioning in Troyes (France), the time-efficient work of all those involved in the project becomes clear.

### **Project logistics with Bau-Trans and Haeger & Schmidt**

The project planning for the relocation of the steel rim press was started as early as summer 2019. The provision and activation of the required equipment followed in January. Nawijn adds: "For the relocation of the assembly equipment alone, about twelve truck transports with about 200 tonnes of equipment were necessary. The dismantling of the system peripherals was then started in January. The heaviest components were the press base and the press head, weighing 130 and 150 tonnes respectively. These were dismantled using a 1,000-tonne lifting frame and loaded onto low loaders. All in all, about ten more abnormal loads had to be organised to relocate the press from Ebersbach to Troyes, some 200 kilometres south-east of Paris. All this, however, had been carried out by his colleague Mark Schellerer in cooperation with the sister companies Bau-Trans and Haeger & Schmidt.

### Rough assembly with meticulous finale

By the end of March the main components such as the press foot, head and the two rams had arrived in Troyes. The moving in was realised by means of what is known as



a Sefiro (self-propelled industrial scooter) and a lifting frame. "To do this, we drove under the lifting frame with the low loader and the load, so we could lift the load with the lifting frame," explains Nawijn and goes on to describe how the Sefiro then drove under the load instead of the low loader. The lifting frame was then mounted on a rail system in front of the press foundation and driven underneath with the Sefiro. Subsequently, the components were then completed and lifted up again, moved to the installation site by means of a rail system and set down. With the exception of the

press head, this was no great challenge for the experienced fitters. With the 180 tonne press head, however, it did take a little longer due to the installation height of 6.5 metres. "Thanks to the excellent equipment, there was no problem at all," says Nawijn, and so the box of tricks was left at home. Following the rough assembly, the peripheral parts were installed, including the connection of electrical and hydraulic components. The client for the project with crosscompany collaboration was Accuride, a US manufacturer of wheels for the automotive industry.

# Superlative pile driving technology

Currently, the Felbermayr subsidiary Hagn Umwelttechnik is working on sole protection measures at the Wieblingen weir in Heidelberg. In addition to the actual scour protection, a technically enormously demanding test pile driving operation with offshore equipment was also carried out for the planned new-build of the weir system.

lhe Wieblingen am Neckar weir serves as flood protection for the city of Heidelberg in south-west Germany, which has about 160,000 inhabitants. The construction of the barrage was completed in 1929. According to the Heidelberg Waterway Construction Office ("Heidelberg Wasserstraßen-Neubauamt"), the construction of a new-build weir is to begin in about five years due to age-related deficiencies. "In order to be able to prepare a time and cost optimised invitation to tender, extensive test pile driving in the headwater was planned, among other things, in order to be able to determine possible drive-in procedures for the planned sheet pile sections in advance", reports project manager Jörg Hesselink of Hagn Umwelttechnik and continues that "parallel to this, scour protection will also be carried out underwater in order to prevent further washing out and thus safeguard the weir long-term."

### Vibratory pile driver with 24 tonne operating weight

According to the plans of the Heidelberg Waterway Construction Office, work on the test pile driving started in early October. The sheet piling sections provided, which are to be used for the later construction pit, could only be installed with heavy equipment due to the previously explored geology. Such equipment is usually only used off-shore, for example for the construction of port facilities.

As an additional challenge for the new replacement construction, sensitive structural facilities such as the university hospital and residential and office buildings are located in the immediate



vicinity of the construction site. Thus, possible impairments due to noise and vibrations were to be documented in advance in order to be able to adjust the construction measures accordingly if necessary.

"A crawler crane weighing around 215 tonnes was used for the test pile driving on a floating pontoon about 39 metres long and 15 metres wide," Hesselink describes, adding that the crane was equipped with a 50 metre lattice boom.

A particular logistical challenge here was that the construction site could not be approached directly with the appropriate pontoons due to the access possibilities and lock widths. The carrier pontoon for the crawler crane therefore had to be delivered separately in two parts by water and assembled on site. The crawler crane also had to be delivered in parts by water and assembled on site.

During the test, sheet piles of different lengths were first vibrated into the riverbed in three wall sections. The largest profiles were 26 metres long, 1.4 metres wide and weighed around 25 tonnes. These piles were then to be laid 20 metres into the river bed, if possible. Among other things, a 24-tonne vibrating pile driver was used for this. The tests were repeated in two further sections with profiles of 24 and 18 metres in length and a vibratory pile driver with an operating weight of 18 tonnes. In order to also obtain comparative values between vibration technology and the use of a hydraulic breaker, the entire test series was repeated with a 16 and a 26 tonne hydraulic breaker. "In this process, the sheet piles are not driven continuously into the ground as with a vibratory hammer, but sunk into the ground in a controlled manner by the drop weight of the hammer," explains Hesselink.

# **CONSTRUCTION**



### **CONSTRUCTION**

Without prejudging the official results of the German Federal Institute for Hydraulic Engineering ("Bundesanstalt für Wasserbau"), which accompanied the experiment scientifically, it could be stated, however, that all profiles were able to be inserted with the respective equipment and that both the vibrations and the noise pollution were significantly below the expected level.

### **Underwater scour protection**

With a usual flow rate of around 150 cubic metres per second, the approximately 380-kilometre-long Neckar can be described as rather leisurely. During floods, however, the flow rate can be many times higher. Over the years, this has attacked the existing bed reinforcement and resulted in large-scale and up to nine metres deep erosion, a so-called scour, in

the underwater part of the weir. Hesselink adds: "Nowadays, for the new-build of such weirs, what are known as stilling basins made of reinforced concrete or, as after the current renovation, with massive stone fills and sheet pile walls underwater, are standard. These have the purpose of absorbing the energy of the water in order to avoid major underwater washouts". When the Wieblingen weir was built almost 100 years ago, this was also implemented with the means available at the time, but the ravages of time have caused considerable damage. In order to be able to guarantee the stability of the weir system in the future, Hagn Umwelttechnik was commissioned to fill the scour and renovate the area below the weir system. To this end, the existing dilapidated safeguards are now being broken off and then filled with 1.80 metre thick armour stones weighing up to 1,000

kilograms and additionally grouted with underwater concrete in key areas. "This takes place directly below the weir during ongoing operations over an area of about 6,000 square metres," Hesselink explains.

Further down the valley, a sheet pile wall is being constructed six metres deep into the bed of the water. This serves as erosion protection and is carried out over the entire width of the scour protection constructed. These measures to establish the stability of the weir system will take about two years in total. Later on, the new-build of the weir fields is to be continued, taking into account the findings from the test pile driving. Mind you, under running operation. According to the client, the Waterway Construction Office ("Wasserstraßen-Neubauamt") in Heidelberg, another construction period of at least twelve years is estimated.





# Suction excavator assists recovery work after train crash

At the end of October, nine freight wagons loaded with coal derailed at Sankt Valentin station in Upper Austria. In addition to cranes from Felbermayr, a suction excavator from the Felbermayr Environment & Resources Division was also used for the clean-up operation.

t happened on 30 October, shortly before 11 pm, when, for reasons still unknown, nine wagons loaded with coal derailed and partly piled up on top of each other. Due to the load of around 700 cubic metres of coke, the derailed wagons could not be salvaged immediately. First a large part of the load had to be removed. Due to the difficulty of accessing the scene of the accident, the suction excavator of the Environment & Resources Division proved to be the ideal tool.

### **Three-Turbine Technology**

"With the suction excavator we had the advantage over a conventional excavator that we did not have to use the vehicle to get directly to the damaged wagons but could lay a suction pipe", reports Günter Zehetmair from the Environment



& Resources Department. In this case an approximately 50 metre long pipeline was sufficient. However, due to an air flow of 44,000 cubic metres per hour, the suction capacity was still excellent. "This is made possible by a three-turbine

technology," explains Zehetmair and adds that "this suction excavator is also the strongest available in Austria with this technology". However, the concept of the suction excavator proved to have another advantage during the recovery operations. This means that "excavation" and transport can be carried out by using a suction excavator with only one unit. And that with a loading volume of around twelve cubic metres. This is another major advantage, considering the limited space at the scene of the accident.

"We worked 24 hours a day in two shifts. Thus we managed to take about 700 cubic metres of coke to a nearby storage site within a few days, Zehetmair is pleased about the successful use with a unit which is normally used to remove roof gravel or to clear pipes in the ground.

# Heavy special transports for voltage transformers

In mid-April, Felbermayr Schweiz AG took receipt of four transformers on behalf of the Dutch manufacturer, Royal SMIT Transformers B.V., for a Swissgrid transformer station in Switzerland. The transport was multimodal, using water, rail and road. The final step was to lay the foundations.

he starting point for the multimodal heavy transports was a transformer plant in Nijmegen (NL). There, the units, which weigh around 202 tonnes and are 12 metres long, were taken over by the Felbermayr subsidiary Haeger & Schmidt and transported by inland waterway vessel on the Rhine to Basel in Switzerland. The next step was to use the Felbermayr ITB division for international low loader rail transport. In the process, the transformers were loaded into a 20-axle supporting-bill wagon. Each transformer took two nights to complete the approximately 150-kilometre long rail freight journey from Basel to the canton of Valais. The demanding timetable was developed together with the SBB.

### Heavy goods transport by road in "crab steering" mode

After the loaded suspension bridge had been transferred to 2x9-axle road special low loaders using a load distributor, the

so-called "last mile" on the road was mastered, explains Ingo Müller, the project manager responsible for the onward carriage on behalf of Bau-Trans. The equipment used for this, such as the heavy-duty towing vehicle, the auxiliary mobile crane as well as the work platforms and lift trucks, was provided by Bau-Trans AG Liechtenstein. For licensing and traffic reasons, heavy road transport was carried out at night. A critical passage for heavy transport was a bridge over the Rhone, just before the destination. Müller adds: "Including the special vehicle we are achieving a total transport weight of about 400 tonnes. For this reason, the bridge has already been statically recalculated in advance, with the result that we have to cross the bridge using socalled crab steering", which means that the two road low loaders have to pass over both carriageways offset, whereby the load is distributed to both supporting structures as per the static requirements. These crossings required additional substructures

and were monitored and measured by structural engineers. This is one of the reasons why it takes about two and a half hours to cover the five kilometres.

### **Heavy installation in stages**

The final foundation of the voltage transformers in the transformer cells was carried out in two stages due to the recipient's corona safety guidelines. "It is quite remarkable how well the individual Felbermayr divisions work together", concludes Heinz Hunziker, head of Felbermayr Schweiz AG and overall manager of the transport project. He is the one who planned and coordinated the individual company divisions on the rail, road and inland water transport modes as well as "just in time" port transhipment logistics and interlinked them to form a large whole. Ultimately, this logistical service contributes to greater network security in the catchment area of the Chippis/VS substation.



PHOTO: INGO MÜLLER

### **LIFTING TECHNOLOGY**



# **Crane operation for parliament**

Construction work on the general refurbishment of the parliament building in the Austrian capital Vienna has been underway since January 2017. One of the most important construction stages was the creation of the glass roof over the National Assembly Hall. The order for the transport and lifting-in of the substructure required for this was awarded to Felbermayr Transport and Lifting Technology.

he rebuild and renovation work on the historic building on the Ringstraße is scheduled to last until summer 2022. Felbermayr was able to master an essential milestone for this "Project of the Century" last autumn with a logistical tour de force. Four "thrust rings", as they are known, had to be transported to the construction site and then lifted in.

### Large platform for crawler crane

With a length of more than 32 metres, the heaviest of the four thrust rings weighed 43 tonnes. But it was not only the weight of the steel component that challenged the employees. The length was also difficult to handle in downtown Vienna, challenging the truck drivers who transported the steel heavyweights into the city centre at night. "Five-axle low loaders were used as transport vehicles", explains Jan Kürner from the Felbermayr project department. But even more than

the transport - which had to take place at night due to the lack of storage space and traffic obstructions that had to be prevented - the employees demanded that the crane be set up: "All in all, about 60 truck transports are necessary to set up the crane," explains Kürner and adds that "doing just that is very difficult in Vienna city centre". In addition, setting up the crane with a main boom of more than 100 metres in length in the cramped surroundings also posed great difficulties. According to Kürner, the actual crane work was routine by comparison. As is usual in such cases, the crane operator is instructed by a colleague via radio because of the lack of visual contact with the lifting goods. "This meant that the commands of the signaller on the roof also played a major role in the success of the lift," reports Kürner, "because the crane driver must be able to trust him <bli>dlindly>". After about two hours it was done and the first thrust ring was in the correct position, with a radius of about 70 metres, on the roof of the future National Assembly Hall. In



a further three nights, the remaining three components were lifted into position.

This was the basic prerequisite for the construction of the glass roof over the National Assembly Hall. The complete renovation should be completed by 2022.

# Ground-breaking ceremony at Haeger & Schmidt Logistics

The symbolic ground-breaking ceremony for the new building project of the Felbermayr subsidiary Haeger & Schmidt Logistics GmbH (HSL) took place on the Stahlinsel in the port of Duisburg at the beginning of November. A new state-of-the-art warehouse is being constructed on the Nordhafen site. Furthermore, a new office and social building will be constructed on an additionally leased part of the terminal. The new buildings

should be ready for occupancy during the 2nd half of 2021.

n 3rd November, Heiko Brückner and Per Nyström, Managing Directors, Haeger & Schmidt Logistics GmbH (HSL), Björn Becker Manager Division, Logistics), Markus Bangen, Member of the Executive Board, Duisburger Hafen AG and Matthias Palapys, Managing Director, duisport consult GmbH (dpc) met under corona-compliant conditions for the symbolic ground-breaking ceremony. "Unfortunately, the Corona pandemic does not allow for a ground-breaking ceremony, but we are nevertheless starting construction work", said Per Nyström.

### The project in detail

With the expansion of the Stahlinsel ("Steel Island") into a multifunctional hub in Duisburg, HSL is ensuring growth and further consolidating its complex, highly qualified services in the field of

inland water transport and short sea shipping.

The total area of the Stahlinsel was increased to 58,000 square metres by extending the site by 7,200 square metres, which is used, among other things, for a new lorry bay. Part of the open storage and handling areas will now be used for the construction of a new 9,000 square metre heatable hall 210 metres long and 45 metres wide. A 40-tonne crane with a hook height of nine metres is being erected for transshipping. The hall will be equipped with two half-train tracks, each 210 metres long, which can be driven on by lorries. To ensure trimodality in the new hall there will be a weather-protected connection to the existing hall. The storage capacity in the new hall will be 60,000 tonnes and will be temperature-controlled using an innovative, resource-conserving process with underfloor heating. In addition, an

underground lorry bay is being built at the hall in order to enable rapid transhipping and rapid stuffing and stripping of general cargo containers.

A self-handling counter for lorries is to be built at the administration building being constructed at the same time. The new administrative building with 420 square metres of floor space contains staff rooms for industrial employees, waiting rooms for truck drivers and offices for twelve other employees. Once completed, the entire terminal will be connected to the Vohwinkelstraße, which is still being rebuilt, and will provide optimal accessibility by road.

"Changing customer requirements and the expansion of our current storage capacities were the decisive factors for this further investment at the Duisburg location. An additional aspect for us is that we can offer trimodal solutions in the region around Duisburg with the new building. Planning and construction are in the proven hands of duisport, completion is scheduled for 2021", said Heiko Brückner, "this is one of the biggest investments since Haeger & Schmidt was founded".





### **PERSONNEL**



# "ENGINEERED SOLUTIONS" Felbermayr starts a new division

Supported by the areas of crane hire and heavy transport, Felbermayr has already been an important partner for heavy-lift handling when it comes to heavy equipment installation for some time; nearly 2,000 employees have been responsible for previous successes. But even that's not enough. Since October, Felbermayr is now also active in "Engineered Solutions". By doing this, the industrial services provider is expanding its offering considerably within the context of technical solutions for heavy-duty industry.

"Felbermayr possesses powerful equipment in the area of heavy-lift handling," explains the director of the new Engineered Solutions department, Kees Kompier, with conviction. And Kompier, currently 53 years old, should know since he has spent half of his life surrounded by crawler cranes, propulsion systems, and strand jacks in the heavy goods industry. With "Engineered Solutions", the Dutchman has made it is own task to take Felbermayr forward an important step in the area of heavy equipment installation.

# Unique use of head load equipment

"Through the combination of the knowledge of Felbermayr's employees and the existing heavy load equipment, it is my goal to expand the opportunities for use," states Kompier, and he is convinced that this is possible through creativity and the expansion of technical know-how, for example in the area of

statics. Therefore, a departure from classic, by-the-book applications is necessary, and openness to new uses of "Felbermayr First-Class Equipment" is needed, argues Kompier.



As an example, the heavy load expert with worldwide experience describes a project in Bratislava. In this case, a 2,400 tonne bridge suspension work needed to be inserted. "I completed this order at that time while I was still a subcontractor for Felbermayr, because Felbermayr statics know-how for calculating the load distribution between the pontoons was lacking," recalls Kompier and adds that this is precisely the knowledge that needs to be expanded. In this way, it will be possible to offer existing customers a broader range of services. "Ultimately, employers also benefit from a reduction in contact partners and increased efficiency in order completion," concludes Kompier optimistically.

# ACHIEVERS Power of attorney



At the end of September 2020, Rainer Traunwieser was granted power of attorney for the Felbermayr Construction Division. Mr Traunwieser has many years of experience in commercial and industrial construction. He has been employed in the Felbermayr family business since July 2013 and is commercially responsible for the areas of building construction, industrial and power station construction, civil engineering Upper Austria, hydraulic engineering as well as environment & resources. Before his time at Felbermayr, he was the commercial manager of the Linz branch of a German construction group.



Markus Meusburger has been in charge of the transport department for heavy and special transports of the Felbermayr subsidiary Bau-Trans in Lauterach since the beginning of 2020. At the beginning of February, he was granted power of attorney for the company and was also appointed deputy branch manager. Not only the last 14 years at Bau-Trans, but also the experience he grew up with in his parents' transport company make him an experienced and extremely competent manager.

### ANNIVERSARY MANY THANKS TO OUR LONG-SERVING EMPLOYEES

#### 15 YEARS

Markus Boandl - Crane/Graz · Michael Brummer - Installation/Wimmer Sulzemoos Markus Bstieler - Structural and Industrial Engineering and Power Station Construction/Wels · Péter Buchholcz -Transport/Bau-Trans Hungary · Alfons Czihlarz – Fleet/Linz · Thomas Daxelmüller - Crane/Lanzendorf · Ralf Dieckmann - Civil Engineering and Hydraulic Engineering / HAGN Hengersberg · Herbert Eder - Civil Engineering and Hydraulic Engineering/ HAGN Sulzemoos · Erwin Eder - Crane/ Graz · Claudia Eidenberger – Administration/ Wels · Otto Eschlböck - Workshop/Wels · Roland Füreder - Heavy Transport/Wels · Gerhard Gall - Crane/Lanzendorf · Hubert Globotschnig - Crane/Klagenfurt · Jürgen Gröger – Crane/Bautzen · Kristián Halász – Platforms/Bratislava · Ervín Juck - Crane/ Bratislava · Tibor Juhász - Workshop/Bau-Trans Hungary · Zsolt Kalmár – Transport/ Bau-Trans Hungary · Dragoslav Keric In-Situ Transport/Lanzendorf · Johann Köhldorfer – Crane/Lanzendorf · Andreas Kollant - Workshop/Graz · Wolfgang Korch - Crane/Bautzen · Lajos Kovács – Transport/ Bau-Trans Hungary · Wilhelm Kronberger - Project/Wels · Stephan Loibl - Civil Engineering/HAGN Sulzemoos Péter Meretei - Transport/Bau-Trans Hungary · Hansjörg Ortler - FST Stams · György Pesel - Transport/Bau-Trans Hungary Adam Pichler - FST Stams · Wolfgang Pucher - Structural/Industrial Engineering and Power Station Construction/Wels Boris Pusnik - Crane/Graz · Pavol Rebetak - Crane/Lanzendorf · Sabine Ruttmann -

Crane/Lanzendorf Josef Salmer – Crane/ Lanzendorf · Peter Schiebler – Civil and Hydraulic Engineering/HAGN Hengersberg · Jozef Solčiansky – Crane/Bratislava · Roman Tutko – Crane/Košice · Dusko Zecevic – Crane/Lanzendorf · Vahid Zehic -Waste Management/Wels

#### 20 YEARS

Harald Achenrainer - Transport/Bau-Trans Lauterach · Karl-Heinz Berghuber - Crane/ Linz · Reiko Beuschold - Installation/ Krefeld · Andreas Blechinger – Installation Management/Wimmer Sulzemoos Giuseppe Bongiovanni - Caretaker/Krefeld Christine Feyerlein - Administration/ Nürnberg · Harald Gruber - MTA/Wels · Viktor Haderer - Heavy Transport/Wels · Günter Hapt – H<mark>eav</mark>y Tran<mark>sport/W</mark>els · Ursula Huna - Administration/Lanzendorf Josef Kalemba - Montage/Transport/ Krefeld · Sven Kitze - Civil and Hydraulic Engineering/HAGN Sulzemoos · Kreuzmayr - Workshop/Wels · Alexander Schellerer - Heavy Transport/Wels · Gerhart Stadler - Heavy Transport/Wels · Alessandro Stradiotto - Branch Management/Venice · Sándor Szél – Transport/Bau-Trans Hungary Jan-Simon Tyca - Intermodal/Haeger & Schmidt Duisburg

### 25 YEARS

Alois Dengg – Crane/Graz Ljubisa Dimitrijevic – Crane/Lanzendorf Andreas Förster – Installation Management/ Wimmer Sulzemoos André Hoffmann – Branch Management/Haeger & Schmidt Andernach Heike Hörtenhuemer – Heavy Transport/Wels · Mehmed Komic - Structural and Industrial Engineering and Power Station Construction/Wels · Jutta Kronschnabl - MTA/HAGN Sulzemoos · Robin Meier - Installation Management/ Wimmer Sulzemoos · Thomas Pamminger - Heavy Transport/Wels · Gerhard Ringer - Civil Engineering/Wels · Sabine Rudolph - Customer Service/Haeger & Schmidt Duisburg · Peter Sattler - Crane/Klagenfurt· Robert Schauer - MTA/Wels · Robert Stieger - General Cargo/Wels · Josef Teubl - Project/Wels · Johann Trink - MTA/Wels · Gerhard Uitz - Crane/Lanzendorf · Manfred Unterberger - Port Handling/Linz

#### 30 YEARS

Kadir Alaca – Port Logistics/Haeger & Schmidt Duisburg · Andreas Hintringer – Heavy Transport/Wels · Andreas Hüttmayr – MTA/Wels · Franz Jungwirth – General Cargo/Wels · Dietmar Mörigsbauer – Heavy Transport/Wels · Bernhard Radler – Civil Engineering/Wels · Friedrich Tempelmayr – General Cargo/Wels · Angelika Wiebus – Administration/Haeger & Schmidt Logistics Duisburg

### 35 YEARS

Reinhold Bredl – Surveying/HAGN Sulzemoos · Karin Jäger – Civil Engineering/ Wels · Jürgen Steiner – IT/Bau-Trans Lauterach

### **40 YEARS**

Max Ertl – Civil and Hydraulic Engineering/ HAGN Hengersberg · Michael Mayrhofer – Crane/Linz

# RETIREMENTS Entering a well-earned retirement

Many thanks and recognition due to each of our colleagues who will shortly be retiring.

Arthur Adelff – Crane/Wels · Bajro Alekic – Structural Engineering/Wels · Martin Bogner – Civil Engineering/Wels · Markus Eder – Heavy Transport/Wels · Uwe Eifrig – Installation/Wimmer Sulzemoos · Helmut Eigner – Procurement/IS Baubetrieb · Reinhard Girnuweit – Transport/Wimmer Sulzemoos · Karl Graml – General Cargo/

Wels Franz Hagspiel – Transport/Bau-Trans
Lauterach Matthias Hartl – Transport/
Lanzendorf Manfred Hintermeier – Kran/
Lanzendorf Klaus Hoffmann – Workshop/
Wels Anita Hummer – Payroll Accounting/
Wels Nedyalko Ivanov Ivanov – Crane/
Haskovo Hubert Kohler Jodok –
Transport/Lauterach Wolfgang Karsch –
Earthwork, Hydraulic Engineering/Reinhold
Meister Hengersberg Nikodem Kern –
Hydraulic Engineering/Linz Gerd Kissner
– Earthwork, Hydraulic Engineering/HAGN
Sulzemoos Michael Koller – Crane/Thaur
Prvoslav Kostadinov – Heavy Transport/
Wels Gerhard Lang – Structural and

Civil Engineering/Linz · Margit Pfeufer -Accounting/Wels · Anton Radosek - In-Situ Transport/Lanzendorf · Helmut Raschig Earthwork/Hydraulic Engineering/ Reinhold Meister Hengersberg · Katharina Rohrhofer - Crane/Lanzendorf · Josef Roland - Site Management/IS Baubetrieb Michael Schropp - Earthwork/Hydraulic Engineering/HAGN Sulzemoos · Seraphine Stöllnberger – Plumbing/IS Baubetrieb Hartmut Tobias - Crane/Bautzen · Norbert Weishäupl - Fleet/Linz · Christine Wiesleitner - Administration/Wels - Josef Wirtl - Carpentry/Linz · Erwin Wögerer -Administration/Wels

### **SPONSORING**



Because of Corona, it meant only two voices could sing "Happy Birthday" to company boss Horst Felbermayr on his birthday. According to well-informed circles, however, this was also better, at least to his ears.

### READ AND WIN 15 non-cash prizes await you

### **Prize question:**

What birthday did company boss Horst Felbermayr celebrate recently?

For the correct answer read page ten carefully, divide the number of specified components that were transported to Tiszaújváros northeast of Budapest by two.

Please send in the right answer, quoting your postal address, to us by email informer@felbermayr.cc or fax: +43 7242 695-144 to us. The deadline for entry is 31st March 2021. All decisions are final and not subject to legal appeal.

1st prize: A LR 1300 scale 1: 50.



### SPONSORING Short racing season due to Corona well used

After the Felbermayr Simplon Wels team had shown off their skills at the Tour of Antalya in February 2020 with top placings and victory in the crowning stage by Riccardo Zoidl, all major cycle races in Austria and abroad had to be cancelled due to Corona. It was not until July that it was again possible to hold cycle races under strict safety regulations.

Nevertheless, the professional cycling team made the best of the situation and

trained intensively. During the lockdown, the drivers were active in the e-cycling league, successfully contested numerous individual time trials and when road races were possible again, Filippo Fortin at the International Braunau Cycling Days and Riccardo Zoidl at the big International Cycling Race in Königswiesen were able to achieve important victories for the Felbermayr Express. This year, the team spent a total of 35 days racing. In the process, they achieved 7 wins and 22 podium places.



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