# INFORMER SELBERMAYE GROUP 1/2012

HIGH VOLINGE POWER STATION BUILT ON THE MUR

> SPECIAL TRUE RAILCAR IN CLIMATETEST

ASSEMBLY UNIT FOR TURBO GENERATORS CONSTRUCTED

FELBERMAY

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# **TRANSPORTING AN AUTOCLAVE**



#### Dear readers,

Now, as you sit and read the tenth issue of Informer that lies before you, we can say that 2012 has got off to an expansive and innovative start for Felbermayr. The biggest change has been to fully acquire the operational activities of the former Reinhold Meister Group, whose headquarters are in Deggendorf. By doing this, we have significantly expanded our hydraulic engineering transport fleet as well as our services for investigating and clearing arms and munitions, environmental engineering and landfill construction. In hydraulic engineering, we have become a major player in European inland waterways. Our sincere thanks go to more than 230 employees and the management of the former Meister Group who have placed their trust in our ability to work together successfully. In addition, a European telematics system for our fleet management of long-distance traffic was successfully launched. It is used to guarantee the best possible transparency for our customers in terms of scheduling. This includes a special re-

Yours sincerely,

porting system that significantly reduces bureaucracy. The cost-saving potential associated with this is both significant and necessary.

But where will we be after a further ten issues of Informer? Herein lies the promise of future development. We are eagerly awaiting these future challenges, even if this will take great effort.

With this in mind, we wish you a wonderful, relaxing summer.

Horst Felbermayr



Horst Felbermayr DI

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A colossus on rails

BAUTRANS

**SARENO** 

PORTRAIT

Rostrum trailer in action

Quality is catching on

Model maker Walter Lud





#### IN ONE STROKE Excavator tour with Horst Felix

Dredging work on the Main-Donau canal has required the massive deployment of machinery from the Felbermayr department of hydraulic engineering. The use of the heavygoods vessel Horst Felix enabled several tonnes of machinery to be transported to the site in a single delivery. A barge was also coupled to the Horst Felix, meaning that there was no need for an additional motor boat. The construction sites for the job, which ran from January to March, were the approach areas to the weirs at Kelheim and Riedenburg. In order to continue guaranteeing the required queueing system for shipping traffic, 65,000 tonnes of material were dredged, most of which was utilised at surrounding depots and agricultural areas.

# NEWS



#### SUCCESS FELBERMAYR SPONSORS SWIMMERS

Upper Austria's successful swimming champions look forward to breeding more success. Rest days are off the agenda for Jördis Steinegger as she can be found pounding the lengths in the pool at the Linz Gugl sports complex seven days a week in preparation for the London Olympics. Meanwhile 18-year-old Christina Strigl's training is not running ideally over the 50 m breaststroke. The multiple youth and junior national champion missed the qualifying time for the European Long Course Championships by the smallest margin of one hundredth of a second, thus also shattering her Olympic hopes - sufficient, however, to be crowned national champion. Incidentally, Steinegger, who already booked her Olympic berth at last year's world swimming championships in Shanghai, has no fewer than 87 Austrian national titles to her name. Whether she has also managed to swim her way into the medals in the Olympic Games is not known at the time of publication.



#### GIANT Linz columns completed

With a length of 71.5 metres and a total diameter of 3.9 metres, the columns produced by BIS VAM Anlagentechnik are among the largest ever manufactured in the Felbermayr assembly units in Linz. Following raw production in the halls, the five columns, each weighing ninety tonnes, were transferred to the self-propelled transporter by indoor crane. They were then transported to the open-air storage areas several hundred metres away, where the final surface treatment was performed by the contractor company. In mid-May, the columns were transferred to ships in the Felbermayr heavy load port, from where they were transported to their end destination in the United States of America. The geographical proximity of the Felbermayr manufacturing and warehouse halls and the heavy load port made it possible to process the order with the maximum possible cost efficiency for the customer.



#### EXPANSIVE Felbermayr expands construction services

In March 2012, Felbermayr acquired the operational areas and equipment of the Reinhold Meister group, which has its headquarters in Hengersberg, near Deggendorf. With this acquisition, Felbermayr is expanding its range of services in Germany with the addition of water and landfill construction, as well as weapons clearance and exploration. The move has secured the jobs of 200 employees of the insolvent Meister group. The companies are now trading under Reinhold Meister Wasserbau GmbH, Müsing Wasserbau GmbH, HAGN Umwelttechnik GmbH and Müsing Kampfmittelräumung **GmbH. Reinhold Meister Wasserbau is** headquartered in Hengersberg. The companies Müsing Wasserbau and Müsing Kampfmittelräumung are based in Bernau, while HAGN Umwelttechnik is based in Olching.



#### **COMMISSIONING** Specialised Civil Engineering in water

Extreme accuracy is the order of the day in the deployment of the two stilt-mounted pontoons Barbara and Milena. Around 600 anchors are in use, each with a load-bearing capacity of seventy tonnes. The reason for these pontoons is the basic commissioning of the ship lock system at the Kachlet power station in Passau. Special features of this job include the extremely hard stone that must be drilled though, but also the fact that the drilling machinery is located on the ships, which have to maintain their position within just a few centimetres despite the fluctuating water level, in order to ensure accurate drilling. This is achieved by the »lifting piles« of the stilt-mounted pontoon.



HIGH PRESSURE TRANSPORT OF PRESSED PARTS

A total of ten special and heavy transports were required for the delivery of pressed parts for the »Voestalpine prefabrication« project. The first transports had already been delivered and positioned in mid-November last year. All work involved in the general assembly of the press was completed at the end of December. The project, run by Felbermayr subsidiary Wimmer in cooperation with Felbermayr Transport and Lifting Technology, was initiated in the plant of press manufacturer Schnupp in Lower Bavaria. Here the components, weighing up to 85 tonnes, were loaded onto the low-loaders using hydraulic lifting gear and an indoor crane.



## DIRTY WORK LIFTING TECHNOLOGY FOR LAUSSITZ COAL FIELDS

At the end of April, two cranes were used for the reconstruction of a belt system in the Laussitz coal fields. To move the load of around 105 tonnes, two mobile cranes with load capacities of 350 and 250 tonnes were used together. The use in the brown coal mining district was preceded by the replacement of a 96-tonne drive in February. Extreme temperatures of below minus 25 degrees hampered the work of men and machinery alike.

## ACTIVE SAFETY DAY Event for the promotion of occupational health and safety

In close collaboration with HSEQ managers from the BIS group, BIS-Gerätetechnik and Felbermayr Lifting Technology together held an »active safety day« at the start of February. Almost eighty people from leading companies in the areas of mechanical engineering, equipment technology, and industrial plant construction participated in the event, which took place at six different stations. In addition to employees of Felbermayr Lifting Technology, who provided information about skills and safetyrelevant aspects in the use of high-level access equipment, representatives from renowned manufacturers also held presentations on electrical machinery, securing loads for transport, and personal protective equipment.



#### WIND POWER Large crane in use around Europe

This year, Felbermayr Transport and Lifting Technology will construct around 300 plants. This represents more than double the number of orders from the previous year. These plants will mostly be constructed in Germany, Austria, Romania and the Ukraine. As a result of this order influx, we have also adapted our vehicle fleet accordingly: Our range of new purchases also includes six large cranes with maximum load capacities of up to 600 tonnes. Felbermayr Lifting Technology currently has over 400 cranes in use.

SIS inman



RESPIRATORY EQUIPMENT Suction excavator tackles gas job

At the start of the year, the waste management department deconstructed and then disposed of two molecular sieve silos and twelve nitrogen buffer silos at a factory belonging to gas producer Linde in Linz. The silos measured up to twelve metres in length, with diameters of 4 and 2.5 metres. They were first disconnected from the supply lines, lifted out with cranes, loaded onto transporters, and finally disposed of. Before this could happen, twenty cubic metres of filter granulate first had to be sucked out of the molecular sieve silos. Employees were equipped with respiratory protection to prevent any damage to health.



#### COMBINATION TRANSPORT AND LIFTING TECHNOLOGY FOR BRIDGE SUPPORT-ING STRUCTURE

Earlier this year, Felbermayr transported ninety reinforced concrete girders each with a weight of eighty tonnes for a bridge construction project north-east of Bucharest. Strictly speaking, the transport was an internal task within the building site: the fortymetre long and two-metre high elements of the supporting structure were transported over roughly three kilometres. The job posed a particular challenge due to the unsecured substrate and gradients of over ten percent. For this reason, a tractor and a pusher were also used for the transports, which were performed step-by-step. The majority of the elements were lifted using two cranes with a maximum load capacity of 250 tonnes. For the larger components, a 500-tonne crane was also brought in to assist the 250-tonner. The opening of the 160-metre-long motorway bridge is scheduled for autumn of this year.



#### CROATIA POWER STATION COMPONENTS INSTALLED

Just one among many successful projects in Croatia and Serbia, the installation of a turbine and a generator in the Sisak power station deserves a mention. Thanks to the well-rehearsed team from Felbermayr's Heavy Equipment division in Hilden, preparing the foundations for the 195-tonne turbine and the 160-tonne generator was more or less a routine procedure. According to the Felbermayr representatives for Croatia and Serbia, the customer also in particular remembered the good preparation and particular dedication of the Felbermayr employees.



#### convoy Transport of pipe sections for cement works

At the start of January, Felbermayr transported eight pipe sections for a cement works in the Swiss town of Untervaz from their production sites in Dessau and Ostrava. The cylindrical pipes had diameters of up to 5.5 metres and a height of 3.10 metres, and were transported on semi low-loaders with four-axle tractors. In order to pass obstacles such as fences and guide rails, the pipes were loaded on a one-metre high transport saddle, providing a »floor clearance« of 1.5 metres while still not exceeding the maximum height of 4.5 metres. Apart from the complete closure of the Pfänder tunnel, no other traffic diversion measures were required. The pipe sections, which weighed up to 55 tonnes, were loaded and unloaded with indoor and mobile cranes.



#### SAFETY Innkreis motorway expansion

At the start of April, the Felbermayr Civil Engineering division began work to expand a seven-kilometre section of the Innkreis motorway between Meggenhofen and Weibern in Austria. The construction project includes expanding the lanes to a width of 3.75 metres, as well as constructing a full-width hard shoulder measuring 3.50 metres. This requires an increase in the crest width from 24 to 30 metres. The width extension work also requires the adjustment of twelve bridges and water conservation systems. The adaptation and extension of noise protection measures is also particularly important. The project is set to cost some twenty million euros, and is scheduled for completion in June 2013.

#### HIGH VOLTAGE EARTH CABLE FOR HIGH-TECH GRID CONTROL CENTRE IN UPPER AUSTRIA



In mid-March, Felbermayr Civil Engineering began work to set up a high-voltage cable for Energie AG. The cable, which is around five kilometres in length, leads from Hörsching to the Wegscheid transformer substation. As part of the project, 2,500 metres of PVC tubing with a diameter of 200 millimetres were laid under the ground. Tubes for optical fibres for data transfer were also laid in parallel. To ensure mechanical protection of the high-voltage cables, the tubes are embedded in lean concrete. Significant challenges were posed by crossing points with various gas, electricity, and water pipes: Since the empty tubes had to be laid at a minimum depth of 1.65 metres to ensure the required coverage, engineers had to dig down to 2.40 metres until they were below the existing cables. The suction excavator from the Felbermayr Waste Management division proved to be the ideal tool for exposing existing cables. Thanks to the suction excavator, the cables could be safely sucked free, virtually excluding any possibility of damage. The cable is set to go live at the end of the year, thus completing the last section of the renovation of the 110-kilovolt cable »Timelkam-Wegscheid«.



## COUNTER-TERRORISM PLANE TRANSPORTED FOR DEPLOYMENT EXERCISE

At the start of May, Felbermayr subsidiary BauTrans transported a Boeing 737 for the Budapest counter-terrorism centre. For transport, both wings were detached from the fuselage and transported on mega trailers through Budapest to the counter-terrorism centre. The 3.80-wide sections were, however, relatively easy to transport compared with the fuselage. Considerably more precautions were required for the fuselage, which measured 33 metres long, 8.50 metres wide, and 4.90 metres high. These included the temporary dismantling of barriers, traffic lights, and various traffic signs around the capital, as well as lifting cables using lifting platforms. Two mobile cranes were used at each site for loading and unloading the 23-tonne fuselage.



<u>smooth running</u> Transport of container for oil refinery

In February, Felbermayr began the transport of thirty components for an oil refinery in Russia. Destination: the town of Syzran, approximately 900 kilometres south-east of Moscow. Starting point: the town of Penza, approximately 300 kilometres away. Up to thirty tonnes of heavy goods were transported by road alone, with diameters of up to 5.85 metres and a height of 4.80 metres.

# **TRANSPORT AND LIFTING TECHNOLOGY**



# Transport of hot air oven for the aviation industry

In early April, Felbermayr transported a 140-tonne autoclave from Aschach an der Donau to the FACC AG plant in Upper Austria, a journey of around 100 kilometres. In addition to adverse weather conditions, there were also numerous side streets and traffic diversions to overcome.

he rapid growth of the Upper Austrian aeronautical component manufacturer FACC has given rise to a large-scale investment programme, which also includes the expansion of existing manufacturing capacities. The autoclave required by the plant was manufactured in Coesfeld in Germany and transported by ship to Austria. Due to the adverse conditions, it was more than two weeks before the autoclave arrived in Aschach an der Donau. This also delayed the road transport by several days. »Due to the sinking of another ship, the Danube was impassible for our ship for several days«, explained project manager Günther Wimmer, who was responsible for the transport on the Felbermayr side. Since several other companies were involved in the transport for the purposes of traffic diversions and clearing the roads, a high level of communication skill was required. According to Wimmer, »we had to lift several thousand cables and dismantle numerous traffic signs and traffic lights, all of which reguires specialists who we had to co-ordinate all over again.« Transport approvals also had to be altered. »Everyone was very cooperative«, Wimmer is pleased to



Five bridges were crossed with the use of a »fly-over«. The load capacity of the bridges would otherwise not have withstood the full weight of the 220-tonne transport.

report on the successful cooperation with companies, authorities, and executives.

### **Obstacles to crane deployment**

Even several days before the ship docked, the crane required for transferring the autoclave from the ship to the low-loader was already a hot topic of conversation in the region. Due to the unloading height of around thirty metres, a 48-metre-high giant crane with a maximum load capacity of 600 tonnes was placed in position. However, the project faced a further problem: »Gusts



of wind nearly caused the whole lifting operation to fail«, reported Wimmer. But after about an hour, the weather settled and the 140-tonne autoclave was transferred from the ship to the low-loader. The four-day heavy transport by road was then finally able to begin.

#### »Fly-over« used for crossing bridges

Including the tractors and pushers, the transport reached a length of almost forty metres. The 6.5-metre diameter of the autoclave further heightened the challenge for Wimmer and the team: »We had to dismantle traffic lights, lift large numbers of cables, and take down signs.« But this still was not enough. The load capacity of some bridges was not sufficient for weight of the transport, despite its weight distribution over twenty axles. »These bridges were overcome using a »fly-over«. In this case, a »bridge« is constructed over the bridge, which only places the weight on the foundations, or more precisely on the abutments«, Wimmer explained. For unloading and the final positioning in the plant, two mobile cranes were used. The autoclave is set to be commissioned in July. It will primarily be used for drying the power plant housing of Boeing and Airbus planes.

# Power plant extension in Slovenia

From February until the end of May, employees from Felbermayr Transport and Lifting Technology were in action at the Slovenian power station in Sostanj. The assembly of supporting structure elements required the use of the self-propelled transporter and the crawler crane LR 1750.

he Slovenian coal-fired power station in Sostanj is set to be commissioned in two years' time. Following completion, the old heating blocks are to be gradually removed from the grid. The decommissioning of these older power station components is intended to further improve the air-quality situation surrounding the power station and hence also in the neighbouring region of Kärnten.

# SPMT and crawler crane as a package

»Before we reach that stage, however, my colleagues on the building site still have several thousand tonnes of steel to move«, Michael Lehner from the Felbermayr Project department described the situation on the building site at the start of February. Today, three months later, the supporting structure elements for extending the coal-fired power station are fully constructed and the actual power station components can be installed. The main machinery used on the building site were an LR 1750 crawler crane and the self-pro-

pelled transporter in various configurations. »Transporting the crane took around 36 HGV transports.« These travelled via Suben and Spielfeld to their destination in Sostanj, which is located around fifty kilometres south of the border with Kärnten. The transport of the self-propelled transporter, or SPMT for short, required a further five HGV loads. For lifting the approximately 180-tonne cross beams and twelve further supporting structure elements weighing between 100 and 120 tonnes, the crawler crane SL-56 version was used. Lehner reported, »in brief, this means that we needed to use a 56metre-long lattice jib and 215 tonnes of ballast.« If we consider that the lifting operation was performed as a tandem lift together with another crane, and just one unloading height of 18 metres with a maximum suspended load of 65 tonnes had to be overcome, this is also perfectly sufficient. »Normally, we wouldn't use a crane with a maximum load capacity of 750 tonnes for this job, but we would use a 600-tonner instead.« However, since this wouldn't have been possible for logistical reasons, the LR 1750 was used.

#### 1,300 horsepower

Before lifting, the steel girders, each measuring around 28 metres long by a maximum of eight metres high and four metres wide, were placed in position by the self-propelled transporter. Due to the different dimensions involved, the SPMT was reconfigured between operations. For the two girders, two lots of parallel-coupled six-axle modules with two 450 PS powerful drive units were used, and for the twelve beams, three lots of six-axles with three drive units were used. These different configurations were the result of the load-bearing capacity of the base plate, on which the 160 metre-high power station block is constructed. After commissioning of the 600-megawatt-producing block six in 2014, block one with thirty megawatts and block four, with 275 megawatts are to be removed from the grid. The thirtymegawatt block two was already replaced in 2008 by the commissioning of two gas turbines. Block five, with a power of 345 megawatts, is to remain as a reserve.



# LIFTING TECHNOLOGY



# Cranes at work at an ore storage yard

Platforms and mobile cranes provided by Felbermayr Lifting Technology were used to install a new crane trolley for feeding Voestalpine Stahl's blast furnaces. The works, commissioned by LogServ, were completed at the end of January with the installation of a new crane trolley weighing approximately 75 tonnes.

ountless tonnes of iron ore are delivered by rail and boat to Voestalpine Stahl in Linz every year. A so-called crane trolley is being used to feed the blast furnace with the high-quality raw material used to produce steel. To meet growing demands, a new system will be installed on the railmounted portal.

### Seventy percent faster crane trolley

Before dismantling the current system, the lifting device that used to weigh some 69 tonnes was lightened by about ten tonnes by dismantling various components. Finally, an LTM 1500 and an LTM 1130 were used in the dismantling process. »The two mobile cranes shared the remaining weight, fifty and nine tonnes respectively, and lowered it safely and gently to the ground, « reported the head of operations, Gottfried Hrast. The cranes had to cope with around 116 tonnes when lifting the new handling unit. »They were already on site for several weeks to assemble the trolley,« explained Hrast, who also supported lifting the new trolley technically. This was completed within a few hours. At the beginning of February, the new and approximately seventy percent faster crane trolley could be put into operation.



Weighing 69 tonnes, the old crane trolley weighs significantly less than the new one.







# **CIVIL ENGINEERING**

# Niklasdorf power station

To be able to build the power station, the River Mur had to be redirected. This happened using so-called box cofferdams that were constructed using 16-metre-long sheet piles. Overall, the dam is 10 metres wide and 170 metres long. Some 8,000 cubic metres of gravel were excavated from the River Mur for the filling.

# **CIVIL ENGINEERING**



Since February 2011, employees of the Felbermayr »Salzburg Construction« division have been working on expanding and constructing a power station on the River Mur. In combination with the old site, the power station – located in Niklasdorf in Styria – will produce approximately 3,000 kilowatts of power once it is put into operation in January 2013.

he River Mur is one of the biggest providers of renewable energy in Styria. With a new power station downstream from the Leoben power station, NEL (Niklasdorf Energie & Liegenschaftsverwaltungs GmbH) will increase its standard operation power generation from approximately 10.5 gigawatt hours per year to around 19.8 gigawatt hours from the beginning of 2013. This means that about 3,000 additional households can be supplied with energy.

### Weir fields

PHOTOS: MARKUS LACKNER

Demolition signalled the beginning of the works: In the area where the power station is to be built, there was a concrete protected building as well as a scour outlet that had to be demolished before construction on the weir fields could begin. Then the construction site near the left bank of the River Mur was drained to be able to build the weir system. This construction phase lasted from May until October 2011. The foundation pits then had to be excavated. At the same time, the area under the power station was also deepened, according to Ellmer. To complete the two weir fields, 4,700 cubic metres of cement were used in an area covering 1,600 square metres. These works were completed in October. Now the weir fields could be flooded. The River Mur was diverted from

the right to the left bank using the so-called box cofferdams. Ellmer explained that »16metre-long sheet piling was used.« As a result, a dam that is ten metres wide and 170 metres long was constructed. Some 8,000 cubic metres of gravel were needed to backfill it, according to Ellmer. The gravel excavated from the river bed was used there directly and so avoided unnecessary transportation. This was followed by the hydraulic steel construction using a shell along the back of the weir as well as mounting the so-called wearing plates on the inside of the weir fields. To protect the material from deterioration during the second construction phase, the two weir flaps will only be assembled at the next period of low water. If we consider that the water flow rate in the River Mur can fluctuate between 50 and 580 cubic metres per second at high water, this was also inevitable. In addition, on the weir side, an ecological companion channel has been built for larger water inhabitants such as otters. »Two fish ladders will also be built on the right-hand river bank,« added Ellmer.

# Raised water encroachment in the foundation pits delays project

With the construction of the plant's centre piece, the power station and intake structure were started in November. Next, a 17-metre-deep foundation pit was excavated. This meant additional sheet piling was necessary for the pile driving. The subsoil also had to be additionally sealed using jet grouting. Ellmer explained: »Using a lance, a special kind of cement was sprayed three to four metres into the ground. In our case, we used 400 cubic metres of jet-grouting cement.« Yet this was still not enough. Then eight pumps with a total power output of 600 litres per second were used to keep the foundation pit dry. When building the power station, river bank walls and the intake structure, 12,000 cubic metres of concrete and 1.600 tonnes of reinforcement were used. This does not include the so-called filter concrete that was used underneath the floor plate to a thickness of about thirty centimetres. »This permeable layer stops pressing water from accumulating on the underside of the floor plate, « is how Ellmer explained this damage-prevention measure that is particular to power stations. At the beginning of July, the turbines were ready to be lifted. »Following this, we installed the scour outlet with a »segmental gate« to transport floating debris and detrital from the upstream water to the downstream water, as well as to control flood water.« Filling the foundation pit and building a fish ladder will signal the conclusion of the first construction phase in November. It is planned that the power station will be put into operation for testing at the beginning of January 2013. Then the »compact bulb turbines«, manufactured and installed by ANDRITZ Hydro, will then rotate for the first time and produce electricity.

When redirecting the River Mur, an excavator with a pile driver was used so that the pile sheets could be inserted.



# STRUCTURAL ENGINEERING



# **Constructing industrial premises for generator production**

Close to Linz's heavy load port, Felbermayr Structural Engineering is currently building a logistics and assembly unit for the globally active technology group ANDRITZ. The units, which are configured to produce turbo generators, should be completed by the end of August.

n 2nd November 2011, the excavators first started to construct the logistics and assembly unit, about 300 metres from the Felbermayr heavy load port in Linz. But the

3,207 square-metre area was first examined in minute detail. This was due to a heavy bombardment during the Second World War: A search for munitions was carried out. »Using a ground-penetrating radar, the search resulted in 217 suspicious cases, that were all discovered up to 1.5 metres underground, « explained site manager Markus Pointinger. Despite this meticulous search, fortunately nothing was found.

# STRUCTURAL ENGINEERING



# Soil compaction for the foundations

Due to its low load-bearing capacity, the historically important ground not far from the »Voestalpine Stahl« premises also needed special precautionary measures and had to be adapted using 214 socalled concrete darning columns and 208 ductile posts to meet the required static conditions. »The ground was compacted over an area covering forty centimetres and then finally filled with concrete,« said Pointinger as he explained the procedure involving the concrete pillars that reach six metres into the ground and will finish under the future floor plate. Even this was not enough for the area that will be used for the future test field foundation for the generators, which will weigh up to 500 tonnes, and the soil was adapted accordingly using gravel and the vibro displacement compaction method. When constructing the support foundations, upon which the actual unit will be constructed in the future, additional ductile posts with an 18-centimetre diameter had to be assembled under the colloid dispersions. These cylinders, made of steel, will reach eight to ten metres into the ground and will provide the founda-



Approximately 1,300 metres of channels were laid in total.

tions for the future unit's load-bearing structure with the necessary support. Incidentally, 26 support foundations that covered eleven square metres and are a metre high had to be constructed. The necessary reinforcement equalled 1.3 tonnes per foundation. This meant that an additional 27 tonnes of building steel were added to the test field foundations that cover about one hundred square metres. »That equates to about two truck transporters, « illustrated Pointinger.

### The plant's centrepiece

Covering an area of about 300 square metres, the test field foundations that are located in the construction pit are really the unit's centrepiece - the individual high-tech components for the 500-tonne voltage transformers will be assembled here and then checked for functionality. »To build this area, sheet piling of up to ten metres in length had to be rammed into the ground due to the ground water level,« said Pointinger when explaining the measures used to keep the pressing water out of the foundation pit. The floor plate and the almost five-metre-high walls were transformed into a so-called »white bath« using special joint strips and waterproof concrete. »Compared with the »black bath«, this procedure does not require any additional sealant to prevent pressure water from flowing into the pit, « explained Pointinger when describing the cost-saving but high-quality procedure. When forming the 35-centimetre-thick concrete walls, an MK 88

mobile construction crane was used. This crane unites the advantages of a tower crane with those of an automatic crane thanks to its high load capacity.

# Prefabricated concrete units used for fast construction progress

The steel composite supports, which are more than twenty metres high, were manufactured by the Gunskirchen-based prefabricated concrete unit manufacturer Oberndorfer and were lifted in to place with a Felbermayr crawler crane. In total, 26 pieces that weigh approximately 55 tonnes were manufactured and processed. This high number was necessary to correspond with the statistical calculations for using an indoor crane with a load capacity of 300 tonnes. Furthermore, thirteen binders (that weigh twenty tonnes) were lifted using the LR 1200 crawler crane for the roof construction as well as the side walls, that are made of aluminium and steel composite, and its respective insulation. In May, the 40-centimetre-thick floor plate was covered with concrete. Felbermayr's work will conclude at the end of August when the outdoor facilities are completed.



# A colossus on rails is tested in cold weather

In mid-February, the transfer of 190 railway coaches began at the Felbermayr heavy load port in Krefeld. Two of the vehicles destined for Russia were transported to a climatic chamber in Vienna for winter testing, as requested by the Krefeld-based logistics firm Schenker.

egional trains of the type Desiro RUS manufactured at the Siemens plant in Krefeld travel at speeds of up to 160 kilometres per hour. In order to deliver a total of 38 trains, each consisting of five coaches, the coach sets at the Felbermayr heavy load terminal in Krefeld are being transferred via Amsterdam to Ust Luga, so that they can be transported further on a barge until the middle of next year. The stationary cane »Big Rocky« and a mobile crane were used for the lifting operation in Krefeld.

#### »Lastoschka« gone astray

However, every end and centre coach first had to go on a »special trip« to the Rail Tec Arsenal climate chamber in Vienna, where they underwent a comprehensive climate test. Then finally the trains, which are called »Lastoschka« in Russia (meaning: swallow), must brave temperatures of up to forty degrees below zero and demon-

Thanks to excellent preparation, the two



At the Felbermayr heavy load port in Krefeld, a total of 190 Desiro RUS coaches are loaded onto barges.

strate their merits for the Winter Olympic Games 2014 in Sochi. »The units in Krefeld were shipped to Austria along the Rhine,

Main and Danube Rivers and then once there, they were lifted on

<image>

# **TRANSPORT AND LIFTING TECHNOLOGY**



to train-carrying road vehicles using a pair of mobile cranes«, explains Sascha Golubich, the Head of Operations. The cranes used were a LTM 1400 and a LTM 1350. »Because of the local circumstances, the nearly 25-metre-long carriage had to be threaded between the crane telescopes at a width of 15 metres«, said Golubich when explaining the difficult operating conditions. After about three hours, the two units weighing approx. 56 tonnes were loaded with centimetre precision on to 10 and 12-axle trailers and secured for onward transport to Vienna.



In the climate wind channel at Rail Tec Arsenal in Vienna, Siemens tested the new regional Desiro RUS multiple unit for Russian Railways (RZD). The tests using artificial wind, ice, rain and snow were conducted at between -40 and +45 degrees Celsius.

### A night trip to the climate test

Due to their size, it was only possible to transport the coaches at night: The Felbermayr Transport division in Wels said that they needed two nights to transport the shipment nearly fifty kilometres. In addition to implementing traffic control measures, two overhead power lines had to be raised for the train along the route through Lower Austria. When, early in the morning on the second day, the shipments arrived at Rail Tec Arsenal (RTA) in the 21st municipal district of Vienna, two Felbermayr cranes had been fully set up and were standing at the ready with their booms in the air. »Because the radius was small, only two cranes, each with a hundred tonne maximum load capacity, were required for unloading and relocating on the RTA track«, says Golubich, who fulfilled the conditions of his contract by doing this. Siemens engineers were also there to ensure a successful outcome, as they are responsible for the technical design of the high-tech passenger trains. The test results were also a reason for celebration, because they mean it is possible for the Winter Olympic Games to be hosted in Sochi in 2014. At any rate, nobody will complain about the cold in the nearly 127-metrelong and approx. 260-tonne trains. And sufficient comfort is guaranteed in the 3.48metre-wide and 4.85-metre-high colossus.

After transporting the two rail wagons, two additional heavy lift items were transported on behalf of the Styrian apparatus engineering company ACE, whose headquarters are in Lieboch. The nearly eighty-tonne steel constructions are destined for Shanghai.



# **TRANSPORT AND LIFTING TECHNOLOGY**



# **Rostrum trailer in action**

In April, together with the subsidiary company BauTrans, Felbermayr transported three columns that were approximately forty metres long from Steinhaus near Wels to the Wacker Chemie factory in Burghausen, about 140 kilometres south of Steinhaus.

hen they were moved internally at the end of March, the transporters got an impression of the container dimensions: »At the time we had to move the columns from the production plant to the processing location, « said Jürgen Steinbrecher, working for Felbermayr's Transport division in Wels. Once they had arrived, the steel components for the final surface treatment were unloaded using two mobile cranes in tandem. The cylindrical reactor, whose length had to be divided, began its journey to the socalled »Bavarian chemistry triangle«. »The components that were 33.5 and 37.5 metres long and had a diameter of 3.6 metres were still very impressive and weighed 45 and 75 tonnes respectively,« said Steinbrecher when explaining the challenging dimensions. The steel components were transported step-by-step using a 12-axle trailer that could be adjusted to the length of the load using a 21-metre extendible trailer.

## **Negotiating tight bends**

For the third consignment, a so-called rostrum trailer was used. »This transport vehicle from BauTrans is the only one in Austria and can raise loads up to 1.5 metres high. « This is a characteristic that was often required due to tight bends and corners. A further benefit of this rostrum trailer is the possibility of transporting self-supporting sections. »The connection between the front and rear axles is then guaranteed by the load itself, « explained Steinbrecher. This was a variation that was also used when transporting the 41.19-metre-long and over 4-metre-wide column. Including the tractor, the convoy was more than 73 metres long and was over five metres high and wide. Taking these dimensions into consideration, is it understandable that many road traffic signs and traffic lights had to be removed. This is something that takes a lot of time when planning the details and also calls for professional teamwork between all

businesses involved. In addition to the three large convoys, five smaller convoys that were up to 38 metres long were also transported from the Austrian plant engineering company Kremsmüller to Burghausen. Alongside the convoy, a high level of technical perfection when lifting the reactor, which was transported in two parts, is also required. When it is fully assembled, it will reach a height of more than seventy metres and will only just be shorter than Burghausen's 79-metre-high church steeple. Following this, the 41metre-long column was placed on its designated area with pin-point accuracy. Incidentally, the lifting work was carried out using the LR 1750 crawler crane from Felbermayr's Project department.

HOTOS: BAUTRANS



The BauTrans rostrum trailer enabled the load to be lifted up to 1.5 metres above street level.



# A sign that builds confidence!

Qualified specialists are working on Sareno's construction sites. As a mark of quality for all firms who employ EIFS-certified specialists, Qualitätsgruppe Wärmedämmsysteme (QG WDS) has put forward a new trademark. It should build confidence and show that EIFS safety and quality is important to these firms.



#### There is more information on Qualitätsgruppe Wärmedämmsysteme on their website: www.waermedaemmsysteme.com

eing a certified EIFS specialist means that during their training, in which they cover the physical and chemical structural basics, the employee has become acquainted with the assembly, function and standardised execution of an exterior insulation finishing system, or EIFS. This seminar must be renewed every three years by attending a refresher course.

## From the beginning

Sareno supports the certification of EIFS site personnel right from the beginning. This is because great expertise is necessary here. Therefore, site personnel sat this exam and can now proudly call themselves »certified EIFS specialists«.

# The new mark of quality

There is detailed information about the quality mark at www.waermedaemmsysteme.com. You can also meet the most recently certified Sareno employees here, as representatives of all employees: Daniel Eisschiel, Franz Fischer, Herbert Fischer, Günter Gabriel, Johannes Gabriel, Robert Rammelmüller, Stefan Rührnößl, Dietmar Salzer, Walter Salzer, Andreas Schwarz and Herbert Siegl. This means that almost all Sareno's site personnel are designated specialists.



# PORTRAIT

# Something big made small

More than a thousand models form Walter Ludl's collection in Kaprun. The majority of the exhibits are construction and transport vehicles on a scale of 1:50. A special feature are the many individual pieces that the skilled car mechanic has made himself by hand.



Große Maschinen

HERECTLON: GANZLANRIO INTER: 10:30 12:30 UNV 15:30 12:30 UNV

Walter Ludl from Kaprun finishes most of his individual pieces by hand.

small hobby makes everything better. That's the opinion of Walter Ludl, whose collection is one of the biggest in the Republic of Austria. He became passionate about mini models around thirty years ago. At the time, Ludl, who is now aged 64, worked at the Kaprun power station as a structural maintenance technician. It was the job that sparked his passion and also laid the cornerstone for his small »private museum«. Incidentally, schools often visit the collection when on a trip.

# »Private museum« covering fifty square metres

The models are stored just next to the bedroom in an area covering about fifty square metres. What does his wife think? »My wife shares my hobby with me, « says Ludl, but after a short pause he corrects himself. »Let me put it this way, she accepts it «, he adds smiling to himself. There is no need to worry about having to put a stop to Ludl's passion due to lack of space, though: »The storeroom is filling up, but there is still room for storage, « he says. Mr Ludl is now selective when it comes to choosing which models he copies. He is increasingly opting to reproduce extremely heavy vehicles.

### Cellar workshop for making transformers

Father to two grown sons, he has already build about 50 models himself. He taught himself the manual skills of painting and milling. Mr Ludl has recently put the drill in his cellar workshop to one side many times, though: »A good friend has already helped me with a 3D mill. That makes it all easier. « But Ludl does not make things easy for himself. The jewel in his homemade collection is a transport convoy

that is over 110 centimetres long, a replica of the original that was used to transport the transformer for the Limberg power station in 2010. He did not count the many hours. But it did take half a year before his »greatest work« was completely finished. The transformer, a masterpiece made of aluminium, was finished by hand and was an exact copy of the rostrum trailer. The trailers were re-built and re-painted. To get away from the painstaking work under a magnifying glass, Ludl also enjoys cycling from time to time. And even then he

has to do something extra: kaprun museum NDERAUSSTELLUNO Magnetic Magnetic has to do something extra: from Salzburg to Rotterdam or Vienna, for example –

enna, for example – »to look at models,« he says.

## KAPRUN MUSEUM

Entitled »Big Machines on a Small Scale«, there is still a special exhibition displaying about one hundred models from Ludl's home work-

shop until 31st October 2012. The exhibition is being held at the Kaprun Museum. Covering an area of about forty square metres, it is also possible to see four Felbermayr convoys that have been faithfully reproduced. More information: www.kaprunmuseum.at PHOTOS/GRAPHICS: REINHARD FREMUTH (2), KAPRUN MUSEUM

A masterpiece that is over a metre long: a reproduction of the transport convoy used for the Limberg II pumped storage power plant (scale 1:50).

# PERSONNEL



Emmerich Schiessling

### NEW MEMBER Felbermayr Construction expands services

Since early 2012, the Felbermayr Specialised Civil Engineering division has been working with a geotechnics departments. The department is being led by Emmerich Schießling. Originally from Tirol, he has been working in the area of ground surveying for 19 years and thus has wide-ranging expertise relating to geothermal and exploratory drilling, as well as rotation core drilling in loose material and bedrock. Moreover, the geotechnics department offers diverse borehole investigations right through to dynamic probing using heavy dynamic penetrometers (DPH). Most recently, Schießling worked for a well-known geotechnics company.



## LIFTING TECHNOLOGY CRANE AND PLATFORM SERVICING AND REPAIRS

In April, Franz Briedl was entrusted with servicing and repairing cranes and platforms throughout the Transport and Lifting Technology department. In this position, Mr Briedl is technically responsible for servicing and repairs. Alongside his training as a mechanical technician, additional training as an electrical technician, as well as sitting masters' exams in mechanical and industrial engineering, Mr Briedl has the necessary experience thanks to the twelve years he has spent working as a service technician for mobile and crawler cranes. By incorporating a central service centre for cranes and platforms, additional savings potential and an improvement in our customer service can be unlocked.

## RETIREMENTS Well-earned retirements

Many thanks and well-deserved appreciation are extended to all those who have recently retired. They have contributed to the growth of the firm, some for decades, and thus have helped shape the company's history.

Gisela Cservenka - Administration, Linz · Johann Drothler – Transport, Klagenfurt · Rudi Franke - Cranes, Görlitz · Herbert Giger - Civil Engineering, Wels · Alfred Hellmayr – Civil Engineering, Grieskirchen · Alois Hohenwarter - Civil Engineering, Wels · Miroslav Jevtic - Civil Engineering, Wels · Karl Malzer - Civil Engineering, Wels · Zivadin Petrovic - Civil Engineering, Salzburg · Hubert Rathmoser – Heavy Transport, Wels · Siegmund Richter -Cranes, Schwarze Pumpe · Notburga Rosic – Administration, Wörgl · Nikolaus Ruhland – Heavy Transport, Wels · Alois Sageder – Administration, Wels · Wolfgang Scharf – Cranes, Kamenz · Franz Schmid – Civil Engineering, Grieskirchen · Heinz Stecher – Cranes, Wörgl · Ljubisa Vojinovic – Cranes, Lanzendorf · Josef Wieser - Civil Engineering, Wels

# Competition

Prize question:

Which crane was used to transfer a 140-tonne autoclave in Aschach an der Donau?



# 1st prize:

A 1:50 scale model of a MAN TGA with Palfinger PK100002 crane. This faithful reproduction model is a special edition from Conrad, made from diecast aluminium.

You can find the answer in this edition. We will draw winners of the 15 non-cash prizes from amongst the correct entries. For further information, go to www. felbermayr.cc/informer – Click to enter! Please send us the correct answer by fax to +43 7242 695-144 or e-mail informer@felbermayr.cc. The closing date for entries is 30th November 2012. There is no legal recourse.

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