

Rhinos in feel-good mode

IMPRESSIVE PAGODA
AT BERLIN ZOO

The future of timber construction
Second expert meeting on the topic of timber construction

Mobility needs to change
TUfast e.V. - The Eco Team

The Additive Manufacturing Team
Do not talk but get going

HAMUEL
REICHENBACHER
Members of the SCHERDELGroup



Foreword by Davis Müller.

Visions are more important than ever before...

Dear customers, business partners and colleagues,

I believe it is very important that we have visions and goals and try to achieve them – best in cooperation with partners we trust. This provides me with an elegant transition to Juhan Viiese from the staircase, window and door manufacturer Aru Grupp, whom I have known for a long time and had the pleasure of supporting on a great project.

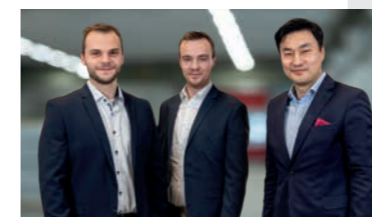
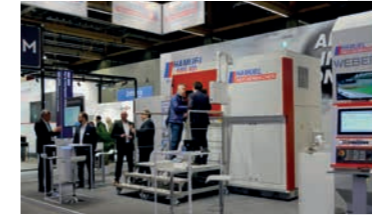
My vision: sales is not just a matter of selling but of bringing the right partners together. In the case of this project in Estonia, I have succeeded in doing just that, and I say that with pride. With our plant concept, Juhan Viiese will get much closer to his goal of making his factory the most modern staircase factory in Europe over the next few years.

For us, however, this is also a logistical challenge, as in Estonia it can occasionally happen that the plane does not land where it is expected to land. This is why our service technician once drove 10 hours through a blizzard to be able to carry out maintenance at a plant on time.

However, there are also other interesting reports, such as one about the construction of a pagoda for the new rhino enclosure at Berlin Zoo. Or one about the TUfast Eco Team of the Technical University of Munich and their interpretation of e-mobility. We introduce our additive manufacturing team and thus build a bridge to the summary of the Formnext trade fair. Moreover, we give a little preview of the upcoming LIGNA in May.

I hope you will enjoy reading this issue

Davis Müller
Sales International
Reichenbacher Hamuel GmbH



Reichenbacher Hamuel GmbH
4-5 **The future of timber construction**
Second expert meeting on the topic of timber construction.

Reichenbacher Hamuel GmbH
6 **Review Fair Formnext 2022**
Additive Manufacturing - We are well prepared.

Reichenbacher Hamuel GmbH
7 **Preview Trade Fair LIGNA 2023**
Making more out of wood.

Technical University of Munich
8-9 **Mobility needs to change**
TUfast e.V. - The Eco Team.

Cover Topic:
Glass GmbH Bauunternehmung
10-13 **Rhinos in feel-good mode**
Impressive pagoda at Berlin Zoo.

Service partner Reichenbacher
14-15 **La qualité n'est pas un acte, c'est une habitude**
Quality is not an action but a habit.

Aru Grupp AS
16-17 **Fully automated staircase plant in Finland**
Nordic individualists.

The Additive Manufacturing Team
18-19 **Do not talk but get going**
In the context of our series "Employees at Reichenbacher".

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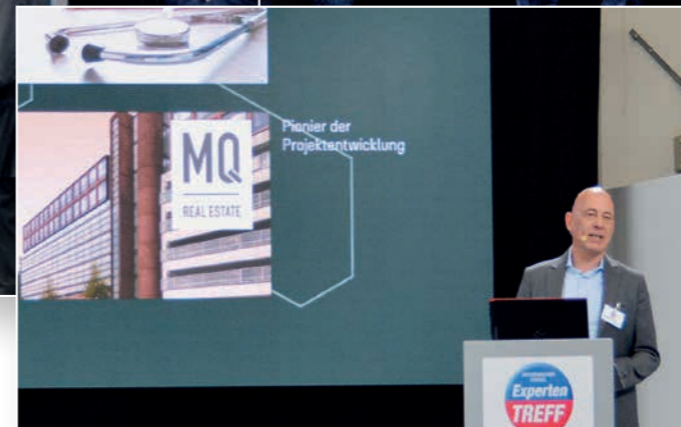
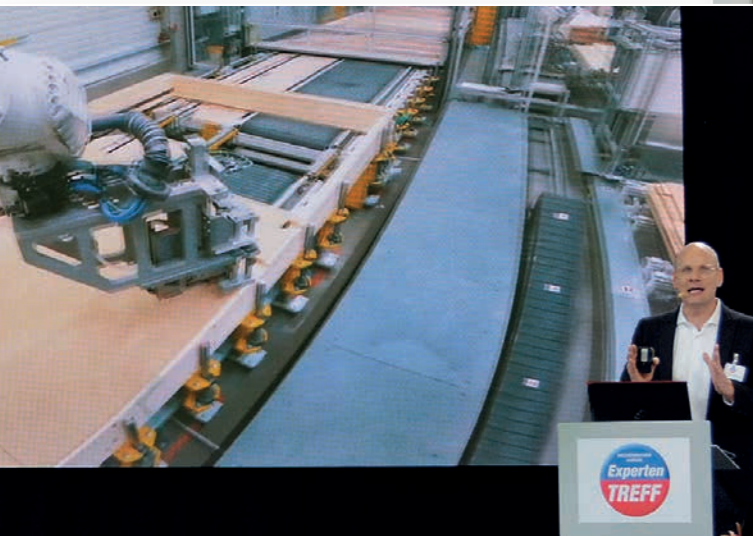
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The future of timber construction

Second expert meeting on the topic of timber construction.

Housing is scarce and becoming increasingly expensive. Timber construction has conquered by now an important place in the building industry worldwide, especially with respect to environmentally responsible construction. After all, the building industry will be a crucial factor in coping with climate change in the future, as, according to the UN, this industry sector alone ranks third in terms of global CO₂ emissions.

The expert meeting took place for the second time at Reichenbacher Hamuel on November 9, 2022, and 100 guests did not miss the opportunity of discussing various aspects of timber construction live or online. As the year before, Andreas Leopold Schadt presented the 4-hour event with his usual charm and humour. Important topics were how much individuality a society can still afford in view of scarce resources in building, or what a factory of the future could look like.



Robotics in timber construction

Prof. Andreas Heinzmann from the Rosenheim Technical University of Applied Sciences opened the series of lectures and spoke about useful applications of robotics in timber construction. He mentioned a shortage of skilled labour, ergonomics, cost reduction or continuous process flows as important motivators to consider automation. In his opinion, the tasks of robotics are manifold, ranging from sorting, stock picking, logistics, handling, positioning and joining processes to machining. He pointed out which processes permit the efficient use of robots and indicated their great potential. Asked whether robotics is only for big companies, Prof. Heinzmann replied, "The use of robotics also makes sense for small and medium-sized companies if you concentrate on small sub-areas. You should never have the ambition to address too many processes at once."

Solutions for the construction and trade sectors

During the lecture by Andreas Gebhardt from Fraunhofer IPA, who spoke about solutions for the trade and construction sectors from the perspective of application-oriented research, one interesting aspect in particular caused discussions among those present: exoskeletons used as assembly aids in ergonomic work. He stressed that musculoskeletal disorders affect 25% of all workers in the course of their working lives, causing 125 million lost days with a loss of gross value added of Euro 90 billion annually. In his opinion, exoskeletons, i.e. external support structures for the body that assist in carrying or lifting loads, working overhead or in a stooped position, and in handling heavy tools, will be used much more frequently on construction sites and in production in the future. This is also due to the employers' liability insurance associations, which are pushing for their use, as demographic change and an ageing workforce, which is less capable of coping with the high stresses than younger staff, mean that action is necessary in terms of health protection.

The boom in timber house construction

Dominik Wolfschütz from VDMA spoke about the increasing market shares of timber construction in all its facets. His conviction is that timber construction will continue to grow even in economically uncertain times. On the one hand, this is due to the high degree of customer acceptance and, on the other, to the increased competitiveness over the previously dominant construction methods. Here, he also referred to the elevated level of investment in highly automated production technology in timber construction, which he believes to be spurred by trends in the timber and furniture industry, as batch size 1 and order-based production of furniture, doors or flooring demand flexible systems that can handle „standard“ but also „commissioned“ goods.

He emphasised that prefabricated housing/timber construction is on the rise worldwide and that there is still a lot of potential for further industrialisation in this sector. When asked whether there will still be enough timber in Europe in the future to be capable of implementing the ambitious plans in the construction industry, Dominik Wolfschütz confirmed that this is precisely the point that really concerns sawmill-related companies and processing firms. After all, due to climate change and increasing aridity, there will probably be less and less coniferous wood in Central Europe. He pointed out that while forestry applies forest conversion to create mechanisms to counteract this shortage in the future, this will still be a century's task.

Industrial construction

The lecture by Roland Kühnel, Managing Director of timpla by Renggli, dealt with "binge building" and answers to the question, how much serial production is good for us? He discussed in detail the conflicting issues of construction-climate-costs and spoke about the challenges actually involved in industrial construction. His credo: by tomorrow, industrialised timber construction must have reached the point where other industrial sectors are already today. This is about the digital integration of a wide range of processes and universal interfaces for all applications. As an example, he presented the company's new timber module plant with 20,000 m² of production space at the Eberswalde site near Berlin, where a very complex and flexible production is being set up. The mission: timber module construction on an industrial scale as a sustainable alternative for residential and commercial construction.

Panel discussion

At the end of the event, presenter Andreas Leopold Schadt assembled all the experts on stage, specifically selecting the highlights of the individual presentations and following up with each expert in more detail. Apart from the important aspect of data generation for production and environment, the question arose in the audience as to how components can be marked for identification in an automated process. Thomas Czwielong, the host, explained various approaches to solutions for use both upstream and downstream and in this context also referred to some stair or door manufacturers who are even going a step further by using RFID systems.

According to the unanimous opinion of the visitors on site, the event was a well-rounded affair and absolutely worthwhile. The first posts on social media were online the same evening.

Review Fair Formnext 2022

Additive Manufacturing -
We are well prepared.

At the eighth Formnext in Frankfurt in November 2022, more than 800 exhibitors from 96 nations showed how versatile Additive Manufacturing is and how the limits of feasibility expand further and further. Almost 30,000 visitors saw a multitude of world premieres and the meanwhile intensive use of AM in demanding industrial applications became evident.



**Sales engineer
Johannes Reiser
was there and shares
his impressions:**

Additive Manufacturing is a new technology for Reichenbacher and the goal of presenting us at the trade fair as a high-quality machine manufacturer was, in my opinion, excellently achieved. Many visitors know Reichenbacher from the milling sector and told me quite clearly that they think it great that we are now also applying our knowledge in the fields of AM and Hybrid Manufacturing.

There are competitors who have been present in the market longer than we have, especially in the field of standard machines for AM. However, we are a manufacturer of customised equipment, and this is exactly what we want to be in this new field of Additive Manufacturing. The visitors to our stand seem to have perceived this as such.

Our partners Hans Weber Additive and Siemens are indisputably "major players" in the printing sector who made first-class contacts for us at the fair. Therefore, this cooperation is undoubtedly a door opener, but we have quickly been able to gain a foothold as an independent exhibitor. Moreover, we were highly valued dialogue partners, especially on the topic of Hybrid Manufacturing. The cooperation with Siemens went down well, as many users work with Siemens software and controls in other processes, so this naturally entailed an immediate affinity.

Interesting enquiries came from the mould making industry, where they need large volumes of technical plastics and fibre-reinforced plastics, as precisely these components are very easy to print. Hybrid systems visibly impressed the visitors, among them many contract manufacturers who work with numerous printing but also milling machines in their production facilities. I had the feeling that hybrid systems will be the focus of new acquisitions in the future, as their advantages are obvious.

In addition, it was clearly noticeable that the users are interested in comprehensive overall concepts and do not, for example, just buy a single laser melting system and then assemble the peripherals themselves. The degree of automation was also a recurring topic, especially with regard to occupational safety for the operators.

Information with respect to extruder and material changes was also in great demand. Questions such as, "Is it possible to stop print jobs and restart them with a different material or to print with different materials in general?" kept coming up. Just like questions about the size of working areas, but also the desire for heated building space.

As a special machine manufacturer, we can implement many things, and the fact that there is a demand for this is a clear signal. Therefore, I am convinced that with our customised systems and our USPs, we will hold an important place in the market.

Preview Trade Fair LIGNA 2023

Making more out of wood.



The organisers say that they expect more than 90,000 woodworking professionals from all over the world to visit this fair to look for inspiration from innovative machines, systems and technologies from the entire woodworking value chain. You can find us in hall 27 at stand H40 from 15 to 19 May 2023.

TREND TOWARDS AUTOMATION

Two aspects will have an increasing influence in woodworking and especially in timber construction in the future. On the one hand, there is the necessity of even more sustainability in the building industry and the associated growing demand for timber construction. The trend towards urban consolidation, high-rise and multi-storey residential construction is unbroken, because there will be the need for much more living space in the coming years, especially in the cities. On the other hand, the continuing uncertainties on the skilled labour market are a burden for companies. There is great potential in timber construction, but how can industrially operating companies or craft enterprises work in a future-oriented way from this perspective?

Volker Budzinski, Director of Sales, emphasises, "We see the solution in automation, focus on it at the trade fair and show how it can be expedited with individualised machine concepts in woodworking and especially in timber construction." From the perspective of efficient automated production, we will present the VISION-ST machining centre with an automatic beam table that is loaded by a KUKA robot. In our live demonstrations, you will see a step processing operation where a robot picks up the blanks from a stack and automatically loads them into the machine. Following a separation of the individual steps and various saw cuts, milling and drilling takes place, and, in the end, the robot automatically stacks the finished steps.

Users from industry or trade have various reasons why and to what extent automation makes sense. "That is our task at the trade fair: We want to talk to visitors about intelligent concepts precisely tailored to their needs; no matter whether we are talking about the production of walls, ceilings, roof trusses, stairs or doors," emphasises Volker Budzinski.

There are many levels of automation. The companies' goal must be to increase efficiency on their existing production space and to make themselves less dependent on the market for skilled labour. What is needed are individual solutions, as there are users who are involved in purely regional construction projects and require different concepts than industrial companies that go into high-rise construction or concentrate on the manufacture of special components. Market events have set in motion a development in which, for example, companies are gearing their production towards producing large and heavy panels not only for their own construction projects but also to make them available to other market participants.

"Additive Manufacturing is yet another innovative topic we are addressing at LIGNA. We want to familiarize the trade visitors with this topic by showing the 3D printing of wooden components in informative videos and by demonstrating their quality by printed exhibits," adds Dr. Alexander Kawalla-Nam.

Mobility needs to change

TUfast e.V. - The Eco Team.



The muc022 gives an idea of what highly efficient cars in urban traffic could look like in the future.



The Eco Team after its successful participation with outstanding results in the Shell Eco-marathon 2022 energy efficiency competition (Netherlands).

They had the theoretical knowledge and a brilliant idea to boot: Five students from the School of Engineering and Design at the Technical University of Munich founded the TUfast e.V. association in 2002 to develop racing cars for Formula Student in practice.

The TUfast Eco Team complemented the TUfast Racing Team in 2011. The crucial difference: according to Linus Simons, Head of Management & PR of the Eco Team, this team is not about speed and performance, but its focus is clearly on efficient driving with low energy consumption. What has happened since then is a success story that continues to this day, as both teams have been winning awards in international competitions for years.

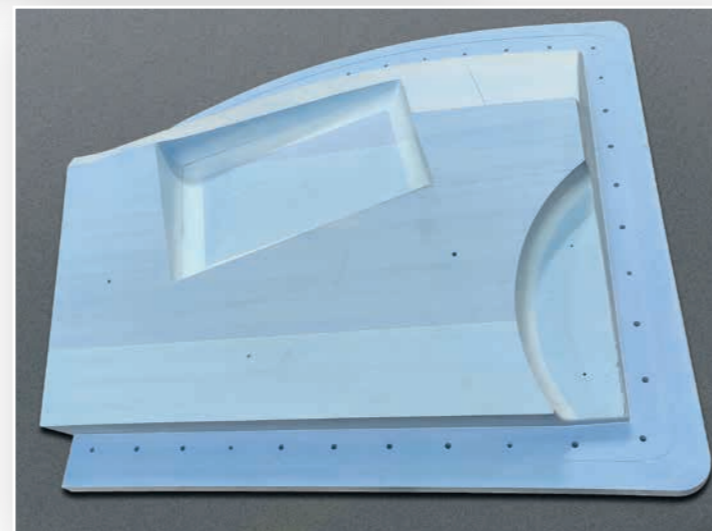
Student fluctuation means that the teams consist of different members every year. Large-scale recruiting events ensure that around 80 students from the faculties of mechanical engineering, electrical engineering, automotive engineering, computer science and business administration are currently participating. A uniform age structure, non-bureaucratic processes, ambition, flexible availability and, above all, commitment on a voluntary basis make working easy. Thus, people learn from each other in an attractive atmosphere and an interdisciplinary setting. What makes the project particularly exciting is that they build a completely new car every year. Based on the results of the previous year, they make larger and more complicated changes to the car and not just small improvements. Financing of the project is by sponsorship. Whether in monetary form by companies or grants from the Technical University of Munich or, as in the case of Reichenbacher Hamuel, through knowhow and human capital.

Reichenbacher thus actively supported the complex project. Linus Simons, "The trend towards the electrification of road traffic, towards more sustainability and greater efficiency is the motivation for us to demonstrate that more is possible. We want to show a sensible alternative for 5-seaters weighing tons, in which an average of 1.4 passengers sit, and for cars that put several times more weight on the scales than the driver. Although the car we have developed with a driver-car weight ratio of 50:50 is a prototype, we can clearly prove it: Mobility can be efficient and the road traffic of the future can make a decisive contribution to sustainability."

With this in mind, they have designed a central, stiff, lightweight monocoque made of CFRP for the 'Urban Concept Vehicle'. This required the making of a 7-part negative mould for laminating the finished monocoque in it. This multi-part negative mould in turn needs epoxy moulds itself, the so-called 'positive', and for exactly this purpose Reichenbacher milled five moulds as part of the sponsorship contract, explains Jonas Ohnemus, Technical Manager of the project in the Eco Team.



The VISION-II at the beginning of milling the blanks for the monocoque.



Milling result for one of the two side parts of the monocoque, the core piece of every Formula 1 car.

The collaboration began in the summer of 2021, when the Eco Team was looking for an established and experienced partner who could produce the sometimes very complex freeform. More precisely, it was about milling moulds for the passenger compartment (monocoque) from epoxy by Ebalta (EP138). The passenger compartment is the central and load-bearing structure and had top priority in the manufacturing process. "Especially with the moulds of the mono, we were dependent on absolute accuracy, high quality and reliability," Linus Simons points out.

Following the initial discussions and receipt of the documents, those responsible at Reichenbacher examined the size and complexity of the parts, explains Dipl.-Ing. Johannes Karl, Head of Design and Development at Reichenbacher, who played a key role in supervising this project. Once we had confirmed the sponsorship, the usual procedure began with the clarification of all details. The designer of the monocoque, for example, divided the CAD models into their respective layers to facilitate CNC machining. For the so-called flange blocks, which were intended for laminating the necessary flange surfaces (joining surfaces of the later negative mould of the monocoque), a table was created that contained the precise blank block dimensions. Moreover, they established drawings showing threads and external dimensions. There were clarifications about the maximum radii allowed on the inner edges of the moulds, and finally there was an exchange about the scribelines, which were important for the later lamination of the moulds. "Such an instructive exchange with specialists from industry is invaluable for us," Jonas Ohnemus compliments.

Once the CAD models had been adapted to suit the machine, Reichenbacher took over the programming based on the STEP files provided. Subsequently, the processing of the epoxy blanks took place at dimensions ranging from 700 x 300 x 150 mm to 1,300 x 1,200 x 400 mm. Then, milling was carried out on a VISION-II 5-axis, as the large working area of this series of 6,200 x 1,600 x 400 mm means that the production of most parts is possible without additional segmentation. "Since the machine has been designed for machining aluminium parts and therefore operates without clearance and at high dynamics in all linear and rotary axes, the VISION particularly fulfils the requirements of mould making in terms of rigidity, accuracy and surface quality," Johannes Karl specifies.

The parts were then ground, chemically treated and laminated, and the CFRP tools laminated to the moulds assembled with little effort to create the negative mould for the monocoque of the highly efficient Urban Concept Vehicle. "We, as the people responsible, were aware that the sizes and weights of the parts to be milled, in particular, as well as the necessary free-form surfaces, presented a special challenge. The fact that the milling was done in such a short time for a student association shows clearly that we have made a really great catch with Reichenbacher as our sponsor," Linus Simon and Jonas Ohnemus emphasise in unison.

Rhinos in feel-good mode

Impressive pagoda at Berlin Zoo.



The complexity of geometrically demanding structures in combination with fair-faced concrete is a remarkable challenge. The impressive pagoda in the entrance area of the new rhino house at Berlin Zoo is an example for such a feat, as is a school building in Bavaria, where pretty much everything is round and there is hardly a straight wall to be found.

Glass Bauunternehmung, based in Mindelheim in the Allgäu region, is responsible for the formwork construction in both projects. For the Berlin rhinos, a round enclosure with a diameter of 52 metres will be realised, featuring a tower 25 metres in height and made from fair-faced concrete dyed red. For the implementation 100 m² of filigree special formwork including battens and joints was required, which consists of individual small-scale boxes. In the new water basin, too, all the steps perfectly suit the stride length of the Indian rhinos, for which all the formwork bodies have also been precisely adapted.

Spectacular geometries

In the current construction project for a grammar school, the Wilhelm-Hausenstein-Gymnasium, managed by the building department of the City of Munich, the unusual geometry of the ground plan, which from above looks like a ship's propeller or a multi-leaf clover, requires four different wall formwork systems and many special formworks. There is the necessity of mounting about 900 iso-cages as connections for the steel balconies and complex reinforcement installations to the smallest tolerances. Especially the many radii and stagger irons with diameters up to 28 mm require a great deal of skill. The same applies to the 9,000 m² of subsequently installed, non-load-bearing sand-lime-brickwork and the sports hall ceiling in a composite steel construction with a span of 32 metres.

In the case of public contracting, it is always a matter of finding a macroeconomic solution. How a company rooted in Germany can compete with this is easy to explain. The services of the company, which was founded in Mindelheim in 1948 and currently employs around 800 people, cover all areas of construction: industrial, structural and civil engineering, turnkey construction, power plant building and a prefabrication plant are among them. In the field of structural engineering and turnkey construction, the VISION-III-TT 5-axis machining centre with grooved HPL table surface, which has been in use in Mindelheim for about a year now, increases Glass' competitive advantage by a considerable margin, in terms of accuracy, as well as speed and flexibility in formwork production. "Today I can honestly say that the trickier construction projects are, the better they are for us," production manager Josef Dölle is full of praise. He adds, "We are involved in projects throughout Europe that others keep their hands off." The more extravagant the architectural designs are, the more complex the formwork bodies become, which are made of solid wood and chipboard.

For the construction of this tower 25 metres in height in Berlin Zoo, 100 m² of filigree special formwork was required.

Unlimited scope of configurability

What were the arguments in favour of this series and technical equipment considering manufacturing technology? Our area sales manager Florian Mauch describes this as follows, "The requirements themselves were nothing spectacular. Those responsible at Glass wanted a 5-axis machining centre with nesting operation, which had to comply with the maximum plate sizes of 2.50 m x 5.50 m. In the overall concept, a lifting table and a printer unit were to be realised on the loading side and a discharge table with brushing and push-off station on the unloading side. Before long, I understood that there would be a 30 per cent time loss if we printed directly on the press. This is why we implemented three stations: a lifting table with printer, then the CNC system itself plus the discharge table." The elevated cable chain in the X-direction resulted from the logic of combining three machines. "Very often, Mr. Mauch was a source of ideas for us. Several times he pointed out how to optimise processes," adds CNC programmer Gerhard Birkle. "This and the comprehensive options for configuration at Reichenbacher made the decision easier than expected after two years of planning."

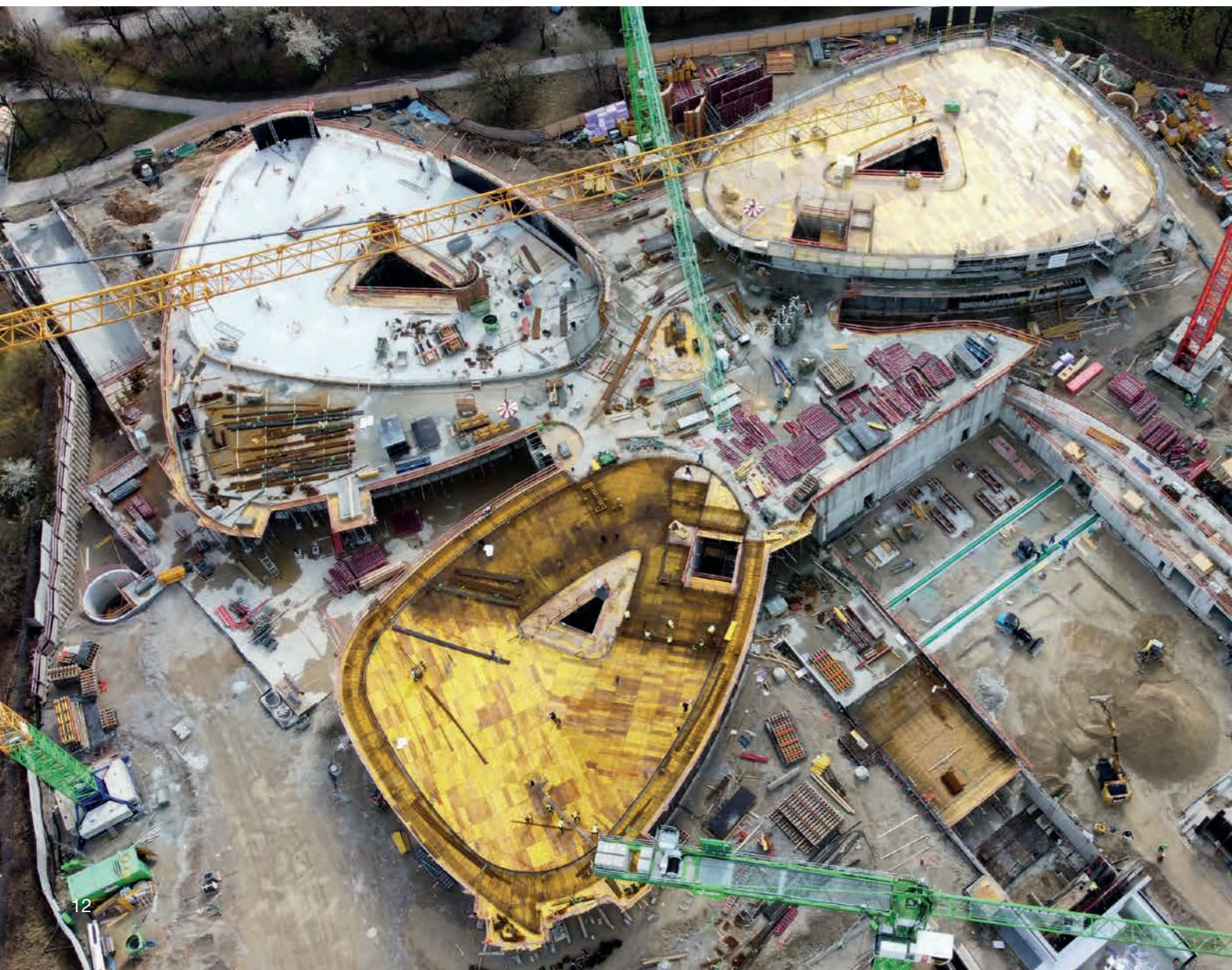
For a year now, milling of all the components for the formwork bodies has been from coated or raw chipboard and birch multiplex panels. Round covers with a diameter of 70 mm are milled from small raw panels, for example, while Vario elements for fair-faced concrete surfaces with pre-drilled holes or recesses for windows or doors are milled from the 2.50 m x 5.50 m formwork panels (Westaspan MF or Betonplan top). The 5-axis unit carries out milling and sawing work; there exists an additional multi-spindle drilling gear for drilling rows of holes and construction holes.



Glass production manager Josef Dölle, machine operator Daniel Scheuber and CNC programmer Gerhard Birkle in front of the new 5-axis machining centre from Reichenbacher.



A lifting table with printer unit was realised on the loading side of the machining centre.



Formwork provides the shape

Three colleagues are responsible for the computer-aided planning of the 3D formwork bodies that give the concrete its shape. The more geometrically complex the formwork is, the more flowable and at the same time pressure-resistant the types of concrete used must be. In this context, statically relevant components are often from special high-performance concretes; for the rhino house, the choice was a concrete dyed red. Most of the formwork at Glass is complex and unique, and this is no longer economically feasible with conventional machines, neither in terms of accuracy nor of speed.

Speaking of time: after the project award, there remain often only a few weeks or months, until construction starts. During this time, the concept is developed and it is determined exactly what the formwork is to look like and how many pieces of formwork are actually needed; position plans for the building site and a construction plan for the formwork hall are drawn up. Then follow the programming, nesting and production release for the parts. A simulation usually only takes place for nested panels or for very complex individual parts. Efficiency on the construction sites is enormous due to the high degree of prefabrication. As all incoming components are marked with a numerical code, every employee knows immediately where which component goes. The same applies to individual parts assembled on site. "We like these challenges. True to the motto: the crazier the better," Josef Dölle sums up.

Fascinating ground plan that looks like a ship's propeller from above: the building project for the grammar school Wilhelm-Hausenstein-Gymnasium in Munich.



Discharge table with conveyor belt for components and waste.



Daniel Scheuber operates the 5-axis machining centre with nesting function by means of a modern Siemens control system.

La qualité n'est pas un acte, c'est une habitude

Quality is not an action but a habit.

ELYOTEC, founded by Christophe Huck in 2007 and Reichenbacher's service partner in France since 2018, has its headquarters in Wissembourg near the German border. Employing about 10 people, the company specialises in the integration of industrial solutions and the improvement of production processes in the field of non-ferrous material removal and wood processing.

The most important thing for clients is always a holistic perception of their projects. Precisely this approach is in perfect conformity with Reichenbacher's corporate philosophy. Our declared goal is always to support customers in all phases of their projects: starting from the enquiry and the expert analysis of the necessary requirements, via proposals for solutions and the elaboration of comprehensive concepts, through to the assembly, commissioning and maintenance of the complex CNC systems.

The French specialists can draw on extensive knowhow in the machining of wood, aluminium, composites and plastics with complex CNC equipment. On top of that, there is their considerable knowledge about laser projection and measuring. For this reason, ELYOTEC is at home in a wide range of industrial sectors and a valued business partner.

The employees must possess a large scope of technical experience, from electrics, mechanics, mechatronics, electrical engineering and pneumatics to PLC programming, in order to ensure consistently high quality in all of this. As our service partner, the ELYOTEC team handles and ensures the installation and commissioning of all Reichenbacher systems and equipment in France. The qualified technicians form a perfect interface between the service department at Reichenbacher and those at other partners.

Customer relations in France are excellent thanks to the local service, which is quick to respond and has a perfect knowledge of all CNC series. The activities as a service partner include the hotline, preventive maintenance, the sending of spare parts as well as the repair of components, the retrofitting of systems, installation and commissioning. ELYOTEC's experts provide further support, such as 3D measuring, training and the sale of new and used machines. They assist customers in many different ways throughout the entire life cycle of the machines and systems.

In 2019, ELYOTEC took over the company EEPI Robotics with about 20 employees, which focuses on the design of special machines based on robot arms. The requirements of customers from many different industries are becoming increasingly complex. This merger permits the implementation of even more comprehensive solution concepts.

The project at Aru Grupp AS (page 16+17) impressively shows how ELYOTEC and EEPI, together with Reichenbacher, have realised a very interesting technology solution using a robot with a complex gripper system. The equally customer-oriented approach of everyone involved made the project a complete success.



Technician Thomas repairs everything and sometimes "disappears inside a machine".



The colleagues from ELYOTEC use high-tech equipment to relocate large CNC systems by truck and thus ensure satisfied customers throughout France.

In January 2018, the ELYOTEC team travelled to Austria for a ski weekend. Exactly on the same weekend and in the same ski region, they happened to meet some colleagues from Reichenbacher. Coincidence or fate? Anyway, it snowed so heavily that weekend that it was impossible to leave the ski area. They made the best of it and the two teams spent more time together than originally thought. What is the outcome when you have extra time at your hands? You talk about professional and private matters and get to know each other better. Thus, bonds were established that have been the basis of an honest and very trusting cooperation since 2018.

REICHENBACHER HAMUEL

SERVICE PARTNER

Fully automated staircase plant in Finland

Nordic individualists.

A man with vision: Juhan Viise, Managing Director of the Aru Grupp, set himself the goal in 2021 of developing his company into the most modern, fully automated staircase plant in the whole of Europe over the next few years. This is nothing out of the ordinary, but then the real story begins.

The company Aru Grupp is located in Hulja near the Gulf of Finland in Estonia and thus, strictly speaking, only 133 km from the Russian border. A member of the EU and of the Eurozone, Estonia is now one of the richest countries in Eastern Europe and has great purchasing power. One of these Nordic individualists, as the Estonian Tourism Centre calls them, is Juhan Viise, who started out two years ago to make his vision a reality.

His first call was to Davis Müller, whom he had known for over 15 years. Although 'know' is perhaps the wrong word, as the relationship is not only very personal but, above all, also characterised by a great deal of trust. Davis Müller knows the company like the back of his hand. Founded in 1993, with about 200 employees it has made a formidable name for itself in the timber industry over the last 25 years. Aru Grupp, the largest stair, window and door manufacturer in Estonia, operates a log house and a glulam component plant but also produces high-quality products from solid wood, which it exports on a global scale.



Davis Müller talks about his experiences

Juhan Viise told me in our first telephone conversation that he had the following idea: In the future, he wanted to produce his stair steps completely ready-to-use and entirely unmanned, i.e. fully automated. The requirement: Each stair step must not run on the system for longer than one minute. In other words: Davis, give some thought to how we can get this done.

This is exactly how projects unfold for us: rough requirements are stated and we, as mechanical engineers, then have to work out a solution. The whole project planning took about a year, with many discussions, often digital because of Corona, repeatedly new approaches and, above all, with excellent partners. Apart from the teams at Aru and ourselves, I include our French service partner ELYOTEC and their sister company EEPI Robotics in particular. Not to mention COMPASS, without whose software solutions this huge plant with its complex CNC system and robot loading would never have been up and running. The team spirit was thrilling for everyone and was characterised by a respectful casualness in dealing with each other, where everyone acted as a source of inspiration for the others, and where everyone trusted the others.

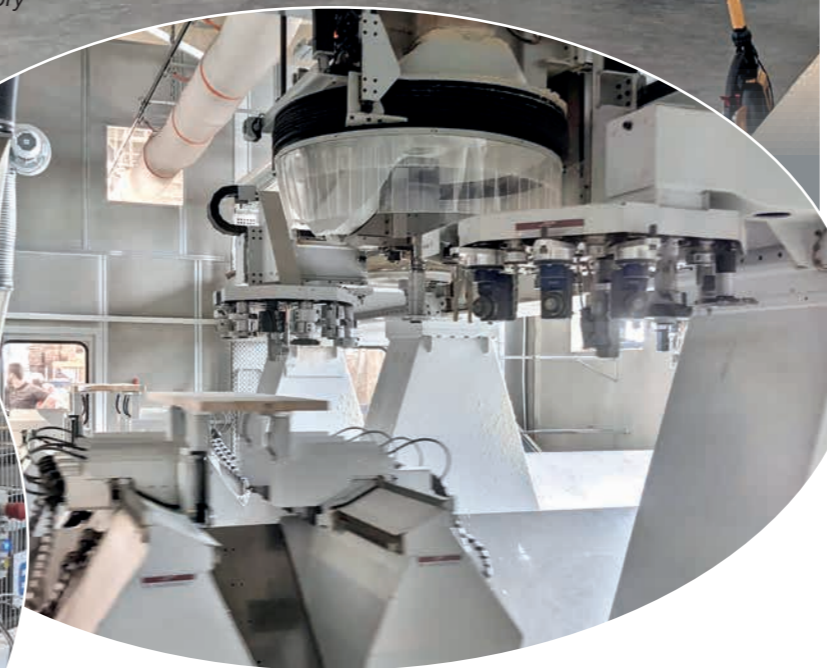
It is important for me to mention one thing: In sales, you do not just have to sell; for a successful project, you have to bring the right partners together. When the initial discussions with Juhan Viise and his team gave me an indication of the direction things were going to take, I took on board our French service partner ELYOTEC. Their knowhow in the timber industry combined with EEPI's automation technology was the most obvious solution for me. As it turned out, the cooperation could not have been better, because ELYOTEC and EEPI, just like us, address customer requests very individually. Thus, experts worked hand in hand, sharing the same ductus in the way of progressive thinking. It hardly gets any better than that. The result was a unique plant concept that has been in operation in Estonia since 2022 and is running fully automatically in three shifts.

The choice was for an ECO, as this series from our portfolio can be 100 per cent tailored to the customer's needs. No matter, how many units we need, what size the components are or what material is to be processed. Moreover, the shuttle table solution makes robot loading extremely efficient. A little anecdote on the side: In the middle of the project (the machine had already been built), Aru asked for bigger tool changers after all. Owing to our great flexibility at Reichenbacher, we have been capable of doubling the number of tool places. Moreover, it was still possible to take requests for additional technical equipment into account. Given a total floor space of about 15 x 20 metres including the EEPI robot, which can handle door leaves weighing up to 150 kg with its complex gripper system, the CNC system now has two 5-axis working units with two tool changers with 24 places, each, and two 3-axis units, which are loaded via two 12-place tool changers. In my opinion, Juhan Viise and Aru are already among the leaders in terms of the modernity of their machinery.

Commissioning of the ECO special plant at the customer's factory with the EEPI team.



Fully automated stair step production in 3-shift operation.

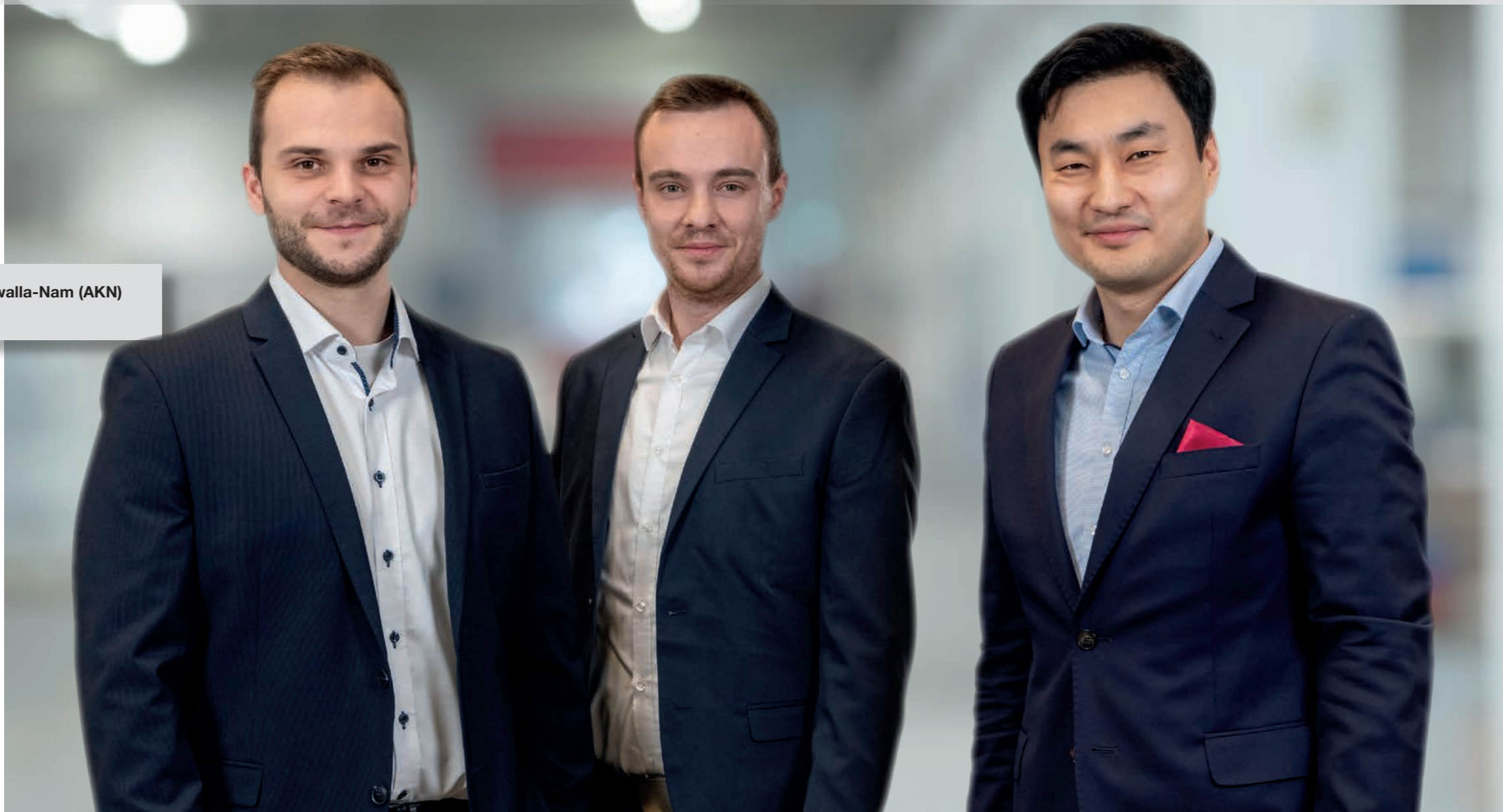


View into the machine with two identical aggregate groups and the special tables for steps and doors.

Do not talk but get going

In the context of our series "Employees at Reichenbacher".

Lukas Gahn (LG), Steven Schmidt (SS) and Dr. Alexander Kawalla-Nam (AKN) in conversation with the Insight editors.



Interviewer (I): How did the idea of setting up an independent department for Additive Manufacturing arise?

AKN: AF/AM has been an emerging and innovative manufacturing process for years. Our management recognised the potential and, as part of our strategic orientation, decided to create this independent sector from 2020 onwards. In my capacity as Head of Additive Manufacturing Technology, I had been involved from the very beginning and my task has been and still is to compose a team with the appropriate expertise and to further the development of the product portfolio.

I: What are the most important requirements for this task?

AKN: Above all, you need detailed expert knowledge. I spent the first three years developing optimum work processes in order to achieve the goals we had previously defined. This concerns not only determining the organisation but also defining the process flows. Additionally, I had to establish the preconditions for integrating the department into the existing company structures. Moreover, as head of department, it is up to me to lead the team strategically in such a way that the expertise of my staff is mutually complementary.

I: What does the team accomplish, now and in the future?

AKN: In order to get a product portfolio with USPs, we have to perceive the requirements of the market and of the customers very precisely and to apply appropriate measures to incorporate our knowledge into our machine developments. Our work is a dynamic process that creates synergies, as we use the knowhow of Reichenbacher's design engineers, who in turn benefit from our expertise. Thus, we can continuously optimise and enhance the products and force new developments in order to be competitive on the market.

To ensure this, the core team of Steven Schmidt, Lukas Gahn and myself gets support from three other colleagues: Johannes Reiser, technical sales and key account, Dieter Vonderlind, assembly and manufacturing, and Jurij Welk, software and standardisation, who assists us in the area of PLC and software development.

We have asked the colleagues to complete the following sentences in order to get to know them a little better:

I: I have been a member of the team...

LG: ... since 2022 as a development and application engineer and most fascinating about this work is that I am facing new and multifaceted tasks and challenges every day. Following my studies in Aachen and 3.5 years at the Fraunhofer Institute for Laser Technology, I have found the perfect conditions for continuous professional development here – which is particularly important in the field of AM, as this technology is subject to constant change.

SS: This I can only confirm, because I have also been with the company since last year as a development and application engineer and I consider my tasks exciting, as they provide me with the opportunity to optimise machines and processes in terms of their function and scope and to monitor the resulting outcomes continuously.

I: With Reichenbacher it is important to me that...

LG: ... team spirit and a positive atmosphere are of high priority and put into practice in the team. Because only when this is the case, you can contribute your individual strengths and cope well with the daily challenges.

I: The most important equipment in my job is...

SS: ... my laptop.

I: The best affirmation in my job is when...

SS: ... my ideas become reality and work in the end.
LG: ... my own suggestions lead to a functioning overall result and I realise that I have contributed to the success. Then there are all the small steps forward, and at the end of the day, a positive customer feedback.

I: If there were a working motto, what would it be?

SS: Everyone said: That is impossible! Then someone came along who did not know that and just did it.

I: What would be indispensable in your life?

AKN: I do need challenges! I cannot imagine a life without challenges. My motto: Do not talk but get going. There are no problems, just challenges; this attitude to life is certainly one of my strengths. I also like strategic planning. Another helpful attitude to life of mine: I am convinced that there is strength in keeping calm. Respectful interaction is also important. After all, success is always a combination of all efforts and never the merit of a single individual. This also includes gratitude and the recognition of these achievements.

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