Press release

11 September 2012
PI 1-12

Universitätsklinikum Marburg – **reliable energy self-sufficiency**

- University medical centre becomes self-sufficient in energy
- The technology: Universal steam boilers UL-S, Unimat heating boilers UT-L from Bosch Industriekessel

According to the Federal Statistical Office, Germany's medical centres spent a total of more than EUR 2 billion on energy, fuels and water in 2010. This represents a huge savings potential; costs can be cut significantly by investing in a modern energy architecture.

The given situation

Until 2010, the hospital was supplied with steam and hot water from the district heating plant of the University of Marburg. Essentially for economic and ecological reasons, the medical centre then decided to become self-sufficient in energy. In September 2010, Bosch Industriekessel provided the required technology. The company headquartered in Gunzenhausen, Northern Bavaria, develops and produces large and industrial boiler systems for commercial and industrial enterprises as well as municipalities. Two steam boilers and heating boilers each were commissioned already at the end of October of the same year.

The technology

Two Universal steam boilers UL-S with a steam output of 3,000 kilograms per hour now supply steam to the kitchen, laundry, cleaning and disinfection devices/systems, e.g. for the processing of beds or sterilisation.

The shell boiler UL-S is a modern and efficient three-pass boiler. The flame tube (1st pass) and two smoke tube bundles (2nd and 3rd pass) are integrated into the pressure vessel together with the water-flushed rear

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reversing chamber. Fuelled with natural gas, the boiler ensures low-emission, environmentally friendly combustion.

An integrated economiser increases the boiler efficiency through fuel gas heat recovery. The WSM-V water service module supplies degassed and chemically conditioned feed water to the steam boilers and disposes of the desalting and waste water. The WA water analyser fully automatically measures and monitors the boiler water quality. This not only protects the system against damage due to insufficient water parameters, but also reduces fuel and fresh water consumption and allows to reduce the use of chemicals.

Two Unimat boilers UT-L with a heat output of 7.7 megawatts each heat the domestic and heating water. The boilers use low-emission natural gas – one of them is a dual-fuel boiler that can also run on light fuel oil. The two Unimat UT-L boilers also use a 3-pass design. They achieve a standard efficiency of up to 95 percent without flue gas heat exchanger. The front door of the boiler can be fully opened, making the entire boiler section freely accessible. This facilitates maintenance, cleaning and overhauling of the boiler. The four boilers are controlled via the SCO system control and BCO boiler control units. All operating data can be stored and displayed in the form of clear curve or summary charts on the touch panel displays. An integrated monitoring and security function prevents maloperation.

The result
State-of-the-art boiler and modular technology from Bosch Industriekessel enabled the Universitätsklinikum Marburg to become self-sufficient in energy. The investment in a modern energy architecture pays off in about as little as four years.

Press photo 1-12 (1):
Universitätsklinikum Marburg and its energy centre
(Picture: Bosch Industriekessel)

Press photo 1-12 (2):
Efficient supply of heat and steam: The UT-L heating boilers as well as one UL-S steam boiler (Picture: Bosch Industriekessel)

Press photo 1-12 (3):
The water service module WSM-V ensures fully automatic water treatment. The main components of the module are a steam-heated feed water tank

with trickling deaerator, chemicals dosing device, blow-down and expansion tank, a water sample cooler as well as a modern control panel. The WA water analyser ensures optimum water quality. (Picture: Bosch Industriekessel)

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Bosch Industriekessel GmbH, part of the Bosch Thermotechnik GmbH, has stood for innovation in industrial boiler technology for more than 145 years. Boiler systems for steam, hot water and heating, manufactured to customers' specification, provide efficient heating and process heat for all applications. Boiler house components, which are modular in design and perfectly coordinated, together with intelligent regulation and control technology, significantly simplify the planning, installation and commissioning of the complete system. Comprehensive service support from one source rounds off the innovative product portfolio.

Further information is available online at www.bosch-industrial.com

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