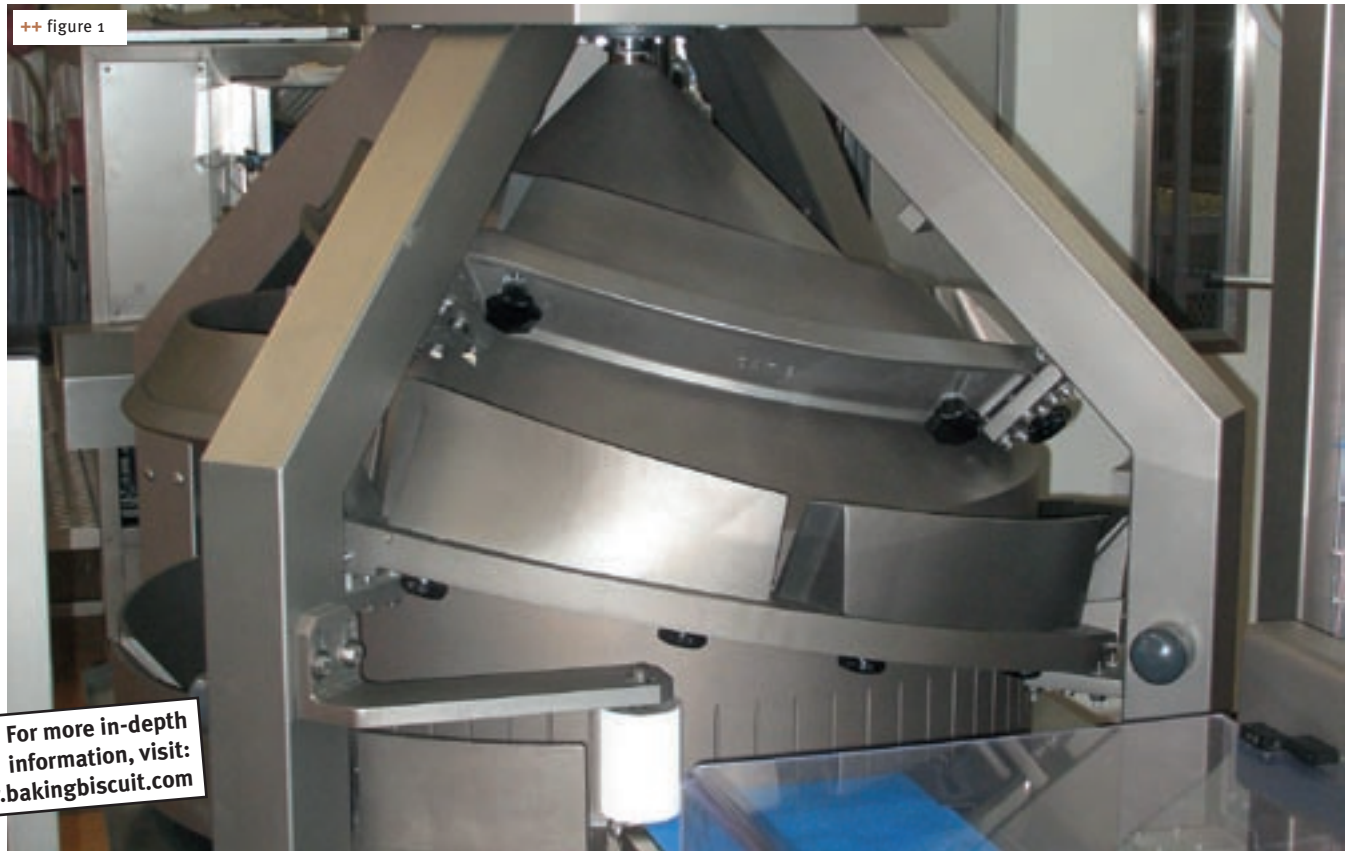
Final rush in Bergkirchen

THE GLOCKEN BÄCKEREI BROKE NEW GROUND FOR ITS NEW PRODUCTION FACILITY IN OCTOBER 2008, IN BERGKIRCHEN, NEAR MUNICH. PRODUCTION IS EXPECTED TO START IN MARCH

++ figure 1



@ For more in-depth information, visit: www.bakingbiscuit.com

Alongside Frankfurt, Bergheim and Östringen (Rothermel bakery), Bergkirchen is the fourth production facility of the Rewe retail group. The new bakery is designed to meet the growing demands of the Group which is present with traditional Rewe supermarkets, smaller neighborhood stores known as Nahkauf, discounter chain Penny and toom consumer markets mainly in Southern Germany.

Six bread lines are already run-in, one each for toast bread, mixed bread and panned bread, one flexible line for shop bread as well as one ciabatta and one baguette line. The selection of machines and equipment reflects state-of-the-art but without any experimentation. The Bergkirchen facility will start with a completely new team and trying to avoid unnecessary risks seems to be appropriate. The core team –

++ **Start up**
from left: Hansjörg Thristmann (District Administrator), Dr. Udo Martens (Plant Manager), Martin Zeil (Vice-Minister President of Bavaria), Guido Siebenmorgen (Rewe), Simon Landmann (Mayor), Bernhard Seidenath (Member of Bavarian Parliament)

Facts

Lot size	40,000 sqm
Total floor space	28,200 sqm
Cubage	219,600 cu m
Number of floors	2
Maximum length of the building	234 m
Maximum width of the building	83.9 m
Height of the building	10.5 – 12.3 m
Clearance in the production area	5 – 8 m
Ground breaking	28.10.2008
Roofing ceremony	15.5.2009
Inauguration	20.1. 2010
Total investment	80 million Euros
Staff	400
Annual flour consumption	36,000 tons

++ figure 2

++ figure 3

++ figure 1
line 1: rounder

++ figure 2
line 2: strand press

++ figure 3
line 2: multiclick line

in total more than 400 people will work at the factory right from the beginning – has been prepared and trained at the parent plant in Frankfurt. The later will remain the head office, in particular, for the departments of purchasing, IT, accounting and human resources.

Eight outdoor silos, with a capacity of 100 m^3, will be available for the different types of flour; a CO_2 tank will supply the MAP packing station. The entire raw materials logistics was provided by Reimelt; it consists of six silos for the daily consumption (indoor); there are four medium and six other silos for minor components and a joint weighing station provides the ingredients for each batch. The layout allows for possible expansion later on. The weighing of the solid materials and the feeding of liquid components is controlled via a production control system by ProLeit which is interfaced with the central ERP system. It can access the orders coming in between 5 and 7 pm and compile a respective production schedule.
Safety and traceability is ensured as all incoming ingredients are analyzed in the in-house laboratory and tested in the test bakery. A team consisting of 18 technicians, with their own workshop and comprehensive spare parts storage make sure that the production runs smoothly and that downtimes are avoided as much as is possible.
All 400 employees will wear company-own work clothes labeled with their name. The social rooms for the employees are clearly separated from the production area by separate stairways and hygiene locks.

The bakery in Bergkirchen uses three-stage sourdough made in mixing vessels. Individual maturation rooms are available for traditional, organic, whole meal sour dough and wheat pre-ferments. The decision against a fully automatic pre-ferment plant was made based on the desire for as much flexibility as possible.
Besides the six bread lines, one pastry line by Fritsch produces croissants and Danish pastry products. There are more lines for the production of cakes and rolls. A well equipped pastry shop and a snack production make sweet and savory products as additional cargo for the delivery tours in the mornings.

The six bread lines:

1. Toast line with Turkington mixer, Benier dough make-up and gas-heated MCS oven with automatic pan exchanger for sandwich and toast breads. Starting with the oven, the line operates in a clean room environment. Two cooling spirals by Kaak make sure the breads are sliced and packed as quickly as possible. Hourly capacity: approximately 6,000 pieces.
2. Multiclick line by Kaak for mixed bread in round or oblong shapes or loaves formed from a strand. It is served by two Diosna double Wendel mixers and alternatively by a Herlitzius strand press. After the dough has been deposited into the moulds, its further travel is housed in so that almost no dust can escape when the moulds are tilted after proofing and the dough pieces placed on the conveying belt on their way into the oven. A six-deck thermo-oil oven by Daub is available for baking. The first three zones in each deck can be used as pre-baking zones. The temperature in these zones is about 50 °C higher than in the subsequent nine zones. Glocken Bäckerei uses this line to produce fully baked breads as well as par-baked breads which will then be baked-off ▸


++ figure 4

at their own baking stations. Hourly capacity: 2,500 pieces.
3. The shop line is used for the production of the so-called 'shop bread'. Under this term, Glocken Bäckerei summarizes all types of bread with artisan appearance which are fully baked and delivered as loaves to their own sales outlets located in supermarket entrance sections. This line also includes a thermo-oil oven; this one is by Miwe with five decks in which top and bottom heat can be individually controlled. This oven also features a pre-baking zone, if needed. A Benier Doughmaster performs the dough make-up; the dough is produced by a Diosna Wendel mixer. The range of baked goods consists of many different and – compared to line 2 - smaller batches. The hourly capacity is about 2,000 bread loaves.

4. Pan bread line by Kaak which produces sliced bread for the self-serve shelves at the retailers as well as par-baked goods for the baking stations. Four different types of pans are supplied from the chilled automatic pan storage. Diosna Wendel mixers deliver the dough which is then made-up in Benier equipment and baked in an MCS oven. Hourly capacity: approximately 2,500 pieces.
5. The ciabatta line consists of a Rondo dough sheet line where the cut dough pieces are deposited on peel boards, proofed in a Gouet proofer, picked up from the boards and placed on the stone plate belt ready for the Gouet oven. Hourly capacity: approximately 4,800 pieces.
6. Baguette line by Mecatherm with two parallel make-up sections and a capacity of about 2,000 kg/h. The dough pieces are deposited onto 2 m wide trays; baguettes are placed in special moulded trays and rolls are placed on flat trays. This line is exclusively used for par-baked goods that are delivered to the baking station in large packs or that are available on the retailer's shelves in smaller MAP-packs. For packaging, two tubular bag packers and two packaging machines for pre-produced bags are available. Hourly capacity: approximately 4,000 baguettes or 20,000 baguette rolls.

An energy saving concept
The energy concept implemented in Bergkirchen has two cost-efficient features. Firstly, the waste heat from the nearby municipal waste incineration plant delivers hot water (130 °C). This energy is used via heat exchangers for the generation of steam for the proofers and ovens, for heating the dispatch area and for heating the water of the crate washer.
Secondly, Glocken Bäckerei uses cold well water (6-12 °C) for the air conditioning of the proofers, for cooling the rooms with the laminating lines and for the air conditioning in the offices. Added to that, this water also cools all control cabinets in the production areas. An NH3 plant on the roof,


++ figure 5


++ figure 6

++ figure 7

++ figure 4
line 3: proofer

++ figure 5
line 4: tandem mixer

++ figure 6
line 4: pan storage

++ figure 7
line 5: ciabatta line

in combination with a CO2 plant, provides the cold temperatures in the storage freezers and cooling areas when the well water is not able to produce the low temperatures needed. Added to that, this equipment is also used for the generation of ice water needed in dough production.

Mobile containers are the measure of logistics

The in-company logistics opts for the use of mobile containers in which the goods are transported in crates. There are two different types of crates in use, one for bread loaves and a flatter one for pastries (60 x 40 cm). ▶

++ figure 8

++ figure 8
line 6: oven with four chimneys

++ figure 9
crate washer

A small building, located separately in front of the production building is approached by trucks which have to handle about 60 delivery tours each day. The truck drivers back up to the unloading station and separate return bread and crates/mobile containers. The return bread is deposited in a closed return bread silo on the left which is emptied frequently by the disposal companies. The mobile containers with the empty crates are moved by three individually driven transport conveyors via a bridge into the top level of the production building where a Colussi crate washer awaits the crates. Destackers automatically move the crates onto the transport belt of the washer and they also stack the cleaned crates again into the containers. A lift brings the clean crates to the packaging department on the ground floor. Filled crates in filled mobile containers are then moved along to the expedition department where the products are manually picked according to customer's requirements.

In total, the production will consume about 100 tons of flour each day in this start-up phase.

For more details about the equipment described here including many pictures, please visit our website www.bakingbiscuit.com. +++

++ figure 9