

## Maxl Bäck, Zellingen

**“We want to make long-term savings in energy and consequently in costs”, says Helmut Bregenzer giving the reasons why he decided on the MIWE eco:nova heat recovery unit. With the eco:nova, the waste heat from the ovens can be reused, thereby reducing a great amount of costs.**

Although the energy costs, particularly for oil and natural gas, are currently dropping, Helmut Bregenzer sees the need for investing in this kind of technology in the long term in view of energy prices that will definitely rise again in the future. “With new installations, this technology is now built in as a standard, but when modernising an existing bakery retrofitting is necessary.” And the latter is what applies to the not really new production building of Bregenzer’s bakery. As early as 1993, this family business built their production facility in the commercial area of Zellingen relocating their bakery that had been in the town centre up until to then. But just a few years later, the production area had to be expan-

ded once again because the bakery’s network of branches had grown to 18 locations (a majority of which having an affiliated café), all supplied from this extensive warehouse, production and consignment area of 1500 square metres.

Even with large quantities of baked products, the quality has to be right – and it’s the customer who ultimately decides on that. At Maxl Bäck, a very high level of quality is offered. This means that, amongst other things, there is no need to purchase dough pieces and all the products are made according to their own recipe. It goes without saying that sourdoughs belong to the normal assortment of bread. The customer recognises this quality awareness and values it highly.

A large part of the product range is now baked in the bakeries. The MIWE aero in-store baking ovens have been installed for this. Helmut Bregenzer: “We will be changing to baking chambers presently.” He is convinced that the customer will like the taste of products out of the MIWE condo deck baking oven even better. The dough pieces for this are supplied proofed and frozen from the bakehouse. →



Helmut Bregenzer in front of the eco:nova, which is built into the oven and proofing chamber front.



A large hot water consumer is the crate washer at Maxl Bäck.

The entire wheat product range is allowed to reach their proofing "maturity" in the above-freezing temperature range at Maxl Bäck. A first step on the path to energy-efficient production. Especially the long-time dough methods at low, above-freezing temperatures also help save energy. "We use refrigerating units from MIWE because they make it easy and convenient for us to set cooling and proofing," Helmut Bregenzner points out. Without the need to buy other systems, Maxl Bäck therefore converted from using frozen dough methods to long-time dough methods.

On top of that, there are organisational aspects that also help save energy. In particular, it was possible to reduce delivery to the branch outlets to twice a day by changing the working times in the pastry shop. "We work into the night," Bregenzner points out. They start working in the pastry shop at 4 p.m. At 5 p.m., they get the baking list for the next day. The finished pastry shop products are then stored until delivery in the cold room.

This new arrangement enabled travelling costs and working hours in the early morning to be reduced. They were able to reduce overtime hours for dispatching to zero. In contrast, the bakery operates mainly in day shifts in which products are prepared for the refrigerating units.

Organisational measures alone are not enough for Helmut Bregenzner when it comes to saving energy and costs. In the bakery, there are three MIWE ideal deck baking ovens with a total of 50 square meters of baking area. "The high quality of the ovens says a lot for MIWE," says Bregenzner.



Detailed view of the eco:nova: a pipe for flue gas and a pipe for steam coming from the ovens.

A business can save costs in the long term by using high quality technology. "When an oven is not functioning, that's when it will get particularly expensive. That can cost us the customers. That's why we pay special attention to quality when buying equipment."

The three deck baking ovens are each of the two-circuit version. "That was one advantage that I wasn't aware of," says Bregenzner looking back. Especially smaller batches such as those in the special breads range can be baked in two or three decks without having to heat the entire oven. "This saves energy, too, of course."

Thanks to the two oven groups, baking at different temperatures is also possible. Since the pastry shop does not have its own oven, this is particularly of use when pastry bases and sponge bases are baked in the bottom oven group while the bakery can bake bread in the top group. Helmut Bregenzner adds: "The draw-plate decks are also very useful because they allow you to load and remove cake tins, for example, easily."

The ovens are an important part of the bakery and are also manufactured by MIWE to be energy-efficient. However, they do consume a large amount of energy. Baking inevitably uses energy. In the flue gas and steam at the end of the baking process there is still enough energy that can be reused.

The solution for recovering this energy also comes from MIWE: the MIWE eco:nova heat recovery system. The MIWE

technicians use heat exchangers based on the internal bare-tube principle with a condensate drip tray. This affords the system a longer service life and reduces the maintenance requirements. The energy from the flue gas and steam is transferred to another medium in the heat exchanger. This other medium in the MIWE eco:nova is water. Water can be heated up to 75° Celsius without requiring extra energy.

Up to one quarter of the energy used in the baking process is recovered in this approximately 90 cm wide, 200 cm deep and 250 cm high heat recovery system. At the same time, sulphur dioxide in the flue gas is neutralised by means of limestone filtering. That is double protection for the environment – reduced energy consumption with heat recovery and lower pollutant emissions with sulphur dioxide filtering.

From a physical point of view, it makes sense to feed the flue gas and steam into the heat recovery system separately. Steam has a significantly higher energy density than hot air. Mixing both media would reduce the total energy

balance significantly. That is why steam and flue gas from each oven at Maxl Bäck are fed to the MIWE eco:nova through separate lines.

The positive side-effect of directly routing the material flow through the eco:nova is that you only need one chimney. In addition to that, a dynamic draft regulation for each oven ensures that the same draft conditions prevail for every individual oven all the time. This helps maintain the evenness of the baking results.

At Maxl Bäck, there are pipes connecting both the deck ovens and the rack ovens opposite them to the MIWE eco:nova. It was even possible to connect ovens from other manufacturers to the MIWE eco:nova. Helmut Bregenzer: “We decided against connecting just one relatively old oven. It is due to be replaced soon anyway.”

The energy recovered by MIWE eco:nova is used in the heating circuit and for producing hot water at Maxl Bäck. Two large accumulators with 2,500 litres capacity each stand on a raised floor in the bakery. “That was the only option we →



A TC control system operates and monitors the MIWE eco:nova.



Employees at Maxl Bäck with trolleys for the proofing chamber.



Views of the bakery.



The accumulators were installed on a raised floor so that no space was wasted in the bakery.

had without losing space," Bregenzer says. "We can place trolleys and other things underneath them."

The accumulators are coupled directly with the heating system of the building. If there is not enough energy available from the accumulators required for producing hot

water and for heating, then the building's boiler switches on automatically. "That hasn't happened at all, yet, but that will certainly change depending on the season," Helmut Bregenzer explains. "In total, we are saving lots of energy and money."

## A brief overview of Maxl Bäck

Proprietor: Helmut Bregenzer  
Stützenbergstraße 3  
97225 Zellingen

Branch outlets: 18

## Employees

Production: 29, of which 6 are apprentices

Sales: 100, of which 24 are apprentices

Distribution/logistics: 9

Administrative: 4

## Price examples:

Soft roll 0.27 EUR

Rye bread, 1,000 g 2.45 EUR

Special bread, 500 g 2.25 EUR

Danish-style pastry 0.95 EUR

Butter horn 0.75 EUR