Brewery Newsletter

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24 Sep 08 Commissioning of the brewery
27 Aug 08 First brew

15 Feb 08 Topping out ceremony

15 Dec 07 Completion of the building shell

14 Sep 07 Ground-breaking ceremony

12 Jun 07 Contract signing

The milestones of the Tucher Bräu project

New brewery in Nuremberg/Fürth open to visitors

The new Tucher brewery is the highlight of Brau Beviale 2008 on the GEA Group stand. With the new brewing facility in Nuremberg/Fürth, the GEA Brewery Systems business unit with the technology centres Huppmann and Tuchenhagen Brewery Systems will demonstrate its plant engineering competence. On the exhibition stand, visitors will have the opportunity to take a virtual tour of the new brewery. For those interested in the real thing: There will be a shuttle service to the brewery.

Built in record time

Under the management of Radeberger's Managing Director Technology Wieland Hoppen and Tuchenhagen Brewery Systems, a state-of-the-art brewery was built in only 12 months. At the opening ceremony on 24 September 2008, Hoppen said that "this is one of the most efficient breweries in Germany, not only in terms of energy consumption." The most important criteria for the new brewery were product quality, efficiency, flexibility and environmental protection. As representative of the Oetker family, owner of Tucher Bräu, Rosely Schweizer praised in particular that the new brewing plant was completed "on time and on budget".

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Production and logistics concentrated in one location

Tucher Bräu is closely connected with the history of several breweries in Nuremberg and Fürth. Thus it is not surprising that there are still several brewing plants in operation in the greater area of the cities. In terms of production and logistics, this situation was and is far from ideal and thus, already in 1998, the brewery decided to distribute the beer from a centrally located logistics centre at the Main-Danube Canal in Fürth. In 2001, a beer pipeline from the brewing facility in the Schwabacher Straße to the logistics centre at the boundary between Nuremberg and Fürth was put into operation. Since then, the beer has been flowing directly from the brewery to the filling plant in the logistics centre. The construction of the new brewery now was the decisive step towards a complete production and logistics location. On an area of 94 000 square meters, Tucher built a compact production plant that is characterized by a clear arrangement and short distances. The general contractor for the brewing equipment of Tucher Bräu was Tuchenhagen Brewery Systems. The member of the GEA Group was responsible for the complete process technology including process control system.

Equipment with maximum efficiency

The greenfield brewery is characterized by short distances and clear structures. All brewing processes are controlled from one central control room. Labour-intensive areas are in close proximity. The facility runs with state-of-the-art equipment. Both the brewhouse and the cold area are automated to the highest degree. Furthermore, the planning partners of the brewery and the plant manufacturer have placed particular emphasis on the application of low-maintenance, energy-efficient, robust and flexible process technology. All this adds up to a brewing plant that is highly profitable even under European conditions with high labour, energy and raw materials costs.

Brewhouse technology from Huppmann

One of the many highlights is the brewhouse. The city boundary of Nuremberg and Fürth runs right through the core of the brewery. Thus, Tucher is probably the only brewery in the world with a two-city brewhouse. The technology is also setting standards. The Huppmann brewhouse consists of Millstar®, mash tun kettle, Lauterstar® and Jetstar® wort boiling system. The equipment is designed for 10 brews per day with a cast-out quantity of 360 hl/brew. The energy from wort boiling is recovered in the energy storage system with almost no losses and used to heat up the next brew.

State-of-the-art cellar technology from Tuchenhagen

The complete fermenting cellar is equipped with the ECO-MATRIX piping system. The technology used ensures highest product quality and minimum consumption. Hygienic design and good cleanability of the piping system were important issues. Another highlight is the clearly structured automatic sampling system, where product contamination in the sampling line is reliably prevented.

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BRAU Beviale 2008

Shuttle bus from Brau Beviale to the new Tucher brewery

During the exhibition, GEA Brewery Systems will offer a shuttle service to the new brewery.
Details about bus departure times, organisation and tour program can be obtained at the information desk on the GEA Group stand, where visitors can also register for the tour. For organisational reasons, the brewery can be visited by prior arrangement only. In the brewery, guided tours will be conducted by the project managers of Tuchenhagen Brewery Systems and Huppmann.

GEA Brewery Systems would like to take the opportunity to thank Tucher Bräu for their kind hospitality.

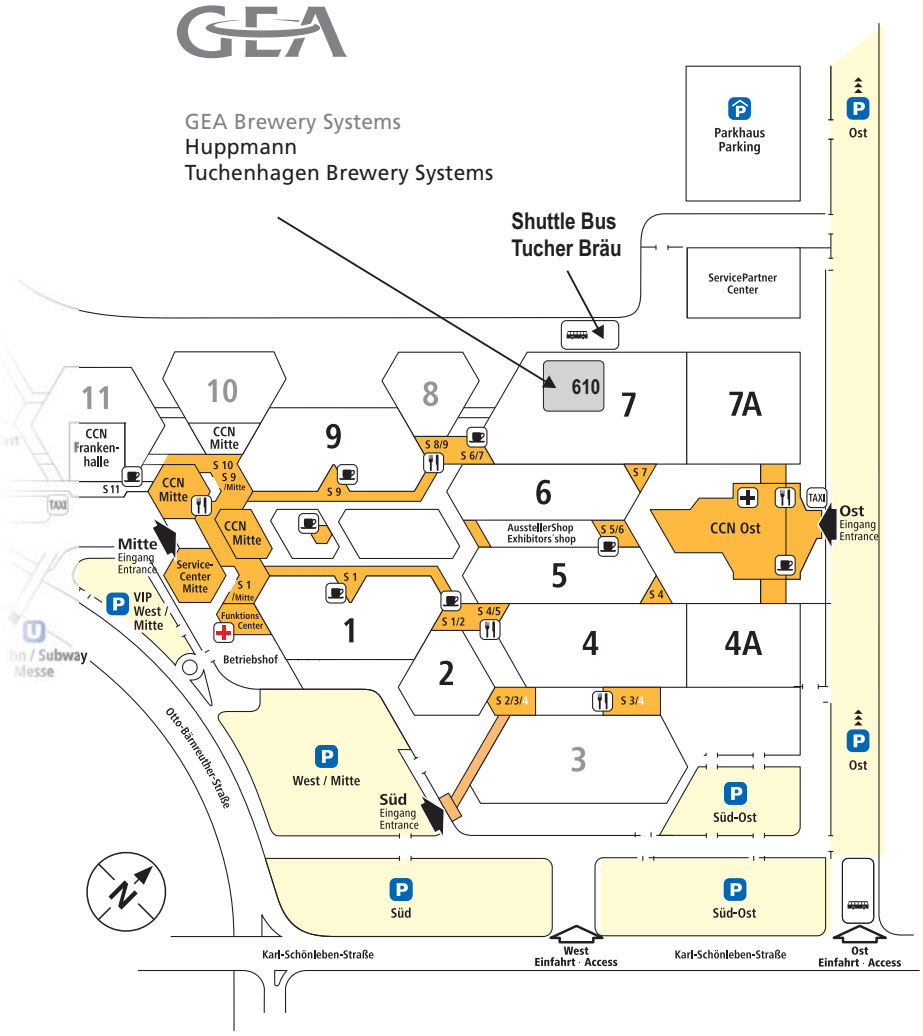
Opening hours:
12 - 14 Nov 2008
9:00 - 18:00

GEA Group:
Hall 7, Stand 610

Visit to Tucher brewery:
Shuttle bus from Hall 7
11:00 and 14:00

Registration and departure:
GEA information desk

Party on the GEA stand:
13 Nov 2008
starting at 18:00
live music, buffet and drinks



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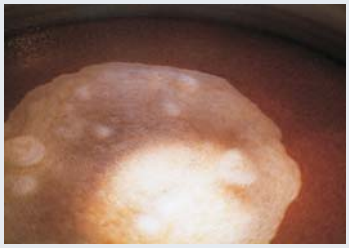
Advantages of LED lighting



Halogen lighting

LED lighting

The illumination of brewing vessels like mash kettle, lauter tun, wort kettle or Whirlpool is indispensible for the visual control of processes. In most cases, a skilled brewer can see at first glance if a brew is running correctly.
The halogen lamps that are usually used for vessel lighting often have a limited life and provide rather uneven illumination of the vessels.

Huppmann is currently working on a new generation of lighting systems with LED lamps. These new modules are designed as replacement kit and can be installed in existing brewing vessels instead of the previously mounted lamp housings. The only additional component required is a constant current source in form of a so-called driver. The LEDs are designed for the high-temperature range, that means especially for temperatures above 100 °C. Compared to conventional halogen lighting units, the life of the new LED lamps is extended by the factor 13 (according to the manufacturer's data). With the application of the LED technology in vessel lighting systems, the electrical power required is reduced significantly while the illumination of the brewing vessels is improved by the targeted use of different combinations of diffuser lenses and spot lenses. Although it is only a small contribution, the use of LED lighting modules also helps to reduce the current consumption of the brewing plant.

New brewery attracted a large number of visitors

The new Heineken brewery Cruzcampo in Seville, Spain, became a visitor attraction for VLB Berlin with its first seminar in Spanish language. From 18-20 June, more than 250 attendees from 25 countries took the opportunity to have a tour of the new brewery. The process equipment was supplied by Tuchenhagen Brewery Systems and Huppmann.

Key factors for the successful construction of a greenfield brewery

José M. Rodríguez

Fernando Navarro

Fernando Ferrete

José M. Moreno

In his introductory speech, brewery director José María Rodríguez talked about the relocation, the design planning, the project management and the key factors behind the success. With a sales volume of 11 million hectolitres, Heineken España is the biggest brewing company in Spain. Heineken has five brewery locations in Spain, with Seville being the biggest one with an output of 4.4 million hectolitres. The relocation was based on a profitability analysis. The possibilities for development at the old site (located in the city centre today), transport restrictions, low productivity and high investments that had to be made had an impact on the decision. In view of the high investment requirements at the old location and also in view of the EU legislation on environmental protection and occupational safety, the old site was called into question.

The new brewery was built over a period of two years, from the preparation of the site to first beer production. In total, it took three years until all construction work was completed in the fourth quarter of 2007.

The presentation of the new Cruzcampo brewery in Seville met with great interest

Rodriguez described the organisational structure and presented the success factors for this mega-project:

1. Integration of engineering and purchasing teams into the organisation team
- Cooperation from conceptual planning up to detailed engineering
- Documentation and training material (Total Productive Maintenance)
- Requirements on plant management
- Commissioning plan with a changeover plan from the old to the new location
- Commissioning phase with training on the job and site acceptance tests

2. Integration of the brewery management
- Validation of concepts and detailed engineering
- Staff requirements: existing vs. future qualification profile
- Job descriptions, selection of qualified employees, hiring of new staff
- Training schedule and implementation of the measures
- Production plans for both breweries and transition periods
- Flavour matching: blending of beers from the old and new production facility
- New organisation in the brewery management

3. Integration of trade unions
- Illustration of the impact of the relocation on job cuts (50 %)
- Negotiations regarding the outsourcing of non-core activities
- Negotiation of a social plan with early retirement scheme
- Job descriptions
- Development and implementation of training plans including assessment and certification in terms of total productive maintenance

"The key success factor was that from the outset all groups involved worked together as a team. The training measures were particularly important to us. We invested 6 million Euros in training alone", said José María Rodríguez.

Engineering and organisational aspects

Fernando Navarro, Development Director of Heineken España, presented the engineering, architectural and organisational aspects of the new brewery.
He mentioned the following facts:

- 4.5 million hl sales capacity
- High productivity (18000 hl/head)
- Modular design
- Logical layout
- High flexibility regarding production
- Commitment to sustainability
- Safety for employees and product (first time right aspect)
- Use of proven technology
- Hygienic and ergonomic design (Total Productive Maintenance and EEM)
- Total automation with Management Execution System
- Automatic connection between packaging area and logistics
- Early ownership (involvement of stakeholders)

Two specialist teams worked together, each covering specific tasks. Heineken Supply Chain supervised specifications and execution of the project. Specialists from Heineken España ensured that the conceptual design and requirements were taken into account.

Fernando Navarro explained that much effort was put into the development of design specifications. Offers were compared not only from an investment cost aspect, but also from an operational costs point of view, taking efficiency, consumption, manning level and maintenance cost into account. The start-up phase was used to give technicians and operators a deep and practical knowledge of the plants for future management of the installations. Navarro also went into some detail regarding the facts and figures of the "Jumbo project":

- Cost: 9.6 % savings on the overall budget
- Timing: only 20 days of delay to original plans
- Productivity: 16000 hl/head at present, targeted to come to 18000 hl/head next year
- Consumption:
  - Water: 0.38 hl/hl of sales beer
  - Thermal energy: 68 MJ/hl of gas using 12 % biogas
  - Electrical energy: 7.5 kWh/hl of sales beer
  - Flexibility: 4 worts, 9 types of beer and more than 100 SKU
- Operations are 100 % automated now. MES is in an advanced phase of implementation.

"The best, but also proven technology"

Francisco Ferrete, the Master Brewer of Heineken España in Seville, presented design and managerial aspects of his involvement in the project. Heineken opted for the same brewing process using the best, but also proven technology. One of the main challenges was the transition phase from old to new. The start-up of the new brewery was in Q1 2007. By December 2007 the old brewery closed. Quality and quantity of beer in the market and the smooth transition from old to new with flavour matching (first time right) was a prime goal. This was ensured by thorough training of the operators, who started without any experience in a fully automated process environment. In his presentation, Francisco Ferrete summarized it as follows:
„In the project of the new brewery, with a top level of complexity as Jumbo, I have learned that beer is mainly the team of the people who have done everything possible to convert the big challenges into a big success."

The energy supply at the new Seville brewery was presented by José Maria Moreno. All areas of heat, power and refrigeration supply were optimized to minimize consumption.

One of the interesting features is the heat supply for the brewery. Heat is produced with gas and transported as superheated water (160°C at 12 bars). Three 16 MW boilers are installed. The losses of superheated water are around 19 % in total compared to 30 % in steam. This leads to 13 % energy savings due to the design, as Moreno reported. To compensate peak consumption, superheated water is stored in three 80 m^3 buffer tanks.

The Huppmann brewhouse is equipped with a heat recovery system. Ammonia is used as the refrigeration medium at two temperature levels (-8 and -1°C). As the cooling medium, alcohol-water rather than glycol is saving energy in pumping. The tank farm was set up in an insulated rectangular building, which is cooled and conditioned. Individual tanks are not insulated. Tuchenhagen Brewery Systems was responsible for the complete cold area processes from wort cooling to bright beer and was the main contractor for the process supply.

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Impressive new Cruzcampo brewery in Seville

Gerd Delitz to retire soon

Gerd Delitz will finish his career at Huppmann GmbH and retire in the next few months. For 38 years, the mechanical engineer has held various leading positions at Huppmann and had a profound influence on the development of brewhouse technology. Huppmann brewhouses all around the world bear his mark. Many customers from the brewery industry in Germany and abroad know Gerd Delitz as a very competent and technically experienced partner in discussions and negotiations. Most recently, he was Area Sales Manager Central Europe and Key Account Director for international brewery groups.

In the future, Thomas Hübner and Markus Kunz will take over the comprehensive sales duties and responsibilities. Thomas Hübner will be responsible for Northern and Eastern Europe. Markus Kunz will be in charge of the German-speaking sales area. They both have been working successfully at Huppmann for several years already in the field of sales, engineering and project execution. Today, Huppmann GmbH is part of the GEA Brewery System business unit, providing brewhouse equipment and complete breweries.

Gerd Delitz

The new Huppmann Area Sales Managers: Markus Kunz and Thomas Hübner (left to right)

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Factory Acceptance Test by Hite Brewery

A delegation of Hite Brewery, Seoul, South Korea, came to Kitzingen to inspect their new brewery equipment prior to dispatch.

Hite is the market leader in South Korea and enjoying constant growth. The production plant in Jeonju is currently being extended from an annual capacity of 3.5 to 5.5 million hectolitres. The brewery relies on quality made in Germany. The new brewhouse is equipped with one of the biggest lauter tuns ever (13,300 mm diameter), producing 12 brews per day with a cast-out quantity of 1200 hl wort per brew.

The order was placed in June 2008. The first brew is scheduled for 1 April 2009. The brewhouse will be completed in a record time of 10 months from order placement to commissioning. With another order, the complete brewhouse automation system of the existing brewing lines 1 and 2 will be upgraded to brewmaxx V 7.0 and an energy-saving Jetstar wort boiling system will be installed.

The total volume of the brewery extension is more than 50 million euros. In addition, a new tank farm and a complete malt handling plant will be installed.

Hite is a loyal customer of GEA Brewery Systems. In all of its three brewing facilities (Hongcheon, Masan and Jeonju) the cold process area has been equipped by Tuchenhagen Brewery Systems and the brewing lines have been supplied by Huppmann.

Delegation of Hite Brewery in Kitzingen

Imprint

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