

# Clean as a whistle

Cleanliness has top priority in breweries. The brewer's dictum "It can never be too clean" holds good to this day. In beverage-producing operations, extensive optimisation has taken place in recent years. Research and development is progressive. In this theme edition entitled "Energy and environment, cleaning and disinfection as well as hygienic design", we cover the latest trends and commercial scale solutions.

**CLEAN OR INDEED IMMACULATE** – Apart from cleaning efficiency, economics and environmental pollution play a major role in assessing bottle washers. When are bottles clean? When are they actually over-cleaned? And how does one objectively measure that? Addressing this fascinating subject in the context of a research project, *A. Birnstiel*, VLB Berlin, Germany, has written a paper "Standard levels of dirt on bottles for validation of bottle washers". As of page 194, he describes his work in developing "standard dirt levels" and shows how this can be used, as well as the limits associated with evaluation of cleaning efficiency.

**CLEAN AIR** – Hygiene is also the focus at the tradition-laden German Private Brewery Reissdorf in the beer stronghold of Cologne. A new filling line was commissioned there in January 2009. A new ventilation plant was installed simultaneously in order to provide clean (air) conditions. This benefited not only the production process but also employees and building (p. 223). The article "Decarbonising the distribution of beer" by *Prof. A. McKinnon*, Heriot-Watt University, UK, also deals with the subject

of clean air. As of page 208, you can read how to set this up.

**UNFINISHED BUSINESS** – Is the consolidation of the brewing industry over? Many self-appointed experts have argued that it is. However there is a lot of unfinished business out there, analysts say. In her report "It ain't over yet" *Dr. Ina Verstl* explores several take-over scenarios which could change the face of the industry in the next few years (cf. p. 185). And then, of course, there is always China, whose phenomenal growth in beer output will determine consolidation's further course.

*L. W. W. W. W.*

