

INFORMER

THE FELBERMAYR GROUP MAGAZINE, 1/2019

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STATION BUILT

REFINED

TIPPING DEVICE IN USE AT A
CRUDE OIL REFINERY

REAL STRENGTH

AUSTRIA'S TOUGHEST
ROCKFALL PROTECTION

PHOTO: MARKUS LACKNER





Dear Ladies and Gentlemen,

Empathy is the cornerstone of every successful relationship. This kind of sensitivity is also a requirement for success between commerce and politics; on the one hand, to maintain the interests of the people via politics, and to create a regulatory framework for fair competition among market participants on the other. And we're satisfied with this, since this has recently been incredibly successful. With regard to Austria, one positive aspect that must be mentioned is flexible working time within the context of possible twelve-hour days and relief from non-wage labour costs.

However, topics like extensive tax reforms and an urgently necessary reduction in bureaucracy have not progressed; not only in Austria, but in many other European countries, as well. This is made apparent by the approval period for heavy transport. In Germany, it can take up to eight weeks for the wheels to get rolling, since the introduction of a well-intentioned administrative regulation. In Austria, on the other hand, this only takes around three weeks, after an official process entered into force several years ago. This shows the positive effects of a commitment to reform, and it should serve as an example of efficient reduction of bureaucracy.

This gives the economy a chance to develop effectively. And that's how things should continue, because it's also an important goal to become a magnet for companies that are willing to invest; this ensures employment and prosperity in Austria, in our neighbouring countries, and hopefully across all of Europe and beyond.

On this note, we wish you and your family a wonderful remaining summer, as well as a nice vacation and enjoyment in your work, hopefully with increasingly flexible processes that are free of bureaucratic obstacles.

DI Horst Felbermayr

Warm regards,

Horst Felbermayr

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TITLE PHOTO Heavy work for wheat starch factory

Heavy transports as well as lattice boom and mobile cranes were required within the course of the expansion of a wheat starch factory in the Lower Austrian town of Pischelsdorf in February. Felbermayr provided four cranes with a maximum load-bearing capacity of up to 750 tonnes for the transshipping of two 136 tonne falling film evaporators and their installation on their foundations along with two 40 tonne separators with a length of a little over ten metres. After the arrival of the first of the two 30 metre long and 5.1 metre high falling film evaporators beside its newly erected foundation, it was first unloaded and then set down on the ground with the help of two cranes that were already in place. This was done together with a total of five transport saddles with which it arrived on the barge. A lattice boom and a telescopic crane were used for this. The 30 metre long container had to be rotated from horizontal to vertical in order to be set down on the foundations. The transport within the company site was carried out with a 13-axe trailer with vessel bed.



WORLD PREMIÈRE Hagn Umwelttechnik builds first shaft hydropower station

Hagn Umwelttechnik are building a hydro-power station based on the concept from Munich's technical university in the Bavarian municipality of Großweil on the Loisach River. Here the turbines are not mounted vertically as normal but rather horizontally. In doing so, the turbines and generator form a single unit and are installed in a shaft. The drive water comes from above, with the flotsam removed by a grate system. Because the River Loisach is fed by several mountain streams, the

risk of flood water was a constant danger with the construction work. The excavation was also a peculiarity. 16 m long, single-layer, back-anchored, sheet pile walls were used for this. The majority of the building work was concluded in May after approximately one year of construction time. The customer for the pilot project was Kraftwerk Großweil GmbH, comprising the shareholders of the Garmisch municipal utilities, Farchant power station and the Großweil municipality.

BAU-TRANS Dual transport for chemical group

At the start of the year, Bau-Trans Hungary carried out the transport of two industrial columns weighing 128 and 102 tonnes respectively. The containers were transported in convoy and had a diameter of more than four metres with lengths of approx. 29 and 30 metres. The transport

was from Budapest (HU) to a chemical company in the town of Kazincbarcika, approximately 200 kilometres to the north-east. 14-axe low loaders were used for the heavy transport. The installation on the foundations was carried out at the start of July in a tandem lift with two

truck-mounted cranes. The "preliminary run" from Genk (B) to Budapest was carried out by the inland water navigation company Haeger & Schmidt Logistics. The transshipping in Budapest port was carried out as a tandem lift with two mobile cranes.





LIFT OFF! Crane use for chip factory

Since October of last year, cranes from the Felbermayr branch in Kamenz have been in use with the construction of a chip factory in Dresden. For the installation of 16 approx. 80 tonne steel trusses at a height of 30 metres, the workers had to get creative – two LTM 1100s were lifted onto the already existing 15 metre high concrete ceiling with the help of an LTM 1500 from Liebherr.

This was necessary because it was not possible to use a large crane on ground level due to space constraints. For this lift, the 500 tonne crane was ballasted with 135 tonnes and equipped with a 28 metre long luffing fly jib. This provided a working radius of

24 metres. The construction work will last until the end of this year. The chip factory should start operations in the spring of 2020.



WASTE MANAGEMENT 2000 tonnes of waste properly recycled

159 residential units are currently being revitalised in Linz-Bindermichel in Upper Austria. The waste management concept for this is being effected by Felbermayr's environment & resources division. To date, more than 1500 tonnes of waste of every quality have arisen with this. To be precise, this is around 600 tonnes of sorted building site rubble and demolished concrete. This will be processed and recycled in the company's own recycling plant WBR (Welser Baustoffrecycling GmbH). Waste such as asbestos cement, gypsum and contaminated building site rubble will be disposed of at the Wels Nord landfill site owned by Felbermayr Bau GmbH & Co KG. A further 500 tonnes of waste is expected up to the end of the construction at the end of the year.

POWER PACK Haeger & Schmidt commission their new heavy goods barge

Thanks to its special shape, the heavy goods barge, named Fortitudo, has a shallow draught of around two metres even with 300 tonnes of load. This makes the 39 metre long and five metre wide ship unique and already one of the most sought-after methods of transport, particularly in France with its small canals and countless locks. Because, the heavy goods barge can accept loads and transport them directly through the internal waterways where otherwise a huge detour would have to be made to ship such loads around France on the Atlantic. Potential Fortitudo loads could include transformers, containers, rotors or even locomotives, for example.





HOSPITABLE Assembly meeting at Wimmer Maschinen- transporte

For the second time already, the Felbermayr subsidiary company Wimmer Maschinentransporte hosted an assembly meeting in Sulzemoos in Bavaria. At the start of the year, around 40 lead managers attended in order to further develop their expertise but also to consolidate their personal relationships with their colleagues. Because, according to the host Mr Stegmann, the focus should often not only be on technology but rather on the specialisation of the respective employees – because, for each person to be able to master everything is simply not possible in the complex field of assembly. So, in addition to the use of standard equipment such as lifting frames, strand jacks and skidways, the relocation of a production line also requires comprehensive skill in areas such as electrics, hydraulics and pneumatics", and Wimmer could provide these, for example, in order to be able to offer the customer a full-service package.



Managing Director Holger Stegmann moderated the meeting.

INVESTMENT 400 new rental machines

With the latest equipment and just a few years old, Felbermayr's cranes, platforms and lift truck leasing now boasts a few thousand machines. In order to maintain this position in the future, around 400 new machines were acquired this year. This also includes telescopic platforms with 43 metre working heights as well as electric forklifts with up to seven tonnes of lifting capacity and a "Pick-and-Carry" crane specially designed for use in industrial halls. This machine has a maximum payload of over 25 tonnes and can also transport its loads in the tightest of spaces thanks to its compact dimensions and flexible steering. There are 38 new mobile cranes ready for rental in the crane hire area, and the fleet at the Graz branch has also been expanded with a 450 tonne crane.



Taking great pleasure in their work, the newly formed department introduced themselves under the management of Florian Katzinger (first from the left) with dispatcher Gudrun Felbermayr and field service colleague Robert Mittermayr.

WELS PLATFORM DEPARTMENT New site for closer proximity to the customers

The Wels platform department has been active as a subsidiary branch office of the Linz main branch since the spring of 2018 and has functioned as a discrete department in Wels since July 2019. Already over 100 lifting platforms and lift trucks have been permanently stationed in this department and cover a broad range of secure application opportunities in the region around Wels. "Each customer is important to us – regardless of whether they are

a painting operation or an industrial construction site", states departmental manager Florian Katzinger, explaining: "Each customer should feel well-supported by us."

"And, of course, they must also be able to take pleasure in their work", remarks Mr Katzinger: "Because this has a positive effect in many different regards and provides motivation, sometimes making the seemingly impossible possible."

CRANE HIRE
Steelwork for blank continuous casting plant

Cranes and platforms from the Felbermayr branch in Graz will be in use with the construction of the steelwork for a blank continuous casting plant in Donawitz until the end of September. At 71 tonnes apiece, the most difficult components to lift were the crane tracks and the crane gantry. These were lifted into place with a 500 tonne crane. In addition to this, a 450 tonne crane as well as smaller cranes and



platforms with working heights of up to 57 metres were busy with the mounting work on the construction site. The associated heavy transport and abnormal load transport was carried out by

the Felbermayr subsidiary firm Bau-Trans. The plant installed on behalf of voestalpine is being constructed in Donawitz and will be the most modern of its type in the world when it opens at the end of the year.



STRUCTURAL ENGINEERING
Hall extension for logistics company

At the beginning of the year, Felbermayr structural engineering started with the preliminary work for a 1400 square metre hall extension for a logistics company in Wels. First was the dismantling work. After that, the earthworks and the foundation work as well as the establishment of a monolithic hall floor for the 1400 square

metre extension. The actual property was created as a steel-reinforced concrete skeleton construction. In addition to this, various conversions tasks were also carried out in the existing halls. This included the erection of a fire-protection wall as well as a server room. The outdoor facilities will be constructed by Felbermayr

civil engineering and are anticipated to be completed by the middle of September. These include the establishment of a loading zone with around 900 square metres, a drainage system with 130 linear metres of heavy-duty channels for HGV operation and the interconnecting asphaltting works.

PHOTOS: ALBERT ZABERN, ANTON HOLZSCHUSTER (2)



PLATFORM RENTAL

Panel installation with rope work platform

For the erection of a high-bay warehouse over 40 metres in height in Wels earlier in the spring of this year, more than 20 platforms and lift trucks were simultaneously

gathered on the construction site for the installation of the façade panels, along with a rope platform with a 50 metre vertical range of use. Further work was carried out for the

installation of the rack system using special electrical scissors lifts. With a working height of 33 metres, these were some of the highest of their class in the world.



SPECIALISED CIVIL ENGINEERING

Raising the sealing height on the Inn canal

The Felbermayr subsidiary Hagn Umwelt-technik is currently involved in a joint venture for sealing work to increase the maximum water level on the Inn canal in Upper Bavaria. The sprayed concrete works required for this will be carried out by Felbermayr specialised

civil engineering. The construction project is necessary because of a planned increase in the maximum water level at the Töging power station. This work will be carried out along 40 kilometres of the banks and will take until the end of the year.

LOOKING FORWARD

Avalanche protection for Grossglockner High Alpine Road

Even whilst the clearing work was being carried out in the spring, hazardous situations arose time and again on the Grossglockner High Alpine Road due to falling snow slabs and avalanches. Felbermayr specialised civil engineering was commissioned with the erection of 350 metres of snow bridges in order to contain this risk. The construction site near the Hochtör Pass lies at an altitude of 2700 metres above sea level. The approximately 50 degree slope of the terrain required the use of a helicopter for the installation of the snow bridges, with each structural component weighing up to 1600 kilograms and 4.5 metres in height. The main structural components were anchored into the rock with two 4.5 metre long tensile and compressive load anchors each. The first five rows had already been constructed in the autumn of last year. The remaining rows should be installed this summer.





Tipping device for industrial columns in use

Felbermayr were busy this spring with the heavy transport and foundation work for an industrial column more than 50 metres in length. The setting for the action – with tipping device, crawler crane and self-propelled modular transporter – was a refinery in Rijeka.

After around 40 years of use, the approximately 50 metre high, or rather long, container reached its final destination at the Croatian oil refinery. This column was removed within the course of the planned "Shutdown". Felbermayr's transport and lifting technology was used for the internal site transportation and subsequent foundation setting for the new structure. Felbermayr's part in the operation lasted around four weeks and was completed at the beginning of March.

Heavy work for heavy transport

The starting point for the steel colossus, with a length of around 51 metres and an initial diameter of around seven metres, was Ortona in Italy. From there it was transported across the Adriatic to the refinery in Rijeka by means of a flat-deck pontoon. "We picked up the column there with a self-propelled modular transporter", says Peter Niedermair-Auer from the Felbermayr project department, explaining further: "To do so, we

drove onto the pontoon with the transport vehicle and loaded the column there mounted on the 'elephant feet'." This was done with two parallel-coupled self-propelled modular transporters each with ten axles, with turntable and power pack for the drive. This vehicle combination was necessary because of the defined axle loads to be transferred into the ground as well as the tight curve radii which had to be overcome. For example, the first section included an S-bend with two ninety degree bends.

"A road with slope stabilisation was built specifically for the heavy transport. Otherwise, the transport would not have been possible due to the steep geometry dropping away to the sea", says Niedermair-Auer describing one of the numerous key points of the internal site transport. A great deal of time was also required for driving over the many flyovers, which were necessary due to underground pipelines. Temporary bridges were erected for this in order to transfer the loads arising into ground before and after the endangered points. As a result, it took two days to cover the first section and reach the so-called "Pre-dressing area". There the column was set down on "elephant feet" in order to enable attachment parts, for platforms for example, to be fitted. This process took around six weeks. At the end of this, the weight of the column had increased by around 35 tonnes to 300 tonnes.

In the meantime, the crane was constructed at the destination – an LR 1750 from the manufacturer Liebherr, with a 77 metre long lattice mast, derrick boom and a total of 590 tonnes of ballast. A further day was required to transport the column the remaining three hundred metres to



the foundation. In addition, a few flyovers had to be constructed in order to comply with the static requirements.

As was already the case with the whole internal site transport, the foundation erection was also very tight for space and the limited window of time for the transport

on the company site presented particular challenges. Peter Niedermair-Auer explains: "Because the project was carried out within the course of large-scale maintenance work, we could only transport our equipment after prior notification and even then only in very short windows of time."



Furthermore, hundreds of employees from other companies were also busy on the site. This meant that special measures were required with regard to industrial safety in order to minimise the potential for danger.

Grand finale with tipping device

The tipping device comprises two parts. The upper part had already been mounted on the support skirt of the column at the "Pre-dressing area".

However, due to the parallel-mounted axles, the transport still reached a width of 5.5 metres. This was too much to be able to mount the bottom section in the usual manner. As a result, the lower section had to be widened in order to be able to mount it on the self-propelled modular transporter. Peter Niedermair-Auer explains: "Calculations had been carried out by a structural engineer in advance

for this. Our colleague Manfred Unterberger was then responsible for the implementation of the knowledge obtained from this. "This guaranteed that the tipping device, which was designed for 600 tonnes, fulfilled the static requirements.

Thus prepared, the self-propelled modular transporter then drove the last 300 metres with the column to the foundation where it was positioned in front of the crane. Then the column was set down hydraulically, supported underneath the end furthest from the crane on 'elephant feet'. The other end remained on the self-propelled modular transporter. Now the self-propelled modular transporter could be driven out and the turntable replaced by the lower part of the tipping frame. Then it was driven under the container once again. Now the other end of the column was attached to the hook




Together with Jan Kürner (leader of crane operations) and Branko Borcic (Felbermayr Croatia), Peter Niedermair-Auer from the Felbermayr project team was a major contributor to the success of the project.



block of the crane. This completed the preparations for the lift and the grand finale could begin. To do so, the crane started slowly to lift the upper end of the 300 tonne load. The self-propelled modular transporter continuously chased it and thus the column was brought from horizontal to vertical in around two hours. This required concentrated cooperation between the SPMT drive and the crane driver as well as the two banksmen. Particular sensitivity was then required of the crane driver for the final lifting in, explains Niedermair-Auer: After turning the boom with the suspended load through approx. 45 degrees horizontally, they had to "thread in" the approximately 300 tonne steel colossus with millimetre accuracy in order to be able feed it in and mount it into the existing steel structure.

Finally, a laser measurement determined that the 51 metre high tower was just a few centimetres off true. This was very clearly within the required tolerances. Since it has similar dimensions to the most famous leaning building in the world, it is interesting to mention the Leaning Tower of Pisa here. At a height of 51 metres this has an offset of four metres from the vertical. The Italian polymath Galileo Galilei would certainly have been impressed with the precision achieved in the construction of the foundations, but would have been disappointed to be unable to carry out his drop test experiments.

PHOTOS: MARKUS LACKNER, PETER NIEDERMAIR-AUER



Frequent freezing and thawing cycles lead to hazardous rockfalls and make the erection of a rockfall protection system necessary.

Rockfall protection

For two years, Felbermayr specialised civil engineering has been involved periodically with rock stabilisation on the Danube cycle path at Haibach ob der Donau. The work was completed at the beginning of March.

Around 600,000 cyclists cover the Danube cycle path each year between Passau and Vienna. The Schlögener loops are a particular natural phenomenon on this section. Not far from here there was a large-scale rockfall for the first time in the winter of 2018. "Around 200 tonnes of rock fell at that time", reports construction manager Andreas Brunner from Felbermayr specialised civil engineering, explaining that the volume equates to approx. 20 truck loads. Because of the great importance of the Danube cycle path, it was clear that it would have to be made safe again before the start of the new season in the spring.

Austria's toughest rockfall protection

"We started with the work as soon as the investigation by a regional geological consultant was completed and the contract was awarded", says Mr Brunner, because time was tight and a fence able to withstand 5000 kilojoules had to be constructed within a period of around four weeks. "This represents roughly the mass of a heavy haulage tractor - 15 tonnes, racing into the fence at 90 kilometres per hour", explains Mr Brunner convincingly,

adding that he does not know of a tougher system anywhere in Austria.

Rock clearing work was undertaken before the start of the fence manufacturing. In doing so, loose stone was brought down so that it would not endanger the subsequent work. A helicopter was used for this due to the difficulty of the terrain and the fact that the fence had to be erected around 150 metres above the cycle path. This was used to fly the materials up the 70 degree slope. "This included light boom drilling rigs for drilling the bore holes for the anchors" explained Mr Brunner. Around 50 bore holes were made with these and 400 linear metres of anchors installed for the 42 metre long fence. The fence was six metres high and comprised four supports that were mounted on anchored foundations. The work was completed by the end of April. This also averted the danger enough that the cycle path could be opened again through the summer. In November a further fence rated at 3000 kilojoules was erected underneath the 5000 kilojoule one. However, this one is significantly longer at 100 metres, but is only five metres high. 800 linear metres of anchors and ten supports were installed for this. The working conditions were difficult here

too. "However, because this fence was to be erected just twenty metres or so above the cycle path, the bore holes were created with a loading crane equipped with a drill carriage", explains Mr Brunner. A walking excavator was also used for this and for lifting in the required materials.

A third fence, likewise a hundred metres long, but with just 2000 kilojoules of energy absorption capability was then erected in February of 2019 – approx. 50 metres upstream of the other two. This was not originally planned but became necessary as a result of a new rockfall in the January. In addition to the rockfall protection, blasting was also carried out as a preventative measure to address rock areas that were in danger of falling.

On the question of whether there could be rock falls during the cycling season too, Mr Brunner answers: "Rockfalls certainly can't be ruled out in the summer. They can be caused by heavy rains, for example." For this reason, falling rocks are not restricted only to the cold season. In addition, in Alpine areas their hazard can never be one hundred percent ruled out, but it is possible to minimise them using state of the art technology, affirms Mr Brunner. ■





IMPRESSIVE

Felbermayr specialised civil engineering erected the toughest rockfall protection in Austria to safeguard the Danube cycle path at Haibach, Upper Austria. For comparison, with a force absorption capacity of 5000 kilojoules, the stone protection system could catch a 15 tonne HGV travelling at 90 kilometres per hour.

The measures were necessary due to frost shattering caused by frequent changes in temperature.

Power station construction on the River Traun

After around two years of building time, the work on the erection of the replacement construction of the Traunleiten power station near Wels entered the home straight. At the start of the coming year, the power station erected by Felbermayr technical civil engineering as part of a joint venture, should be incorporated into the grid, producing 90 gigawatt hours of green electricity per year.



The construction pit for the power station was surrounded by bored piles.

Since 1899, electricity has been produced in the Upper Austrian town of Traunleiten near Wels. Despite continuous modernisations in the plant equipment and ecological measures, new investment was no longer economically viable according to its operator Wels Strom. For this reason, after the conclusion of several years of approvals process, the go-ahead was given for a major investment and thus the replacement construction of the run-of-the-river hydrostation.

Largest power station project in Austria

"The construction site started in July 2017 with the preparatory works and the setting up of the construction site facilities", says construction manager Sebastian Holasek from Felbermayr technical civil engineering regarding the power station construction site, currently the largest in Austria. After that, the construction site was drained on both the upstream and downstream side with coffer dams. These were created with crushed stone, armour stone and in some cases also with sheet pile walls. In October, the initial excavation in the area of the new power station was started along with the demolition and earthworks for the new inlet structure of the water channel. The inlet structure now comprises three chutes in order to be able to guarantee the flow of 150 cubic metres per hour. In order to assure this desired flow rate, the maximum water level had to be raised by 20 centimetres for the approximately two kilometre long propulsion water channel. This resulted in an increase in the height of the associated dams as well as in increase in the channel profile. In addition, the gravel flushing sluice and parts of the channel base and embankments had to be sealed. The weir system was also renewed. This comprises two weir gates with a total length of 95 metres.

The power station itself comprises the grate structure, the power house and an idle channel. "In the power house there are two horizontal Kaplan turbines, which can generate around 90 gigawatts of power each year and thus can supply a city such as Wels with power", explains Mr Holasek, adding that this represents almost double the installed power rating. The construction pit for the power house has been secured by means of bore piles, sprayed concrete and strand anchors.



Sebastian Holasek was responsible for Felbermayr's site management.

The drop height of the two inlet structures is 13.9 metres.

"The power house has a length of 84 metres, a width of 23 metres, a height of 32.5 metres and a drop height of 13.9 metres", says Mr Holasek citing the impressive dimensions. As if that was not enough, with a length of 70 metres, the grate system is also worth mentioning as it is the longest in Europe.

Ecological responsibility

In addition to the optimisation of the technical parameters, Wels Strom also places great importance on the further optimisation of ecological aspects. So, according to Wels Strom's managing

director Friedrich Pöttinger, investment has been made in a modern fish ladder system in order to achieve better ecological passage. In addition, a 350 metre long resting area and spawning zone for water organisms has been erected above the weir at the head of the reservoir. Furthermore, a nesting mound has been created on the power station site, which is located inside the "Natura-2000" network and the "European bird protection area" and the tree stock has also been approximately doubled too. So, people and the environment both benefit equally from the replacement construction and this benefit will last through several generations.

The base of the driving water channel was clad with sealing asphalt.



Sewer refurbishment using short pipe relining

Felbermayr used what is called “short pipe relining” to refurbish a sewer in Graz during March. This process enabled a section of sewer approximately 600 m long to be refurbished extremely quickly, cheaply and with almost no excavation.

Graz, population 300,000, is Austria's second largest city. A city this size needs its infrastructure. This includes an intact sewer network. So that this remains the case also in the future, work is ongoing at present to refurbish the sewer in the Kossgasse - over 100 years of use has resulted in defects such as cracks and leaks caused by age. The client for this refurbishment is the Graz City Water Utility (Holding Graz Wasserversorgung). The project's planner is Zivilingenieurbüro Lugitsch und Partner who were also responsible for putting the job out to tender.

“The sewer is about eight metres deep and had to be refurbished along a length of about 600 metres”, explained departmental manager Michael Walzel. As a certified sewer refurbishment consultant, Walzel is also aware that because of the great depth of the sewer, excavation for the replacement of the sewer would have been associated with huge costs. In addition,

traffic would have had to be diverted for a long period because of the excavations. Residents and businesses along the street would also have been forced to put up with enormous dust and noise emissions.

Low-cost sewer refurbishment

What is called “short pipe relining” was found to be the solution. “What this process does is, we might say, is to construct a new sewer inside the old one” explained Walzel, and added that this method of refurbishment involving very little excavation creates the same serviceable life as the construction of a new sewer. Short pipes, a quality product “made in Austria” by Duroton Polyquarz in Leopoldsdorf was used for the refurbishment. These egg-shaped pipes are made from polymer concrete and are only marginally smaller than the old sewer. “The result is that the reduction of the cross section is as small

as possible and the flow volume is maintained at almost the same level” stated Walzel. The pipes were lowered into the sewer down an access shaft, after which they were pulled into the old sewer on special skids using a cable winch. Pipes discharging into the sewer were immediately connected with the new profile. “The last process was to infill the circular gap between the old and the new sewer in order to ensure the long-term positional stability of the new sewer”, Walzel explained. A special high-strength cement with good flow characteristics was used for this purpose.

The greatly reduced need for excavations during the refurbishment meant that it was possible to reduce the construction period by a significant margin. A further point was that this also meant that the restrictions placed on traffic as well as residents and businesses located along the street were reduced to a minimum. ■



Short pipe relining is a cheap form of sewer construction.



Ship salvage in Romania

At the start of March, Felbermayr hydraulic engineering was called to a ship salvage in Romania. The "F 131" multipurpose barge with attached crane was used here.

With more than 150 floating units, Felbermayr hydraulic engineering is ideally equipped for operations throughout Europe's inland waterways. In addition to dredging work, platform construction and revetment installation, technical equipment operations are also a permanent part of the nautical team's repertoire. Certainly when it comes to situations where there is not even space for the proverbial hand's width of water under the keel, Felbermayr is very much in demand. This is what happened with the ship salvage on the Danube in Romania.

Bridge piers driven into place

"The accident happened not far from the Romanian town of Giurgiu on the Danube", says Hans Wolfsteiner, divisional manager for Felbermayr hydraulic engineering. A barge struck a bridge pier. In consequence the steel coils loaded on the barge shifted causing the ship to list to one side, threatening to capsize it. The barge could only just be removed from the shipping channel

and secured against the bank. However, sailing it further into the harbour at Giurgiu was out of the question.

Salvage operation with multipurpose barge

"We were called to help as we had the ideal vessel for such operations with the "F 131" multipurpose barge, reports Mr Wolfsteiner. This multipurpose barge was specially designed for lifting work and salvage tasks on water. The mobile mounted crane can manage payloads up to 200 tonnes, and bilge pumps with a pumping capacity totalling 96,000 litres per minute and a jack capable of handling loads up to 396 tonnes complete the package. Thus, Felbermayr is probably the only company able to right this type of load in the current without a huge amount of preparatory work.

Less ideal was the distance to the site of the accident as the F 131 was in Linz at the time of the accident. As a result, some 1600 kilometres of river had to be covered to reach the site of the accident. "Nonetheless, we managed to be on-site

within a week", says Mr Wolfsteiner, delighted with the quick action of his workers. The salvage work proceeded quickly: "The F131 was secured to the side of the stricken barge. Then a portion of the total of 40 steel coils, weighing 35 tonnes each, was transshipped with the ship's crane into the cargo hold of the F 135 in order to be able to right the stricken vessel again", explains Mr Wolfsteiner. Last but not least, the remaining coils were transshipped back into the barge's hold. All of this was done in just one day.

The return journey was not so good. "Due to the flood water and a strong counter-current, we needed around two weeks of travel time to reach the next deployment location in Vienna", says Mr Wolfsteiner. Arriving there we were then busy sinking pile moorings into the base of the river for a mooring station. The lattice boom crane was also ideal for this task, just as the cable excavator was for the dredging – the F 131, a multifunctional, multipurpose barge that does great credit to this class. ■

Shortage of space called for a technically challenging solution for rotating and then lifting the roll stands which were about ten metres high.



Heavy haulage and installation for a cold levelling machine

In the middle of April Felbermayr Schwermontage was called upon for the heavy haulage of two cold levelling machines and positioning them on their foundations. All this took place at the voestalpine Cold Rolling Mill in Linz.

A self-propelled transporter, a lifting frame and a mobile crane as well as forklift trucks and work platforms were used to transport and position the two roll stands, each weighing 130 tonnes, on their foundations. But this was only possible through the know-how of all the companies and their staff involved in this operation. "Planning for this project started about a year ago", stated Herbert Gruber who works for Felbermayr in Linz, illustrating the large amount of time devoted to this project.

Self-propelled transporter with a six metre transport width

A six-axle self-propelled transporter was used for moving the stands inside the steel mill. This was needed to provide the stands measuring six metres wide and over ten metres long with sufficient bearing surface. Its engine developed 478 hp, enough power, therefore, to move the 130 tonne roll stands to their destination from where they were manufactured just a few kilometres away.

Large measures of skill and dexterity were needed to "park" the self-propelled transporter within a centimetre of its appointed place in the cold rolling mill's production bay. And once it was in there some final manoeuvring was needed before it was possible to place the load in its correct position in front of the lifting frame. This would have been impossible without the ability of sideways movement - of rotating at a standstill.

Tandem lift with a lifting frame and truck-mounted crane

Shortage of space and the internal height of the bay of about twelve metres called for a technically challenging solution for rotating and then lifting the roll stands which were about ten metres high. "We solved the problem with a combination of the lifting frame and a mobile crane", said Hubert Gruber, who then went on to explain the sequence in detail: "The head section of the roll stand was first fastened to the cross-beam of the lifting frame; the crane's hook block was then connected to the lower part of this steel heavyweight. The next step was to lift the head section slowly, followed by moving the rail-mounted ram of the lifting frame towards the foundation. While this was going on, the crane guided the lower part step by step up to the mounting point where it was finally lowered onto the mounting points." Each lift lasted about one and a half hours until the stands were finally in position on their foundations.



The 130 tonne roll stands had to be moved only a few kilometres from where they were manufactured to their destination.

voestalpine in Linz, who is the world market-leader in this field, was already capable of processing roll-bonded clad plates up to 20 mm thick. When the new plant is finished it will be possible to level plates even

up to 80 mm thick. Amongst other applications, the acid-resistant places are used in the manufacture of pipes for pipeline construction, the foodstuffs industry and seawater desalination plants. ■



Large measures of skill and dexterity were needed to "park" the self-propelled transporter within a centimetre of its appointed place in the production bay.

Trimodal heavy transport for 'power plant relocation'

More than ten years ago a gas power plant was planned in the eastern Hungarian city of Vásárosnamény. However, it was never erected even although the major components, such as the turbine and stator, had already been delivered. Now the heavy components have been sold to the Middle East. The special transport tasks and craning work were carried out by the Bau-Trans site in Hungary in February.

Our task was to load the power plant components onto the transport equipment and to transport it to the temporary storage point in Belgrade", recaps branch manager András Czibik from Bau-Trans Budapest. Behind this lay a complex logistics challenge with around 100 special transport tasks on rail, roads and internal waterways as well as numerous craning operations.

Two starting points, one destination

The heaviest components were a 196 metric ton turbine and a 148 metric ton stator. „The turbine was located in Lőrinci and was loaded onto a low-loader with hydraulically-driven axle lines and transported to the rail connection, some 200 metres away", explains Czibik, adding that the stator was likewise loaded in Vásárosnamény

and transported to the nearby rail platform.

Transshipping to special wagon

A truck-mounted crane with a 450 metric ton max. payload, was used to transship the turbine to the low-loader rail wagon. „The jib radius required for the lift was around six metres", says Czibik. In order to be able to transship the 196 metric ton turbine safely, the crane was equipped with 134 metric tons of slewing platform ballast. The stator was loaded onto another heavy-goods rail vehicle by means of hydraulic jacks and a skidway. After that was a rail journey to Paks, which lies around 450 kilometres southwest of Vásárosnamény. After arriving there, both components were then transshipped onto a load-loader and tractor unit with the help of a truck-mounted crane. This was used to transport the components a few hundred

metres further by road – as far as the quay in Paks. There the heavy goods were transshipped once again onto a barge for transport by water to Belgrade.

„Thanks to their smaller dimensions, we were able to transport 81 further loads directly by road from the starting points of Vásárosnamény and Lőrinci to Belgrade, around 500 kilometres to the south. 17 loads were transported via road to the harbour in Budapest, transferred to ship and then transported to Belgrade on the Danube", says Czibik, summing up the enormous scope of the transport project. In addition, there were a further 174 lifts for „normal loads" carried out by the customer themselves and transported to Belgrade. When one thinks that all this was accomplished in just six weeks, Bau-Trans' capability as a project forwarding company becomes very clear. ■





An LTM 1400 and an LTM 1500 were used for the tandem lift.

Crane use in cement plants

Heavy-transport vehicles and mobile cranes from Felbermayr were used in early January for the modernisation of a cement plant in Upper Austria. In doing so, components with individual weights of more than 100 tons were manipulated.

Environmental protection and resource-efficient technologies are also important factors in order to remain competitive in the construction materials industry. Amongst other things, the existing oven system in the Upper Austrian cement plant was modernised and expanded.

A Goldhofer low-loader with a MAN tractor unit and Liebherr mobile cranes from Felbermayr were used for the transport and craning of the heavy components required for this. The heaviest involved here was the bottom section of the 'clinker cooler'. With a net weight of 96 tons and a length of nine metres as well as width and height of around five metres, this was certainly a challenge for the company's internal transport equipment. „Additional difficulties were

caused by the winter weather" explains Felbermayr's head of operations Karl Berghuber. The gravel base of the storage area had softened up considerably in the preceding days due to the continuous rainfall. However, thanks to the familiarity and experience of the team, it was possible to drive the extremely heavy tractor unit with the 16-axle low-loader under the clinker cooler component which was set down on 'elephant feet'. Then the load bay was lifted by means of hydraulics so that the transport subject was then supported by it. After that the load was secured ready for transport to the destination within the company site.

Tandem lift

The spatial conditions made it necessary to use two truck-mounted cranes. Berg-

huber says: „We used an LTM 1400 and an LTM 1500 from the crane manufacturer Liebherr. The cranes were ballasted with 120 and 135 tons respectively. The maximum jib radius here was around 18 metres. „With the help of good preparation and the excellent cooperation of the two crane drivers as well as all of the companies involved, the lift was successfully completed within about thirty minutes.

A few days later further heavy components, weighing 60, 70, 82 and 86 tons, were lifted in. An LTM 1750 was used for moving these parts. „And that was the end of the majority of our task", says Berghuber, delighted to have been involved with the modernisation of what will soon be the most modern cement plant in Europe. ■

A quarter century of rail

The three transport routes of rail, road and water are a fixed constituent part of the Felbermayr company philosophy. To be strictly accurate, on the 1st of July the division for international low-loader railway transport, or ITB for short, likewise celebrated their 25th anniversary, along with their divisional manager.

The history behind the special wagons for transporting heavy goods on rail goes a long way back in Austria. As early as the 1950s, the forwarder Intercont started up with the corresponding wagons, initially with four to ten axles. But already by the 60s, a 20-axle Schnabel car was put into service – in those days the largest railway wagon in the world. At that time the transport was carried out primarily for the state-owned industry of the day. At the end of the 80s, the Austrian allied companies group ordered a 32-axle Schnabel car, which was operated by the forwarder Intercont.

Felbermayr founds ITB

1994, on the 1st of July to be precise, the Intercont fleet was taken over by Felbermayr. At that time still under the management of Herbert Reutterer, who held this role until 2005. At this time, the post-communist countries of the Czech Republic, Slovakia and Poland were purchasing rolling stock, which also provided the market opening into these countries. In 2005, Thomas Grabuschnigg took over the management of ITB, under the umbrella of Wolfgang Schellerer, initially as departmental Manager and from 1st January 2007 as divisional manager, whilst Wolfgang Schellerer was appointed as managing director at the same point in time.

After that there was a change in strategy: No more used and in some cases outdated equipment was to be bought, but rather only equipment that represented the latest technological state of the art. This approach led in the meantime to the new building of five Schnabel cars under our own direction. Equally, the transport industry should now be offered more complete solutions, also incorporating other transport modes. This paradigm shift followed a four-



Thomas Grabuschnigg (ITB divisional manager) and Maximilian Cisek (techn. manager of ITB) are proud of their fleet and their workers, who do great work every day.

year growth spurt, which is still being maintained today, despite the changing market conditions. In addition to the head office in Lanzendorf near Vienna, ITB currently maintains sites in Wrocław (PL) as well as Zagreb (HR) and Prague (CZ). The home station is in Linz (A). The success of ITB is primarily based on solid and enduring customer relations, close partnerships with the various railway operators, equipment that represents the benchmark for all others, highly motivated and qualified personnel and finally appropriate leadership against the backdrop of the family owners, who can be counted on at all times.

Chronology of a success story

- **1994** – Founding of ITB
- **2005** – Schellerer and Grabuschnigg restructure ITB
- **2006** – Go-ahead for the new construction of a 20-axle unit; three 32-axle units and a further 20-axle unit to follow
- **2007** – Schellerer becomes managing director, Grabuschnigg becomes divisional manager of ITB; the general management is divided in Poland and the Czech Republic
- **2014** – Founding of F & F Rail in Zagreb to serve the local market

EXEMPLARY Worker from Hagn Umwelttechnik is a life-saver

In May, foreman Ingo Kaiser from Hagn Umwelttechnik was awarded the "Christophorus" medal by the Bavarian prime minister Dr Markus Söder for his service as a life-saver. During a construction site inspection in August 2017, Ingo Kaiser noticed a man on the Main-Danube canal bridge in Fürth who had inflicted cutting injuries on himself with apparent suicidal intent. The man was already standing on the outside of the railings. Just before his intended jump from a height of around 20 metres, Mr Kaiser along with another helper was able to hold onto him and secure the suicidal man until the emergency services arrived.



RETIREMENTS Entering a well- earned retirement

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

Ladislav Behún – Crane/Felbermayr Slovakia s.r.o. · **Miroslav Brandusanovic** – Transport/Lanzendorf · **Marko Cvrtak** – Heavy transport/Wels · **Hubert Feitzlmayr** – MTA/Wels · **Hans-Jürgen Fuchs** – Port Logistics/Haeger & Schmidt/Duisburg · **Joseph Grichtmaier** – Assembly/Wimmer Machinery transport/Sulzemoos · **Konrad Gröfler** – FST/Stams · **Alfred Haider** – Carpentry/IS Baubetrieb/Linz · **Matthias Hartl** – Transport/Lanzendorf · **Gerhard Hilscher** – SB Intermodal DU/Haeger & Schmidt/Duisburg · **Pasaga Hodzic** – Workshop/Wels · **Harry Hoffmann** – Port

Logistics/Haeger & Schmidt/Duisburg · **Prvoslav Kostadinov** – Heavy transport/Wels · **Ursula Nitsche** – Adviser/HSW · **Wilfried Ortner** – Metalworking/IS Baubetrieb/Linz · **Hans Peter Plotsch** – Crane/Graz · **Friedrich Pospischil** – Transport/Lanzendorf · **Anton Radosek** – In-situ transport/Lanzendorf · **Thomas Rottluff** – Assembly/Wimmer Machinery transport/Sulzemoos · **Helga Schwarzl** – Crane/Graz · **Erwin Trachsler** – Crane/Lanzendorf · **Edeltraud Trautner** – Facility/Sareno/Ulrichsberg · **Hannelore Tschampel** – Administrative office/Reinhold Meister Hydraulic engineering · **Gejza Varga** – Crane/Felbermayr Slovakia s.r.o. · **Jürgen Waschke** – Crane/Wimmer Machinery transport/Sulzemoos · **Norbert Weishäupl** – Crane/Linz · **Franz Hubert Wimmer** – Project/Wels · **Egon Wurzer** – Civil engineering/Wels · **Josef Zraunig** – FST/Salzburg

PRIZE QUESTION READ AND WIN

Prize question:

Where were Felbermayr transport and lifting technology working this spring with the tipping device?



1st prize:
An LTM 1090-4.2,
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You can find the answer in this edition. Submit the right answer and you could win one of the 15 non-cash prizes that we are giving away. Please send in the right answer,

quoting your postal address, to us by email informer@felbermayr.cc or fax +43 7242 695-144. The entry deadline is October 31, 2019. All decisions are final and not subject to legal appeal.

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