The latest project by apeiron GmbH is "The ASH – The American Steak House". Building owner and CEO Kent Hahne had to explore new territory to bring the brand’s latest restaurant onto the market. This is because the electrical power supply on the construction site would have been overwhelmed if a conventional setup had been pursued, not least due to the high cooling and heating load caused by the open kitchen, the lava grill, multiple fireplaces in the dining space for more than 300 guests and the large window areas.

To render construction at the site at all possible and reduce the energy costs (which were expected to be high), an energy-efficient all-in-one concept had to be devised, with the requirements set out by EnEV and EEWärmeG becoming something of a secondary issue.
RESTAURANTS

THE ASH, American Steakhouse
COLOGNE - Germany

Solution

Heating and cooling with gas engine heat pumps

Two YANMAR gas engine heat pump hybrid chillers produce the necessary heating and cooling capacity, providing a supply of hot and cold water which is fed into two buffer tanks via a hydrobox each. A higher-level control system ensures that the hydroboxes are activated for cooling or heating operation (depending on load distribution) and the buffer temperatures are specified. The latter is independently recorded by the hydroboxes. The efficient variable speed water pumps within the hydroboxes are responsible for delivering water to the buffer tanks on the primary side. The control valves for heating and cooling are directly activated by the hydroboxes.

The integrated engine heat recovery unit also heats the utility water for the kitchen to up to 65°C. This recovered energy reduces operating costs and CO2 emissions, which are harmful to the environment. It also means that the provisions of EnEV and EEWärmeG are effectively exceeded.

Outcome

Energy efficiency for connoisseurs

The combination of cheap natural gas and motor heat recovery units enables operating costs to be reduced by up to 50% in comparison to an electrically operated heat pump. Meanwhile, CO2 emissions are cut by up to 10%. As a result, the American Steak House operated by Kent Hahne saves up to EUR 7,500 per year and is environmentally friendly.

Yanmar Energy Systems

For further information regarding Yanmar GHP Chiller, VRF or Refrigeration systems, we will be happy to discuss your requirements. Just call us or send us an e-mail.
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