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BÖRDEGOLD



MAGDEBURGER MÜHLENWERKE GmbH

Tel.: +49 (0)391 / 53286-0 • Fax: +49 (0)391 / 53286-30
www.magdeburger-muehle.de



Ultimate safety

The Engelke milling group currently uses downstream fine sieving systems at two of their three milling sites to ensure the highest standard of hygiene for their products.

Christof Engelke declares right at the very beginning of our conversation: “We want to be able to offer our customers the security of absolutely clean flour, so haven’t scrimped on costs or efforts in any way.”. Representing its tenth generation, Christof heads Germany’s largest private milling group along with his cousin Joachim Engelke. His latest investment was not in a facility found every day in milling circles. The company group includes the large mill in Hasede near Hildesheim, which has been in the family since 1714, the Magdeburg mills in Magdeburg-Neustadt, and the Oderland mills in the Brandenburg Müllrose. The group processes about 650,000 tonnes of grain a year and supplies all sizes of bakery businesses – from the rural artisan baker through to industrial mass-scale operations – with all types of milled wheat, rye, and spelt products; if requested, these can be produced to the customer’s individual specifications.



[1] The Managing Directors Thomas Brumme and Christof Engelke are proud of being able to supply even their most demanding customers with extremely safe products.

Focus hygiene

“The high quality of our products has always been extremely important to us. But it is not just their processing properties that are important, but also the hygienic properties which must be an absolute given by today’s standards,” Christof Engelke states with conviction, referring

to the global recall campaign by a large confectionery manufacturer on account of very fine plastic particles in the products. This potentially life-threatening scenario is precisely what he did not want to expose his customers to, so some time ago he set about working on possible improvements with his management team.



[2] Photo: BT / Erich Meyer 2016



[3] Photo: BT / Erich Meyer 2016



[4] Photo: BT / Erich Meyer 2016

[2] The intake station complies with the latest hygiene standards. It features integrated dust removal with subsequent preliminary cleaning system. [3] Underneath the end product silos (the undersides of which protrude through the floor slab) there is a transportation device which now feeds the flour to the fine sieving system first instead of straight to loading as used to be the case. [4] The fine sieving system comprises two large plane sifters per loading station, which ensure fast sieving and loading.

Offering safety

Investments in current grinding and grain cleaning systems have been consistently and continuously made in the Engelke milling group. For example, the entire technology of the Magdeburg mill had been completely redeveloped and updated with systems from Bühler by 2004. At that time, the main cleaning system was upgraded, including separators, aspirators, stone separators, magnets, and grain cleaning machines, and an additional colour separator which specifically separates out the unusable milled goods with the aid of cameras and compressed air. In 2005, there followed new end product silos for up to 3,500 tonnes of flour and a tanker loading system; and this year, in 2016, eight silos for 16,000 tonnes of grain have been added with a new preliminary cleaning facility, high-performance dust removal, and new grain hopper, making Magdeburg the most efficient, state-of-the-art site in the group. "Hygiene was already at a

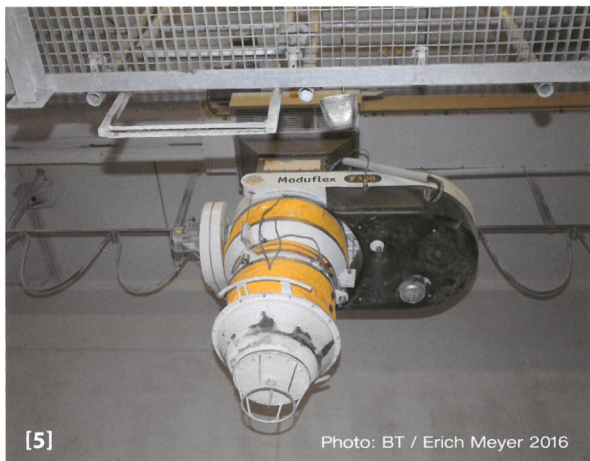
very high level here, but we wanted even more," reports Engelke.

Fine sieving

After grain on roller mills is broken open between ribbed steel rollers and crushed, the different size flour and husk particles produced go to a plane sifter. These machines comprise several sieves with increasingly finer meshes stacked one on top of the other which oscillate. They separate coarse grain particles from fine grain particles and, if necessary, redirect the coarse ones back to the roller mills. Usually, after grinding, a re-sifting is carried out using a control plansifter; this is the same in form and function as the plane sifters mentioned above, but much smaller and achieved using coarser sieves with a mesh width of 1.1 millimetres. "This method is primarily used to establish whether the sieves in the large plane sifter are damaged in any way, plus they also remove the finest particles leaving only the purest flour behind," Engelke explains. "In view of this fact we thought how we can achieve a cleaner sieve and have therefore integrated an additional fine sieve with a mesh width of 0.25 millimetres as far as possible at the end of the process chain as a station between the final silo product and truck loading." The challenge in implementing the project was adapting this technology to the high throughputs, as the tanker had to be loaded within a defined period to ensure the cycles were not impeded in any way.

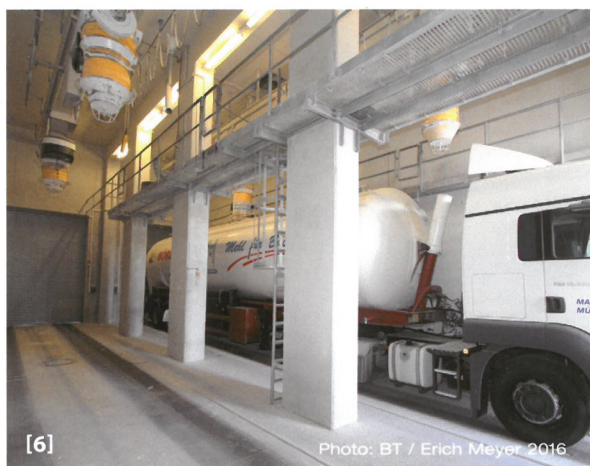
Adapting capacity

With the aid of the milling technology specialist Bühler, Engelke first built a large plane sifter for fine sieving on a trial basis in its large mill in Hasede near Hildesheim, the origin of the milling group. Inspired by how effective this was, Engelke also decided to install the innovation in the Magdeburg mill. This meant building a plane sifter/sieving system with a



[5]

Photo: BT / Erich Meyer 2016



[6]

Photo: BT / Erich Meyer 2016

[5] After passing through the fine sieving system, the flour flows through these "filling sets" into the tankers. Inside, it is filtered once again and fed past a strong magnet which removes any fine iron particles that may be present. [6] Loading a 27 tonne tanker only takes about half an hour.

large enough sieving area. In autumn of last year, a three-storey extension was added to the end product silo with lorry filling system built in 2005, which now houses two large plane sifters and the associated conveyor and separating technology from Bühler. In the process, the flour leaves the end product silos and enters the holding tanks, before being metered into the plane sifters. Particles more than a quarter of a millimetre big are rejected and collected in sacks. The technology is also currently being installed in the Oderland mill in Müllrose to make finely-sieved flour available to all customers of the milling group.

Erich Meyer

Facts

Gebrüder Engelke,
Große Mühle
Mühlenstraße 4
31180 Hasede
Germany

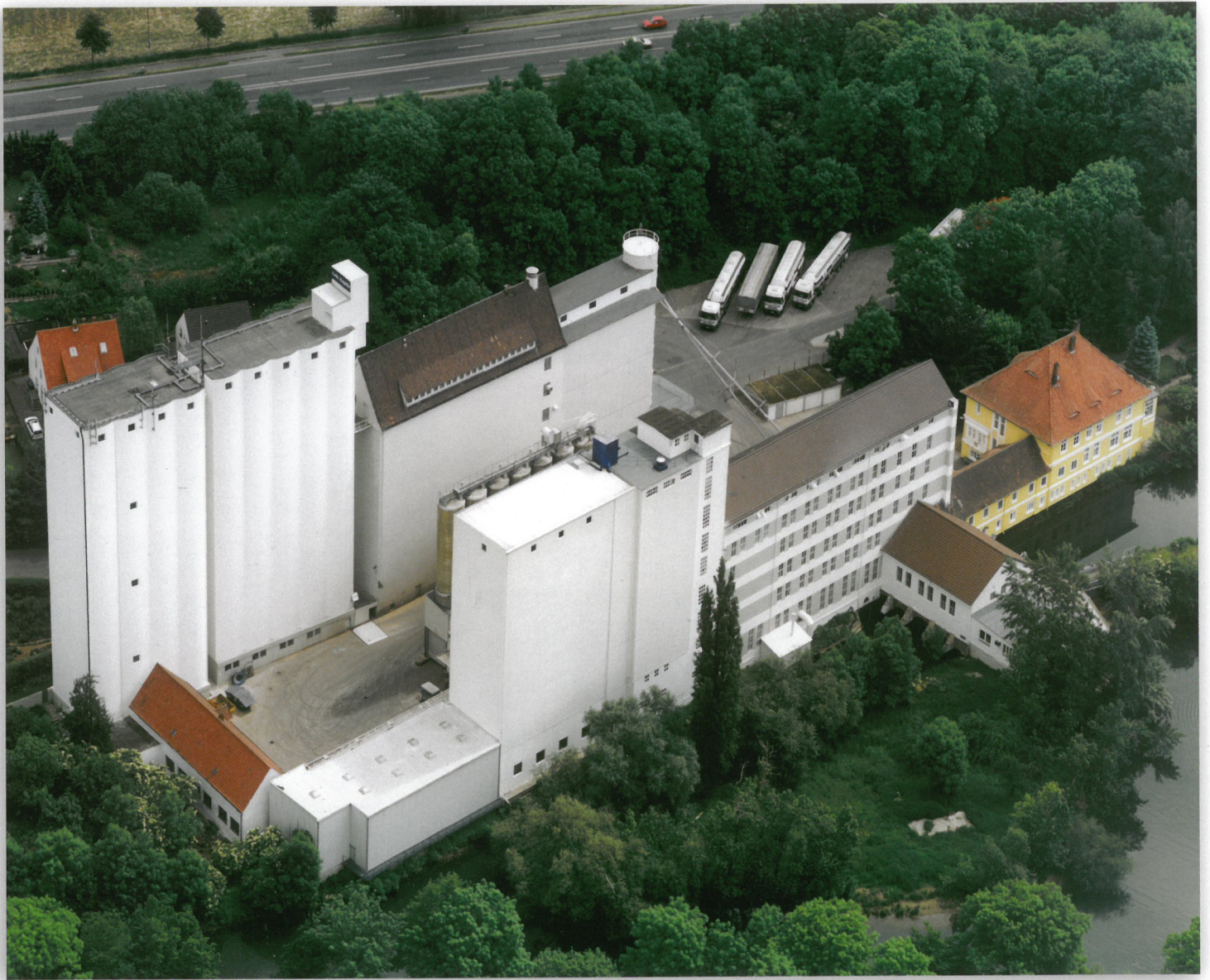


Phone: +49 5121 775550
E-Mail: info@gebr-engelke.de

Magdeburger
Mühlenwerke GmbH
Zum Mühlenwerk 1
39106 Magdeburg
Phone: +49 391 532860
E-Mail: info@magdeburger-muehle.de

Oderland Mühlenwerke
Müllrose GmbH & Co. KG
Frankfurter Straße 1
15299 Müllrose
Phone: + 49 33606 77490
E-Mail: info@oderland-muehlenwerke.de

Management: Engelke brothers
Founded: 1714
Capacity/year: 650,000 tonnes



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Tel.: 0 51 21- 7 75 55 -0 - Fax: 0 51 21- 77 08 18 - www.gebr-engelke.de