

2018/2019

M TEC

THE MAGAZINE OF THE
FÖRDERVEREIN DER
DEUTSCHEN MÜLLERSCHULE E. V.

4.1

4.5

4.2

Fully thought- out

Field of application:
plant engineering

Page 6

Widely travelled

From India
to Braunschweig
via France

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Editorial



Milling and plant engineering

Dear friends of the Deutsche Müllerschule Braunschweig,

the International Grains Council (IGC) estimates global consumption for the 2017/18 marketing season at more than 2.1 billion tonnes of grain. About 60 percent of our daily energy requirements are covered by grain, writes the Miller Magazine. Millions of people and thousands of mills process this grain so that people can get their daily bread.

In this edition of the MTEC we look behind the scenes: Mills are needed worldwide to process these masses of raw materials. Their planning and construction is the task of the state-certified technician in the field of mill construction, grain and animal feed technology. Graduates of the German milling school Deutsche Müllerschule Braunschweig (DMSB) ensure intelligent plants that grind large quantities of wheat or rye using the latest technology. Or perhaps process a large number of cereals including old varieties such as single grain, spelt or emmer into small batches of specialities. They are just as capable of building a compound feed plant, as a large part of the grain is needed for livestock.

Even this small insight into the possibilities shows: Mill construction is a task that is as responsible as it is versatile and demanding. The world is open to graduates of the Deutsche Müllerschule Braunschweig, as it were, as this offer is unique globally. So no wonder that many alumni grasp the opportunity to work abroad after their graduation. Also many young people come to the DMSB from around the world, we will present some of them to you in this magazine. And so that we can present ourselves better internationally, the MTEC is also available for download in English from this issue on.

We hope that more journeymen from the technical professions will find their way to Braunschweig. The DMSB can also be a springboard for metalworking professionals or technical draughtsmen – to a mill, a feed company, but also to any other company that sorts, shreds and conveys. Become ambassadors of the Deutsche Müllerschule Braunschweig! Motivate young people to set course for their future here. In this MTEC you will find some convincing arguments.

“Glück zu!” (Traditional German miller’s greeting)

Alexander Schnelle

Chairman of the Board of Trustees of the foundation Förderverein der Deutschen Müllerschule Braunschweig e. V.

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Intake

Cleaning

Milling

Storage & Blending

Bagging

PANORAMA

Fully thought-out –
Field of application: plant
engineering 6



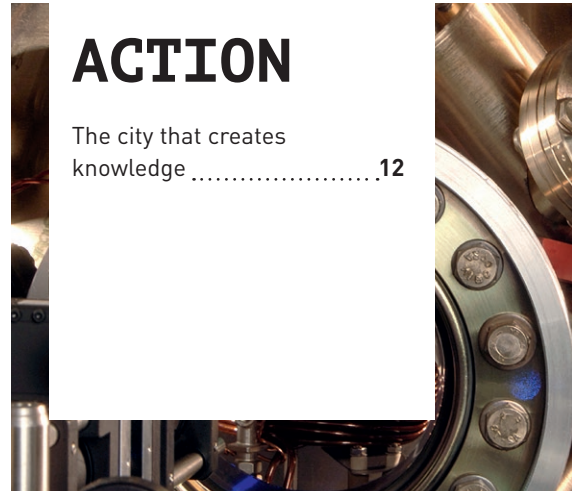
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FULLY THOUGHT-OUT

Turnkey handover

- Acceptance
- Further support and service

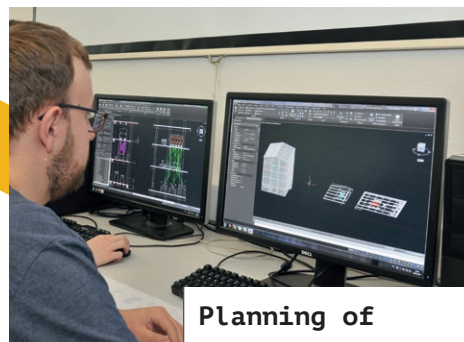


Storage,
packaging,
mixing



Customer dialogue

The first step is the customer discussion with the needs analysis, followed by an offer with a rough drawing.



Planning of

- Process sequence/processes
- Machine requirements
- Calculation

Plant engineering is a large field of activity for graduates of the DMSB.

That is unique worldwide: Graduates of the DMSB specialising in "Milling-related plant engineering" not only understand machines and process engineering in the milling industry, but can also design, build and service complete plants – for flours, animal feed and special milling. This sets the Deutsche Müllerschule Braunschweig (DMSB) apart from all other international educational institutions.

"Anyone who specialises in plant engineering and construction, for example, will later work as a project manager and rebuild or convert mill and animal feed companies," explains Silvia Hübner. She herself works full-time as a project manager at Bühler in Braunschweig, she teaches plant planning, project management and engineering at the DMSB part-time. When planning a new mill the understanding of technology and processes is indispensable. "Only if you understand the process can you plan properly. Therefore, the objectives of the company and the necessary procedures must be discussed in the preliminary discussions of the offer. Will several or only a few products be milled? Will production be continuous or in batches? What are the plans for the product portfolio?"

The project manager pulls all the strings

The process flow, machinery and degree of automation are derived from the answers. Together with information on spatial and structural conditions, this data is included in the calculation, which, together with an initial rough drawing, forms the basis of the offer. →

Creation:

- technical data sheets
- Manuals
- Logs
- 3D model
- Installer briefing



Possible further processing and homogenisation



Milling via various passages, sieving via plansifter



Redistribution, mixing and fine cleaning



Pre-cleaning and storage

While observing:

- Hygiene regulations
- Energy efficiency
- Static and structural conditions

Practical competence

Especially in plant engineering, the teaching team is strongly supported by external lecturers:

- › **Silvia Hübner, Bühler (Braunschweig)** teaches plant planning, project management and engineering.
- › **Dr. rer. nat. Klaus-Dietrich Neumann, IFF THUNE (Internationale Forschungsgemeinschaft Futtermitteltechnik e. V.)** teaches compound feed production and feed technology.
- › **Thorsten Lucht, F.H. Schule Mühlenbau (Reinbek)** teaches process technology and special milling.
- › **Stefan Lungwitz, Amandus Kahl (Reinbek)** teaches feed plant planning.
- › **Andreas Ebertz, Bühler (Braunschweig)** teaches plant design and technical communication/computer-aided design (CAD).
- › **Dipl.-Ing. Ernst-Henning Kracke, freelance civil engineer,** teaches statics and strength theory, silo and mill construction.

When the order is placed, the milling technician plans the entire plant from the acceptance of the grain to the packaging or dispatch of the end products.

“Some stations are obligatory in milling operation”, explained Uwe Schulz. As a permanent member of the faculty of mathematics, physics, mechanical engineering, automation, electrical engineering, measurement engineering and control engineering, he plays a major role in training in plant engineering. “In the first step we always have the delivery, rough cleaning and storage of the grain. Before mixing there lies a multi-stage fine cleaning process. Depending on the product, the actual grinding process then takes place over several passages, possibly followed by refinement. After the quality control the finished product is delivered. All process steps are characterized by high demands for measurement and drive technology, automation and process data processing.”

All plans in 3D

The devil is in the detail. Processing varies greatly depending on the flour or feed – process knowledge is therefore essential. “Engineering today is done completely in 3D. The system planner must cooperate with the structural engineer or architect to ensure that the inclines are right and the machinery fits statically. The operating zones and the access to the machines are important, as well as the later cabling. A milling technician also has to understand the electrical planning”, Silvia Hübner explains the diverse roles of the milling technician. “We do not go into depth in all points, but our graduates

have basic knowledge in control engineering, electrical engineering and automation technology. They also know about drive technology and industrial networks”, added Uwe Schulz. The focus is also on energy efficiency, especially in animal feed companies, which with their specific machinery can have a much higher energy turnover than flour mills.

Automation also plays its part

“Once the plant is built, it is usually handed over on a turnkey basis. So acceptance tests and commissioning are also part of project management”, Silvia Hübner reports from her professional experience. This is accompanied by documentation in electronic form and on paper: Data sheets, 3D models, handbills, assembly plans, circuit diagrams and the like also fall into the area of the system planner. “Even if they don’t draw the network plan themselves, at least they have to understand it”, added Uwe Schulz. In practically all operations, also for animal feeds, automation is an important topic. “Theoretically even a closed system is conceivable, which regulates itself. The scenarios described under the keyword “Industry 4.0” will also be reflected in our industry.”

The trend towards preventive maintenance has also arrived in the milling industry. “Sensor technology, which determines a certain degree of contamination or wear, already makes preventive maintenance measures possible today,” reports Uwe Schulz. Self-ordering silos that send orders directly to the mill or feed plant are also already a reality. Even the mill is now a smart factory, which requires smart planning. The further training of technicians at the DMSB makes an important contribution to this. 



Nuestro mundo es único: solo en el instituto DMSB, ubicado en la ciudad alemana de Brunswick, los alumnos pueden estudiar ingeniería de plantas relacionadas con la molturación. El acento se pone en la planificación de un molino para trigo, alimentos para animales y otras materias primas. El que se gradúa suele comenzar a trabajar como gestor de proyectos en todos los campos de la producción de alimentos, pero también en la tecnología de almacenamiento y material a granel, en la industria química o en la industria del reciclaje. También es posible en otros sectores de la molturación, como son aquellos relacionados con la separación, la clasificación y el procesamiento, la trituración, la granulación y el peletizado, la separación, la medición y el mezclado. El gestor de proyectos necesita conocer los diferentes procesos, saber de automatización y construcción de edificios, control y tecnología de redes. La ingeniería y la planificación se realizan completamente en 3D. Las aplicaciones de fabricación inteligente, por ejemplo para el mantenimiento predictivo, también forman parte del programa.

PROCESS ENGINEERING – FROM THE MILL TO RECYCLING



Ulrich Leisentritt



For Ulrich Leisentritt, training at the German Milling School was, so to speak, genetically pre-determined. "My father was already in Braunschweig from 1951 to 1953. I had DMSB right from the cradle, as it were," explains Ulrich Leisentritt with a grin. He decided to focus on "Milling-related process engineering", which interested him most right from the very beginning. He still benefits from this time today, with his current employer, TrennSo-Technik.

After graduating in 1988, he spent several months at the Federal Research Institute for Grain Processing in Detmold. He then worked for a weighing and plant engineering company in Augsburg before joining Happle, now called Hamatec, in Weissenhorn, Bavaria. In this company, which mainly manufactures and sells machines for sifting, screening and heavy particle selection, he initially started in the grain and miller sector. Ulrich Leisentritt remembers: "In 1994 I changed to the relatively new area of 'Environment/Recycling Technology'. At some point, the switch to Trennso Technik was a logical step. Additionally, the paths were short. We knew each other personally, because both companies are located in Weissenhorn."

Off to new realms: Recycling, bulk materials and food.


The DMSB graduate joined TrennSo Technik as a project manager in 1997. As a globally active medium-sized company, TrennSo-Technik has been developing solutions for the recycling, bulk material and food sector for more than 30 years. "With the various screening machines, separating tables, air classifiers, dosing systems and conveyor systems, which are implemented as individual machines in modules or in complete plants, we offer a solid basis for a profitable and valuable investment in the future", Leisentritt explains the core competencies of the company, for which he has been an authorized signatory since 2009.

For about ten years, his activities have shifted to sales. After joining TrennSo, he drew his own projects on CAD – mainly in the field of recycling and bulk materials technology. Until the company received more and more inquiries from the food sector about five years ago. "We could clearly feel the large, interested market for this. Good separation technology considering current hygiene standards is a major topic at the moment. Our decades of experience in plant engineering makes it much easier for our customers on larger projects."



Back to the roots

Through the interface to the food industry, the DMSB graduate gradually returned to the roots of his training. A perfect mixture for him: "Meanwhile, I spend at least three quarters of my time in the food sector and I enjoy it very much. Over the last five years, we have won many exciting and well-known customers from the confectionery production, spices, herbs and tea processing sectors and have supplied first-class plants that are also tailored to demand. One of the decisive factors here is our modern technical centre, where we can work with our customers to determine the optimum process sequence for the respective product."

In the coming years, a large number of old plants will have to be converted. So it remains interesting for the experienced process engineer with a milling background. He gives today's DMSB students important advice: "Always keep your eyes open. After the wonderful practical training at the DMSB, there are so many possibilities to go to other industries later on. Today, good and practically trained process engineers are needed everywhere. And who knows: Maybe I will soon get a young colleague from the DMSB. I would be very happy about that." 



FROM THE MILL INTO PROCESS ENGINEERING



Anne Jette Winter



Anne Jette Winter started her career with training at a market leader, the Aurora mill in Hamburg. As a trained process technologist in the milling and animal feed industry, she first went to Kölln Flocken for a year, where she worked on the baking line and the extruders. But here thirst for knowledge had not yet been quenched: "After that, I went to the DMSB to broaden my horizons and continue my education." She had no concrete goal in mind, and so she graduated from the German Milling School – both technician and the master.

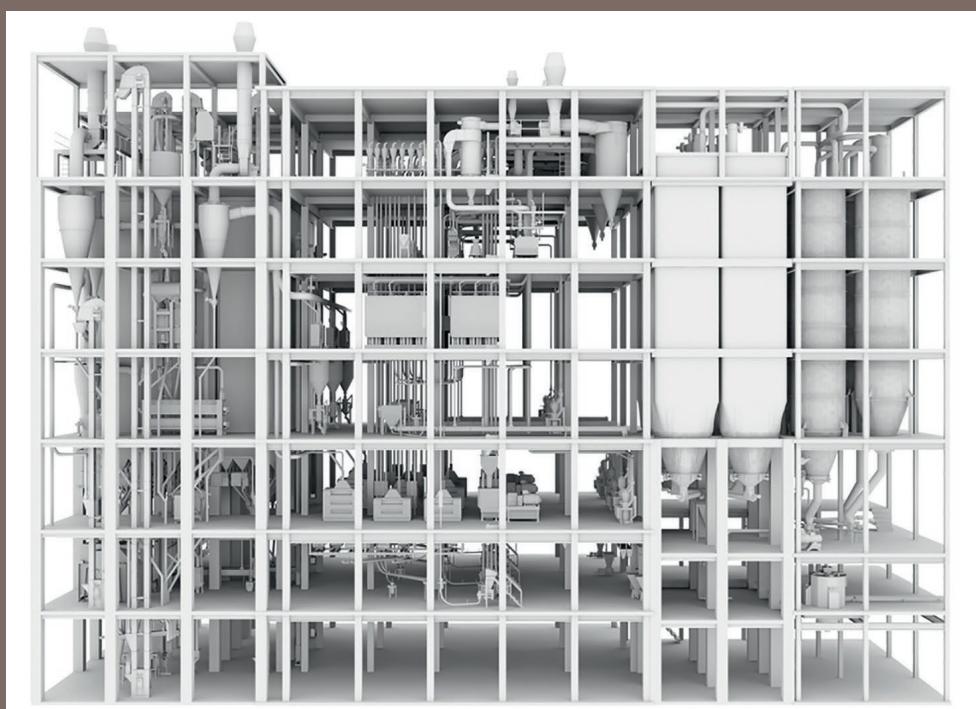
"As far as career opportunities were concerned, I was completely open to everything," recalls Anne Jette Winter. She looked at current tenders and came across Buhler. "That sounded very interesting and I thought: Yes, I can imagine that very well." Now she is a junior project manager in mill construction and very satisfied with her choice. "I really enjoy my job. Through the project work I see many different plants and have very varied tasks." She supports the modernization and

construction of new mills in Germany and Eastern Europe.

Personal development at the DMSB

In Braunschweig she received not only the specialist knowledge but also the self-confidence. "I was able to develop myself further at the DMSB. For example, we often had to give presentations, which made me much more confident appearing in groups." In addition, many contacts were made in other areas, as the entire spectrum of milling comes together at the DMSB.

"I made friendships there that last far beyond my studies," says the technician. Through membership in 'Glück zu' contact with many "old" comrades-in-arms has also been maintained. Anne Jette Winter recommends advanced technician training to anyone who would like to continue their education in a variety of ways. "Particularly millers who are interested in a job overseas should go to the DMSB. My assignments abroad have shown me that the Deutsche Müllerschule Braunschweig is internationally very well known and highly recognized." **M**



The city that creates

KNOWLEDGE

Science site Braunschweig

From the magazine *Wirtschaftswoche*: "There is hardly any other region where so many first-class research institutes are concentrated as in Braunschweig". In fact, around 15,000 people work in research here. 27 institutes and 250 high-tech companies ensure a close network in conjunction with the Technical University and many other educational institutions. These include an aerospace center, a research airport, the Salzgitter Mannesmann Forschung GmbH and chip developer INTEL.

There are a number of institutes directly related to milling whose regular excursion destination is the Deutsche Müllerschule Braunschweig.

These include, for example the institute of animal nutrition ITE, the Friedrich-Loeffler Institute (FLI), and the federal research institute for animal health (Bundesforschungsanstalt für Tiergesundheit). Feed science and evaluation are important fields of knowledge in the milling industry, after all, the mills also produce compound feed. ITE researches in this area and therefore is an important information source for existing personal contacts.

Another institute which focuses on animal nutrition is the IFF, an international research association for feed technology. The IFF was founded as part of an initiative of the Professional association of the animal feed industry. In the Thune district the institute is engaged with basic research on technological issues of compound feed production. The ongoing development of process engineering is the focus of the scientific work – one of the core competencies of the DSMB.

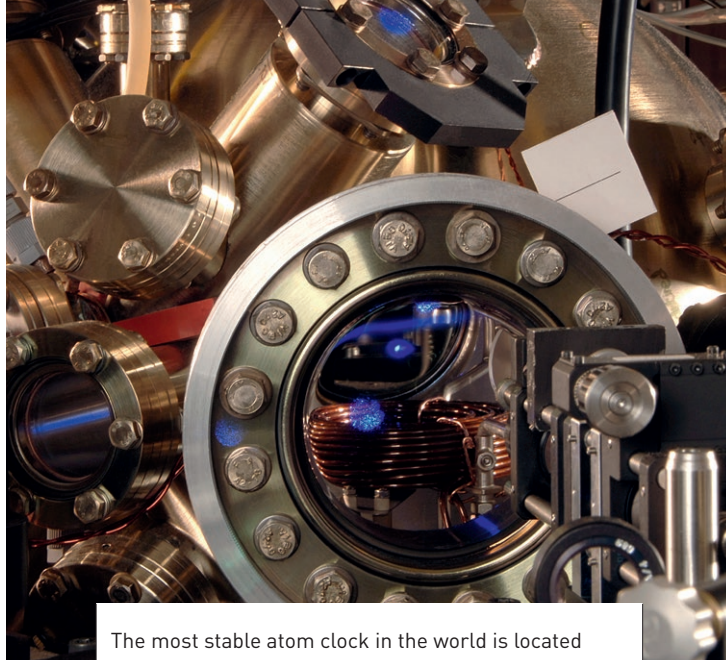
Less obvious is the connection between the German milling school and Germany's national metrology institute PTB. Atomic clocks, linear dimensions, calibration weights – this is where measurements and calibrations are carried out. It is the highest authority in all questions of correct and reliable measurement, and as such is also a popular excursion destination of the DMSB, because as the highest authority it is also responsible for the calibration capability of the moisture meters. These are essential for the trading and processing of cereals.




The "national kilogram" is the measure of mass and is available at the federal physical-technical institute PTB (picture: PTB).

Because of its relationship to agriculture the Julius Kühn Institute (JKI) is interesting for the DMSB. This independent federal higher authority conducts research and advises on all aspects of cultivated plants. These include cultivation, soil science, crop protection, harvesting and stock conservation – the latter a very interesting topic for mills when it comes to pest control, for example. JKI has been investigating the long-term effects of agriculture and pesticides in endurance field tests for over 20 years.

The Johann Heinrich von Thünen Institute is also active in agriculture. Fields, forests and seas are the three research areas of the institute. How do agricultural and forest ecosystems react to climate change? How does it change the marine biocoenoses? Which technical innovations make renewable raw materials particularly effi-

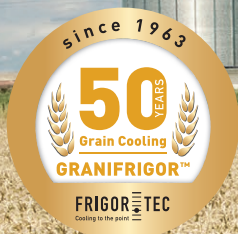


The most stable atom clock in the world is located at the PTB in Braunschweig (picture: PTB).

cient? Conserving resources while guaranteeing care and quality of life is one of the institutes tasks. And a lot more besides. 



Brunswick es un lugar imprescindible para la ciencia: muchos institutos se han afincado aquí, en la Universidad Técnica, al igual que compañías de alta tecnología como Intel. 27 institutos, 250 empresas de alta tecnología y 15.000 empleados en ciencias son cifras impresionantes para una región de este tamaño. Por ejemplo, el Instituto Alemán de Física y Metrología (Physikalisch Technische Bundesanstalt, PTB) acoge el "kilogramo nacional" y el reloj atómico más preciso. El PTB es vital en la molturación y también es responsable de la calibración de los humidímetros. Otros institutos se dedican a la investigación de los alimentos para animales (IFF, FLI e ITE) y la agricultura (JKI, Johann Heinrich von Thünen-Institut).



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Prerequisite

Miller or related professions from the food sector	Mill, machine or plant manufacturers	Mechatronics engineer and technical system planner	Professions in the agricultural and feed sector
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DMSB degrees

State-certified technician in mill construction, grain and animal feed technology	Master craftsman and trainer aptitude test (chamber test)	Feed certificate
Mill-related plant engineering	Milling related process engineering	


Opportunities: Everywhere where...

...conveyed, sorted and processed	... crushed, granulated and pelletized	... separated, dosed and mixed.
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Long title, best chances

"State-certified technician specialising in mill construction, grain and animal feed technology" with a focus on milling-related plant engineering or milling-related process engineering – this title does not simply fit on the business card, but opens many doors.

Both disciplines deal with mill construction, grain and animal feed technology as well as interdisciplinary subjects such as German, English, natural sciences, politics, business administration or education. In addition, mill planning, storage and conveying technology are added for plant engineering, and baked goods and compound feed production for process engineering.

Most of the graduates cover both specialisations and take the feed certificate with them at the same time. The latter authorizes the management of a compound feed plant. Those who are also aiming for the Master's title can also cover the theoretical part II at the same time. The district craftsmen's association offers corresponding courses for parts III and IV. The examination is held by the Chamber of Crafts Braunschweig. Milling students can also take the instructor's examination there or at the Chamber of Industry and Commerce. 

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Special path Dual studies To management in three steps



Robert Delefski



The titles "State-certified Technician" and "Master" are not enough? Then there is a third option: the dual course of study for a Bachelor of Arts (B.A.). The dual course was initiated by Amandus Kahl, a machine and plant manufacturer in Reinbek. Robert Delefski is the first graduate to report on his experiences.

"After I finished school, I was initially undecided where to go. A good friend of my family made me aware of Amandus Kahl", he explained. "I found the new training path to project manager on their website and found it very interesting." Combination of an apprenticeship, technical studies at the DMSB and a subsequent study of business administration at the WelfenAkademie in Braunschweig.

Robert Delefski decided to train as an industrial mechanic, but he could also have been a technical draughtsman, for example. This training was shortened to two years. Together with two further years at the DMSB and the Academy the dual course of studies lasts a total of six years. "That's a long time, but it's very well used", Robert Delefski comments. "In the training the practical and technical basics are

laid. At the DMSB, a very broad-based industry specialization in milling in all its facets follows: Flour, animal feed, mill construction, hygiene technology, plant planning, the entire program in theory and practice. I graduated from the WelfenAkademie with commercial and business knowledge." With this mixture you are prepared for many roles.

Between graduating from the DMSB and starting his studies at the WelfenAkademie, he had, at his own request, spent several weeks in the Dutch branch of Amandus Kahl, which he had liked a lot. "So I asked if I could go to sales in the Netherlands. There was a vacancy. I got the Job and really enjoy it. With the dual studies I was equally well prepared for project management and sales."

Robert Delefski recommends that larger mills, machine and plant manufacturers consider the possibility of a dual course

of study. This gives companies employees with tailor-made training who are technically and commercially suitable for many roles. "If you want to train your employees in a future-oriented way, you should think about dual training."



Muzaini Al Ahmed knows milling from many perspectives.

WIDELY



T R A V E L L E D

Muzaini Al Ahmed from Bangalore in India knows the training possibilities in milling like no other. After school he studied mechanical engineering in India and then looked for a specialization. "My mother comes from the milling industry and now advises mills," he says of his career history. "She recommended the French milling school ENILA ENSMIC in La Rochelle, where I studied for two years."

Muzaini Al Ahmed got to know and value the Braunschweig offering through the annual exchange between the ENSMIC and DMSB partner schools. "In France, the focus is on milling, while here in Braunschweig, plant engineering and engineering are of great importance," is how the Indian compares the two educational institutes. "I wanted to take advantage of this and the lecturers at the DMSB strongly supported the project."

Every beginning is hard

At the start of his studies his language knowledge was still very limited – both in France as well as in Germany. "However, one of the advantages of India is the multilingualism. Learning languages is no obstacle for me", said the 27 year old, who apart from German and French has also mastered English and the Indian languages of Urdu, Kannada and Hindi. "Learning German is hard work. But it helps living here, speaking the language everyday and hearing it on the television." The school also hired a German teacher to support him and his Egyptian fellow students. "The teachers here in Braunschweig are very helpful and like to explain something to us again if things went too fast in class."



It all started in the La Rochelle partner school – here's a picture from the school bakery.



Indian cuisine is familiar with many varieties of flour and semolina: Semolina, dal and maida are among them.

Muzaini Al Ahmed also sees great differences in the form of teaching between Braunschweig and the two previous courses of study in France and India. "There the teachers spoke and the students listened. Here many questions are asked and a lot is discussed. This results in a great learning environment and very lively teaching."

He sees another advantage of the Braunschweig model in its high practical relevance. This begins with the practical training of the students, is reflected in the many lecturers from companies and ends with the project work at graduation. "Here the students have a much deeper relationship with the topics and can understand the correlations much better. The graduates in India or France have virtually no experience of how things work later on in companies."

After graduating in the summer, the Indian mill specialist would like to put his language and mechanical engineering skills to work. "I think that this young man with his three diplomas and such versatile language knowledge will be in great demand on the job market then", prophesied the pedagogical director, Georg Böttcher. He and his colleagues are pleased about their international students. "We all profit from international exchange. It's also just really good to see how young people face such a challenge in a foreign country and master it so well. We are happy to help!"



The range of cereals and pulses is large.



Muzaini Al Ahmed conoce como nadie las oportunidades de formación que brinda la tecnología de molturación. Al acabar la escuela, estudió ingeniería mecánica en la India. Cuando quiso especializarse, Muzaini Al Ahmed se marchó a Francia para aprender sobre molienda en ENILIA ENSMIC. Allí se enteró de la existencia de un instituto asociado: el DMSB; quien lo llevo a Alemania para aprender aún más. Y todo por sí mismo, sin saber una palabra del idioma. Pero pronto se adaptó y empezó a apreciar el enfoque eminentemente práctico del instituto.



Willibald Schmidt

Willibald-Schmidt Stiftung Beilngries

An extraordinarily successful businessman, a graduate of the Deutsche Müllerschule Braunschweig, helps the school and the students with his foundation.

First – who was this Willibald Schmidt? After his studies at the DMSB (1955 – 1957) he took over the mill construction company Gebr. Schmidt, Brunnmühle near Eichstädt/Bavaria and developed it into a leading manufacturer of systems for conveying, cleaning and storage of grain with production plants in Beilngries and Döbeln. Willibald Schmidt was a pioneer in the application of state-of-the-art planning and production methods. With the takeover of Seeger GmbH from the group of companies owned by the Kronseder family (including KRONES AG) in 2001, malting technology was added and the company now operates worldwide under the name Schmidt-Seeger AG with over 300 employees in plant engineering.




Headquarters of Schmidt-Seeger AG (main plant) before the age-related sale. Later taken over by BÜHLER GMBH – Grain Quality & Supply.

Willibald Schmidt was always helpful and closely associated with the German Milling School Braunschweig. He was sponsor and member of the board of trustees of the DMSB foundation. Again and again he sent young people from his company to Braunschweig. An outstanding act: When the relocation of the school, which was necessary in 2000, stalled for financial reasons, Willibald Schmidt improved the situation considerably with a donation of 100,000 DM. In 2006, German President Horst Köhler awarded Willibald Schmidt the Cross of the Order of Merit of the Federal Republic of Germany for his services.

After the age-related sale of the company in 2007, the Willibald Schmidt Foundation Beilngries was established. The purpose of the foundation is essentially the promotion of education and upbringing, art, culture and monument protection, welfare of the youth and elderly, environmental, landscape and species protection, science and research with a focus on the city of Beilngries and the Altmühltal Nature Park. Among the promotional purposes outside the region, in particular are the promotion of the German Milling School Braunschweig and the promotion of the education of young people from developing and emerging countries. Since the foundation was founded, the board of directors and the foundation board have been working on a voluntary basis to implement the will of the founder.

Willibald Schmidt died on 5th March 2012 at the age of 79. Due to the international orientation of the businessman, he knew about the need for well-trained specialists, e.g. in emerging countries, and he wanted to promote this. The foundation has recently made it possible for students from Iran, Brazil and Egypt to successfully complete their studies at the DMSB, despite financial bottlenecks. He also subsidised the equipment in the school's technical centre.

The Chairman of the Board of Trustees, Roland Spiegel, was in Braunschweig for the 2017 graduation ceremony and was impressed by the school's achievements. The DMSB can – if necessary – continue to hope for support. 



The old logo of Gebrüder Schmidt AG – later Schmidt-Seeger AG.



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Put through its paces



At the welcoming speech, headmaster Jürgen Beissner emphasized the relevance of the project work. In the background: Muzaini Al Ahmed, Matthias Kaiser, Özgür Bulut

At the presentation of the project, the DMSB candidates made their big appearance: They have to present their solution to problems to the industry.

For school headmaster Jürgen Beissner, the final project work of the graduates is something of a litmus test for the German milling school: "These projects are the flagship of the DMSB: How good are our graduates? How well do we train them? The project work proves the quality of the training." In presenting the work, he expressed particular thanks to the companies without whose commitment this form of final exam would not be possible.

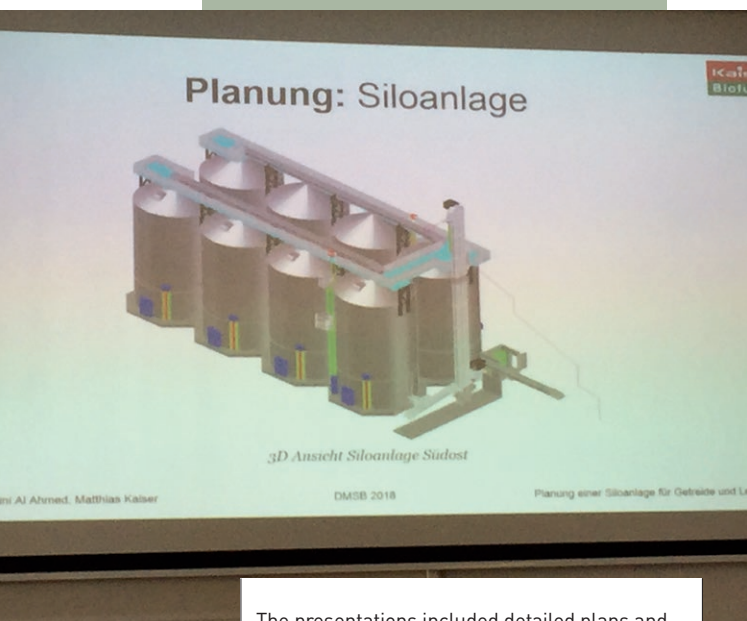
The presentations are an official part of the exam. In small groups of two to four people the students take on the tasks of companies. On site, they have two weeks to collect data and develop a solution proposal. A further week is available for the written elaboration. They submit these for evaluation along with the data material, drawings and calculations. Another week is needed to prepare the final presentations to present the results and evaluations to an expert audience – for the last year this task was scheduled for 8th June 2018.

Tasks in practice

Five groups have dealt with very different tasks:

1. Planning a silo system for cereals and legumes
2. Planning of cereal and grain silos for the Eiling organic mill
3. Mobile grain mill for special operations
4. Creation of a concept for the press lines of the Bröring Group at the Dinklage site for the production of pig and cattle feed
5. Investigation and optimization of operating parameters for vacuum coating of extruded fish feed pellets


Four groups have decided on tasks in the field of plant engineering, and one for process engineering in the field of compound feed technology. Many proposals from project work have been or are being realized and are not just a theoretical exercise.



The presentations included detailed plans and 3D views, some with animation.

The appearance also counts along with the content

During the presentation, the group first introduces itself, then the sponsor company and the given task including restrictions and requirements. This is followed by design and planning, including diagrams and 3D simulations, from which conclusions are drawn. Since the groups work on a division of labour basis, each group presents its own part and must thus also prove its ability to present itself.

After the actual presentation, the working group answers the questions of the expert audience, which takes this task very seriously. Why have certain alternatives not been considered? Why was a specific device selected? For the examinee this means: holding their nerve and answering questions. On this day the answers and arguments were cogent, the questioning lecturers and companies seemed satisfied with their eleven. 



Finally, the candidates have to answer the questions of the professional audience. In picture: Marcel Rühl, Hitham Samir, Falk Lensing.



Para el examen, cada alumno del DMSB debe realizar un proyecto en grupos de dos a cuatro personas. Las empresas definen el problema que el grupo debe resolver y les ayuda a encontrar el planteamiento más adecuado. Parte de la tarea incluye la presentación del proyecto ante un público especializado. Después de la exposición, el público puede hacer preguntas. ¿Y por qué este enfoque o esa máquina en particular? ¿Hay otras alternativas? Los estudiantes explican la solución a la que llegaron sin perder la calma. Este año, los especialistas parecían estar realmente satisfechos con las respuestas.





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The starting point: The mill is to be housed in such a truck.

THE MOBILE mill

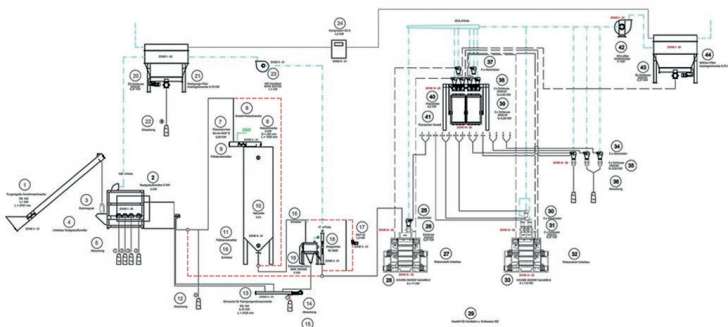
Milling any and everywhere – even in structurally weak or crisis-ridden areas.

The idea is not completely new: There have been attempts to develop a transportable flour mill since the second world war. "In Switzerland, the military already has such mobile units in reserve in the event of a crisis, as well as bakeries on wheels," reports Andreas Kastenmüller, Managing Director of project partner Ing. Stefan Kastenmüller GmbH. But there are hardly any functional offers in the civilian sector. Franz Schmied from Kastenmüller and Nils Gausepohl, exam candidate at the DMSB, have analysed the problem. Where could a mobile mill be used? On the one hand, in war and crisis zones, but also in structurally poor areas such as Kazakhstan, where grain is transported very far to be milled. Thus a project suggestion for the DMSB was created.

The project team was made up of Leo Distler, Nils Gausepohl, Alexej Sinenko and Manuel Sputh. The requirement for the performance of the mobile mill was 24 tonnes per day. The structure should be as simple as possible and still enable the highest possible quality, light flours. Alongside the mobility the independent power supply is also on the wish list. A truck was chosen as a base, which is road legal in most countries and whose wheels are of a common size. "We have opted for



The lack of space is clearly visible in the 3D representation.



The procedure is defined as the basis for planning.

a gooseneck applicator with an area of 36 square metres. This is not a special model, but a normal heavy truck," reports Gausepohl in his part of the lecture. On its loading area different stations should be mounted.

Then follows the cleaning via a seed conditioner. For wetting, the project group provides for a network screw plus a shut-off cell. "The selection of the scrubbing machine was very difficult, as it is hardly offered with small outputs," mentioned Leo Distler. But the group also found a quick solution for this at a machine manufacturer from their own project group. Milling takes place via two eight roller mills and a plansifter.

What sounds so simple, shows its pitfalls in assembly. On the relatively small area of the trailer, the main challenge was to accommodate all the machines and connect them together to form a process chain. This was only possible with a flexible tube chain conveyor for cleaning and with pneumatic conveyor lines for milling. "Another problem are the vibrations caused by the roller mills and the plansifter," reports Manuel Spath. The trailer must be stable and straight so that the mobile mill can function. The energy supply could not be realized on board, there was not enough space. "But this problem can be solved by an additional generator vehicle," observes Alexej Sinenko.

Andreas Kastenmüller and project manager Franz Schmied are convinced by the development and have equipped a truck with the technology. "We will present it at trade fairs, for example at IDMA in Istanbul in April 2019," reports Andreas Kastenmüller. The mobile mill is to be presented to aid organisations throughout Europe. Like many other projects, the mobile mill will not remain a theory but will be put into practice. 🇩🇪



The exam group presents their project, from left to right: Manuel Spath, Alexej Sinenko, Nils Gausepohl and Leo Distler



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Las regiones en conflicto y en crisis podrían beneficiarse mucho de los molinos móviles. Lo mismo cabría decir de las zonas rurales sin infraestructuras, donde el trigo debe transportarse largas distancias. Leo Distler, Nils Gausepohl, Alexej Sinenko y Manuel Spath se enfocaron en este problema para su proyecto. Diseñaron un molino que puede transportarse en un remolque. Conjugan limpieza, humectación y trituración en 36 metros cuadrados pronto hizo que el tamaño del molino fuera el principal desafío. Sin embargo, el grupo encontró soluciones para todo o casi todo, pues la fuente de alimentación debe transportarse por separado. En la feria IBATECH que se celebra en abril de 2019 en Estambul (Turquía) podrá verse un prototipo de este molino móvil; listo para trabajar dónde sea necesario.

CAREER START 2018



From left to right:

External instructors: Thorsten Lucht (Kahl Gruppe/special milling), Jana Haase (Digefa/quality management), K.D. Neumann (IFF Thune, fodder technology)

Graduates: Patrick Nelles, Marcel Rühl, Nils Gausepohl, hidden behind Falk Lensing, Simon Witte, Felix Setz, Hitham Samir, Jan Dobelmann, Leo Distler, Özgür Bulut, Alexej Sinenko, hidden behind Muzaini Ahmed Al, Manuel Sputh, Alexander Krieger, Hanno Müller, Georg Böttcher (DMSB), Lisa Rieke (DMSB), Matthias Kaiser, Gabriele Lühr (DMSB), Uwe Schulz (DMSB), Silvia Hübner (Bühler/mill planning), Sabine Meyer (DMSB)

For the first time, the Deutsche Müllerschule Braunschweig said goodbye to its graduates with a festive evening event. In the Ölper Waldhaus the headmaster Jürgen Beißner and the pedagogical director Georg Böttcher congratulated the 16 newly qualified technicians and eight masters. Mayoress Anke Kaphammel delivered greetings from the city of Braunschweig.

The board of trustees of the foundation and the "Glück zu!" Students' Union also played their part in the successful celebrations, and wish the class of 2018 a successful start to their professional future. The new framework has been so well received by all those present that such a gala is also planned for next year.



Received a master craftsman's certificate (from left to right): Manuel Sputh, Alexej Sinenko, Marcel Rühl, Patrick Nelles, Nils Gausepohl, Hanno Müller, Leo Distler and Simon Witte. To the right are members of the master craftsman examination board Anke Deege, Georg Böttcher and Herbert Pertl.



Michael Kammann (middle) will also say goodbye to the outgoing board of the "Glück zu" association this evening (from left to right): Leo Distler, Manuel Sputh, Nils Gausepohl, Alexander Krieger

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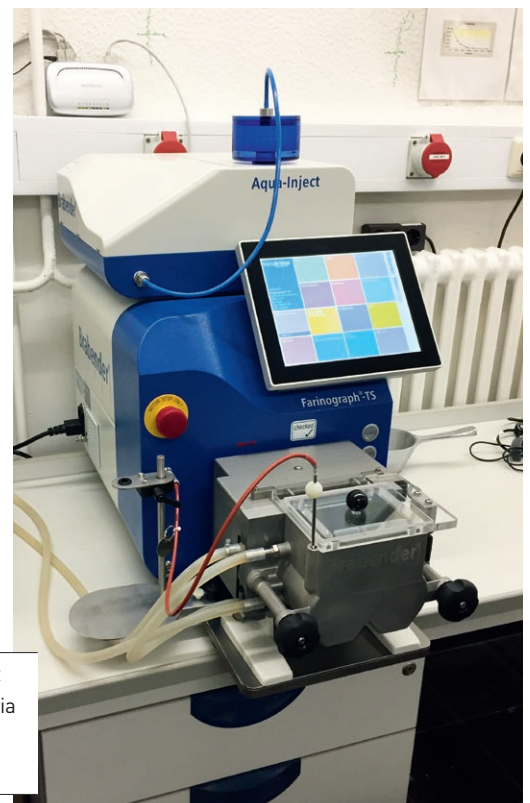
"We have the ambition to train the managers of tomorrow. For this we need the latest equipment, with which our students will later also work in their profession," explains Georg Böttcher, the pedagogical director of the DMSB. This generates a not insignificant financial expenditure, with which the foundation and its members are happy to help.

From laboratory to classroom

The latest examples are in the laboratory of the German Milling School Braunschweig: A current measuring instrument for the rheological analysis of wheat flours. It measures the water absorption capacity of flour and the consistency of dough. For millers and bakers, this is important information for assessing the processing quality of the raw materials and obtaining consistent products.

"The intelligent control software enables us to conduct rheological tests in the laboratory in the basement and to observe the ongoing examination and retrieve the results one floor above in the classroom," explains Georg Böttcher. This in turn is made easier by a further donation from the foundation: For several years now, so-called interactive whiteboards in blackboard size have been installed in the classrooms, which represent both the input and output of the computer and can also be written on like tablets.

The new measuring instrument is connected to the classroom via the software, where results are displayed online.





In the basement is the training mill with its machines.



The white board is tablet and projector in one, and can be used interactively.

PHENOMILL WALZENSTUHL IN EDELSTAHL




BEWÄHRTE KONSTRUKTION



VIELSEITIGER EINSATZ

Milling equipment for the DMSB

The city also supports the DMSB, and it has made the eighteen 3D CAD computers and a suitable plotter available to print out the large-format plans, for example. But the demand for equipment at a technical school is significantly higher than at other institutes. "In recent years, our school mill has been supplemented by foundation members, with a plansifter, for example," reports Georg Böttcher. After each milling step, this separates the resulting products into the different grain size fractions coarse meal, semolina, coarse flour and flour. Such an investment is very special and not included in the normal education budget.

Usually the wish for purchases at trade fairs comes about when lecturers and alumni meet and discuss the latest equipment. "You know each other and you get to know new machines quickly in our industry," reports Andreas Schnelle, Chairman of the Board of Trustees of the Foundation of the German Milling School Braunschweig. Due to the close network between DMSB and alumni there is usually a quick understanding of what is necessary. Then the foundation looks for a way to purchase the equipment. 



Uwe Schulz is leaving DMSB at the end of October 2018 after 25 years.

SHIFT CHANGE

He's not actually a miller. Uwe Schulz studied automation technology and electrical power engineering in Braunschweig and Chemnitz. "But I come from a milling family, my father was a master miller", explained the lecturer in mathematics, physics, mechanical engineering, automation, electrical and measurement engineering as well as control engineering. Therefore, the world of milling was not entirely unfamiliar to him when, after 25 years as a lecturer at today's Ostfalia University of Applied Sciences, he moved to the DMSB.

"A graduate asked me at the time whether I could imagine teaching at the DMSB," he recalls. So in 1993 Uwe Schulz switched to the DMSB. First part-time and after a short interlude at the Technical Academy Braunschweig, from 2003 full-time. He explained his change with a challenge: "For one thing the Milling School and the atmosphere there is unique. But it was also something completely new for me professionally. Our senior expert Hasso Klabunde visited several mills with me. We ran through from the delivery of the grain to the bagging of each station. We have followed all process steps so that I am also familiar with the procedures in practice. Today I think I understand the technology in the mill and in the feed factory."

In use worldwide

In the following 25 years, Uwe Schulz became acquainted with countless mills and feed mills all over the world. The travel-happy lecturer has contacts with Brazil, for example, where he will continue to hold a seminar as a guest lecturer in 2018. Together with the pedagogical director Georg Böttcher, he established the exchange with the French partner school in Surgeres near La Rochelle, France. "This is our baby and also one of the highlights of my DMSB career. So I am all the sadder that this year, for the first time, the French did not visit us in Braunschweig because public funding was cancelled". Both institutes complement each other in terms of content and equipment, so that the two weeks together – an exchange has so far taken place every academic year – are of benefit for all students.

Uwe Schulz did not teach the most popular subjects. "Control processes are mathematically very demanding and complex. However, especially in the animal feed sector, control technology is very important." His aspiration: Graduates do not have to calculate them, but they do have to be able to discuss them with the experts. The basic understanding of the dependencies in a process must be there. "Since 95 percent of the students are highly motivated, teaching at the DMSB is really fun. They want to learn something. I am still in contact with many of them years later," reports Uwe Schulz. He wishes his successor, Lisa Rieke, the same positive experiences. 📺

YOU CAN ONLY GET IT HERE!



Every spring, the DMSB opens its doors to introduce its range of courses and study contents to the curious. Pedagogical director Georg Böttcher presents the Milling School and the range of subjects. Students guide through the rooms and laboratories, demonstrate the virtual mill and answer questions. The "Glück zu" Students' Union and the Foundation also advertise admission to the DMSB. "Nowhere else in the world is there such a broad range of courses of study as here," emphasizes Michael Kammann, member of the board of trustees of the foundation of the German milling school. "Young people can meet here – not just in the milling industry – and work out the best opportunities for the future!"



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EVENTS AND DATES

DMSB events:

Fri, 30th November 2018

DMSB-BarCamp

Fri, 8th March 2019

Taster day

Fri, 24th May 2019

Presentation of the project work

Fri, 12th July 2019

Graduation ceremony

Milling symposia:

11th to 12th September 2018

Milling symposium of the AGF in Detmold

25th to 27th October 2018

Milling symposium of the Bavarian Millers' Association in Volkach

22nd to 23rd March 2019

Milling symposium of the Central German Miller's Federation in Burgstädt

Trade fairs:

13th to 16th November 2018

EuroTier in Hanover, Germany

1st to 5th April 2019

Hanover Fair

9th to 11th April 2019

Powtech in Nuremberg, Germany

12th to 14th June 2019

VICTAM in Cologne, Germany

10th to 16th November 2019

Agritechnica in Hanover, Germany

Other dates:

12th to 21st October 2018

Excursion to ENILIA-ENSMIC in Surgères, France

24th November 2018

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8th to 10th June 2019

"Glück zu!" 36th Association Day of the "Glück zu" Association



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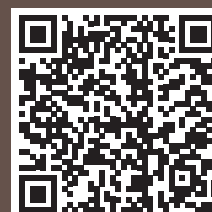
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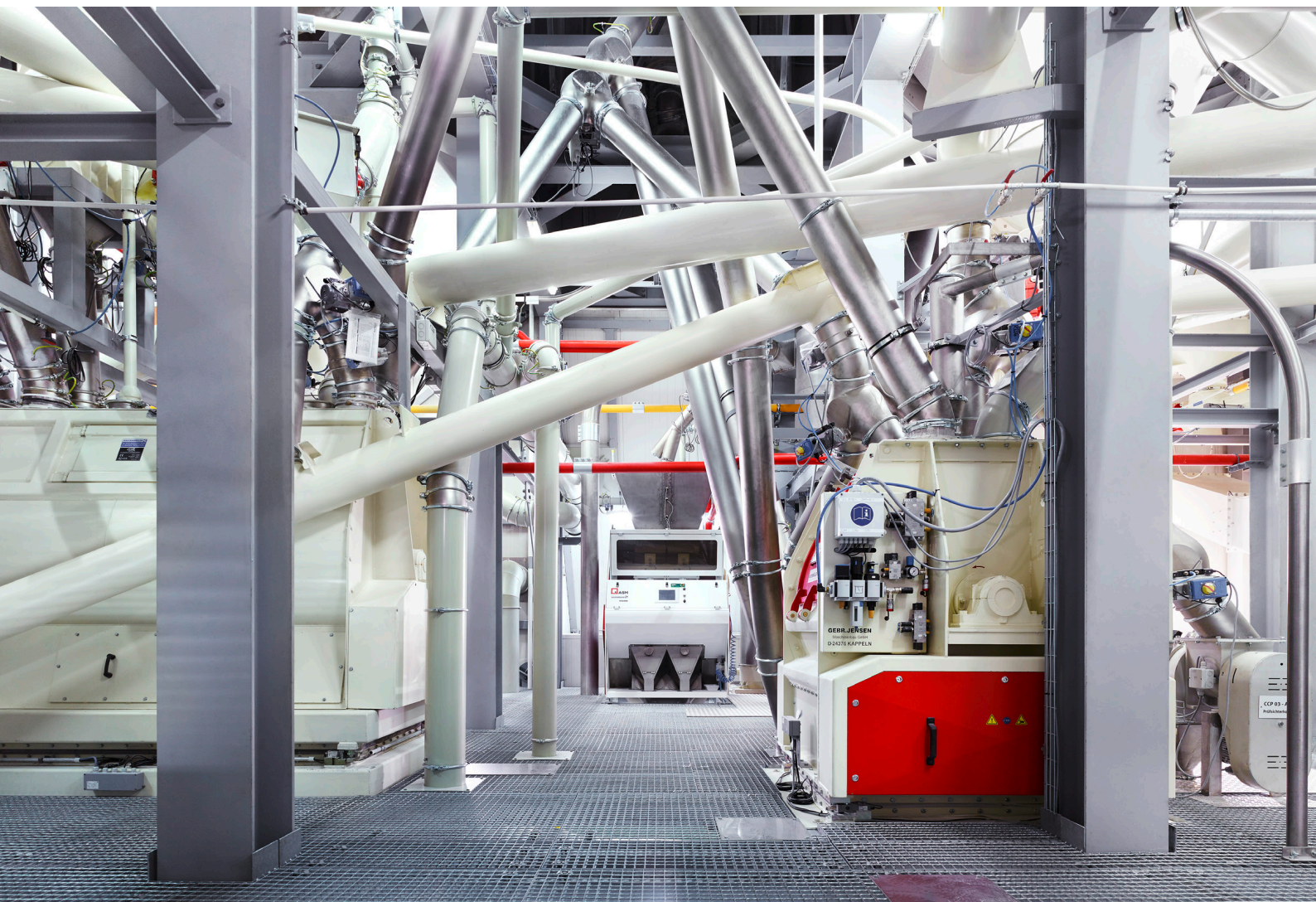
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