

Bread of heaven

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Bread and butter, maybe a slice of cooked meat or cheese, and there is your meal. Bread is a staple food – a standard, you might say. Though not for Ulrike Detmers and her family. For them, bread is a lifestyle. From their large-scale bakery they sell wholemeal bread in artistically designed tins and pumpernickel in packs with a kissing couple on the wrapper. The energy for the bakery is generated by a modular CHP plant supplied by MTU Onsite Energy. Professor Dr Ulrike Detmers is not only a passionate bread lover. Along with her husband and her brother-in-law, she is also a partner in the Mestemacher bakery and a member of the management board.

Hot spot: The oven in which the bread is baked is heated to 270°C by thermal fluid. The fluid itself is heated by the thermal energy obtained from a CHP module supplied by MTU Onsite Energy.



Bread is a shared passion of Professor Dr Ulrike Detmers and her nephew, Maik Detmers. She is a director and partner of the Mestemacher Group, he is works manager of Mestemacher GmbH.

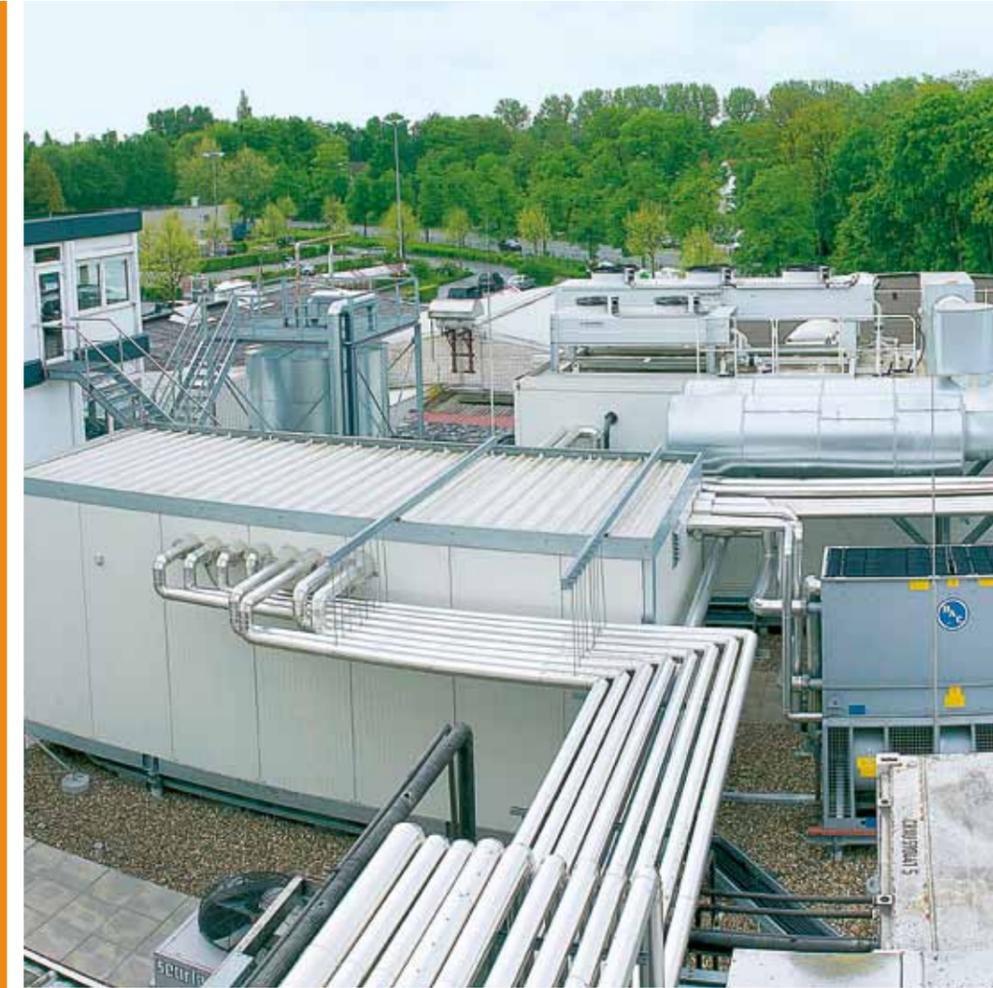
Kim Folmeg heads the Production, Technology, Product Development and Quality Assurance departments at Mestemacher. He was project manager for the installation of the CHP plant at Mestemacher. Driven by an eight-cylinder Series 4000 engine, it generates 849 kW of electricity and 948 kW of heat.



"What good does the money do us sitting in the bank - it isn't earning us any interest these days in any case. So we decided to invest it in an eco-friendly modular heat and power plant," explained Ulrike Detmers. This is a family that thinks pragmatically. And one that loves bread. That is something you notice when you take a walk through the production area with Ulrike Detmers and her nephew Maik Detmers. In the white coat and hairnet that everybody has to wear in the bakery for hygiene reasons, she does not particularly stand out on the shop floor. But without them, she would be impossible not to notice. With her elegant suit and perfectly coiffured blond hair, she comes across strongly as someone to be reckoned with. But when the smell of bread wafts her way, her eyes sparkle like those of a small child. "It smells so good, like home," she enthused, adding that baking it with the aid of ecologically generated energy from a heat and power plant is just the icing on the cake. "We are bakers, and so we normally invest in improving the baking processes," explained Ulrike Detmers but observed nevertheless that the CHP module must not remain a one-off. "So far everything is running smoothly and we expect the investment to pay for itself in just under ten years," she revealed.

Perfect energy utilization

As works manager, her nephew Maik Detmers makes sure that the energy from the CHP plant is perfectly utilized. The module generates 849 kW of electricity per hour. 40% of it is needed for baking and the rest is fed into the public power grid. Mestemacher also has an absorption chiller and a steam generator with a downstream steam accumulator. That means they can utilize the thermal energy from the CHP module at virtually every stage of the baking process. An exhaust heat exchanger heats thermal fluid and a heat recovery boiler produces steam that is then stored in a separate container. The low-temperature heat from the engine cooling system in the CHP module is utilized to produce hot water. That is used to heat the building among other things. The hot water also drives the absorption chiller for chilling water. The bakery uses the chilled water for cooling the dough and keeping the room temperature low in the summer. "This concept enables us to utilize the energy from the CHP plant in the most efficient way," said Maik Detmers.



Top: The modular CHP plant is part of Mestemacher's power generation concept. It is connected to an absorption chiller and a steam generator with a downstream steam accumulator.

Bottom: The energy generated by the CHP plant is used at many points in the baking process. The first is when water cooled by the absorption chiller is used to stop maceration of the steeped rye.





The kneading is done automatically in a kneading machine. Baker Frank Theilmeier only adds the manually added ingredients.

Chilling stops maceration

The thermal energy from the CHP cogeneration module is first put to use as part of the rye maceration process. After the rye has been ground in the in-house mill, it is left to soak for several hours in water warmed by the recovered heat from the engine. You cannot see it, however, because it takes place in steeping vats on the first floor of the bakery. After several hours, it is transferred to what are known as holding tuns. They are double-walled cylinders. The space between the two walls is filled with chilled water from the absorption chiller. The low temperature inside the holding tuns stops the maceration process so that the steeped rye can be kept in them until it is used in the dough.

Seeds and flakes for special bread

The steeped rye is pumped together with the sourdough into the large kneading machine one floor below. This is the first point at which a baker is involved. He pours the manually added ingredients into the kneader by the sackful: various types of seed, oat flakes, salt, yeast, etc. "The basic ingredients of every type of bread are the same: rye and sourdough. The bakers add the extra ingredients that give the various breads their distinctive tastes," explained Maik Detmers. Then comes the kneading. That too takes place almost invisibly – and fully automatically in the kneading machine.

Fully automatic but highly skilled

Ten minutes later, the dough is put into the baking tins, which are then carried by conveyor belts to the oven for baking. Everything is done automatically but there is always a baker keeping an eye on the proceedings. "All the ingredients are natural products. However, the quality of the rye always varies, so we have to respond to those variations in the baking process," said Maik Detmers. If the baker sees that the bread is not rising enough or not turning the right color as it bakes, then he intervenes. However, the bread we can see through the small oven window looks seductively good – golden-brown with a rich, freshly-baked smell. It has been in the oven for 30 minutes and so has another hour to go. The oven is heated to a temperature of 270°C by thermal fluid. The fluid is first heated in a boiler using the thermal energy from the modular CHP plant.

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Although the bread is kneaded completely automatically, a baker oversees the process. Because the ingredients are natural products which are not always identical, the baker has to intervene to make sure that the quality remains constant nevertheless.

From the kneading machine the dough goes straight into the baking tins. Baker Frank Theilmeier then sprinkles it with oat flakes.





An assistant baker takes the loaves out of the oven and places them on trolleys.

After 90 minutes' baking, the bread comes out of the oven – smelling divine.

Bread has to be A1

After 90 minutes' baking, the divine-smelling long loaves come out of the oven. A baker takes them out one by one and places them on a trolley. They stay there for a day to cool down before being taken up to the next floor. There they are sliced. "We get thirteen 500 g loaves from each tin," recounted Maik Detmers. Quality is a top priority for Maik and Ulrike. "I saw one of our loaves on sale in America once, so I bought it straightaway. It tasted superb. Though I would have been surprised if it hadn't, because customers are used to our high quality standards all over the world," he continued. And you can tell that this is someone who is passionate about bread.

Six-month stay-fresh guarantee

The quality has to be right not only at the moment the bread comes out of the oven. It has to taste just the same six months later. To make that possible, the bread is not only packed in an airtight wrapper, it is also pasteurized. The loaves are steam-heated in special pasteurization ovens. The steam required for pasteurization is produced by a heat recovery boiler using the hot exhaust from the CHP module at a temperature of 450°C. The ovens heat the loaves through evenly so that all microorganisms are killed.

Young couple on pumpernickel pack

But that is still not the end of the journey for the bread. After pasteurization, the packed loaves are labeled. For that they are taken to a different department, 'the most dangerous room in the building' as Maik Detmers jokingly calls it. That is because standing on the roof of the department is the modular heat and power plant weighing around 100 tonnes including peripheral systems. "But we can trust the structural engineers, they did a good job," he grinned.

This is where a bit of color comes into the picture for the first time, with shelves full of labels of all kinds – a different design for each type of Mestemacher bread, and each of those in several different languages. Maik Detmers is especially proud of one particular label sporting Hebrew script. "When we make this bread, a rabbi has to come in specially to make sure it is really done according to the kosher rules," he revealed.



The bread is packed and then labeled. Although all the labels look different, they have one thing in common: they all feature smiling faces. "Bread is a lifestyle," says Ulrike Detmers and expresses the idea in the bread packaging.



Professor Dr Ulrike Detmers is not only a bread-lover. She also campaigns on behalf of women in business and has introduced a number of awards.

But whether for the Russian, Chinese or home market in Germany, one thing stands out about every label – they all have people on them. That is something Ulrike Detmers is particularly proud of. She completely changed the image in 2000. One of her students gave her the idea. In answer to the question whether she ate pumpernickel, she had said it was only for old people. Ulrike Detmers took a look at the packaging and had to admit her student had a point. "We were not appealing to young people," was her realization. So she revolutionized the pumpernickel packaging and replaced the picture of an old country cottage with one of a young couple – and from then on the product became a top-seller. "At first everyone thought I had a screw loose, but then they let me do what I wanted," she recalled. And the success proved her right. Pumpernickel is now Mestemacher's biggest selling bread. And Ulrike Detmers is now even more convinced that bread is much, much more than a staple. For her, bread is a lifestyle and a passion.

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ONLINE



INTERVIEW

“40% of our managers are women.”

Professor Detmers, you have been campaigning for women's quotas in German business for years – why?

As an academic I have spent a long time studying the subject of gender roles in business and have come to the conclusion that commerce and industry really is a man's world – even though women have always played a massive part in successful businesses. But despite that, women remain in the background. The same is true of our own company. Women have always played a big part in the success of our family business, but their names are not recorded in our annals. I only know about them from stories I have been told.

Is it the same in your own company?

As partners and shareholders we have clearly stated that we want to increase the proportion of women at management level, and that is what we have achieved. Today, 40% of our managers are women. We consciously made it a consideration when making new appointments. But that does not mean we have discriminated against men. We still have a large number of male managers. But if you want to, you can find plenty of well-qualified women.

What needs to happen for more women to get into executive positions?

We have to create role models, and as women we should not hide away. For example, Mestemacher has sponsored the 'Female Manager of the Year' award since 2002. It is awarded each year to businesswomen who have prevailed and succeeded in the male-dominated world of industry and commerce. Women who can be role models for future generations of female managers. But the award winners are not chosen solely on the basis of outstanding achievements in their professional roles, but also because of their ability to balance work, family commitments, leisure and quality of life and the example they set in that regard. And the essential requirement for combining parenthood and a successful career is equal partnership in marriage and family life. Which is why we have sponsored the Mestemacher 'Top Dad of the Year' award for the last eight years.