



Case study

Premier Palace Hotel



SUMMARY OF RESULTS

After the installation of adiabatic panels on the cooling equipment of the Premier Palace Hotel:

- The average reduction of electrical energy consumption has amounted to 24%
- The produced cooling capacity has increased by 29%
- The operating cycle of equipment compressors has been shortened and they do not operate in overload mode any more
- The return on investment (ROI) period of the installed adiabatic panels "Smart Cooling™" = 8 months of operation

CUSTOMER

The five-star Premier Palace Hotel has more than one hundred years long history of performance.

The Premier Hotels are one of the best hotels in the world. The hotels provide unique apartments.

In 2009 this hotel was awarded 6 Stars and 7 Stripes by the Seven Stars and Stripes®Committee.



PROBLEM

Over last three years during the peak hours of hot summer period the hotel has been short of electrical energy, which also concerns cooling equipment. When the outdoor air temperature reaches +35°C, cooling equipment operates in the peak regime, which for its part means that the equipment compressors become overloaded and switch off. Such a load requires heavy electrical energy consumption. In the summer period from May to September the amount of the electrical energy, consumed by the hotel cooling equipment TRANE RTAC, increases by 45% on average. Such an increase considerably boosts the operational costs of hotel since the electrical energy that is consumed by cooling equipment is an essential position of costs. There are six cooling facilities installed in the hotel: TRANE RTAC with the total cooling capacity $Q=3.400KW$.



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TASK

To reduce the electrical energy consumption of cooling equipment TRANE RTAC in the hot summer period.
To boost the efficiency of this equipment and ensure a normal mode of operation.

SOLUTION

In order to prevent the overload of equipment, a solution was needed that would enable the installed cooling equipment to produce more cooling capacity in the hot period, i.e. to operate more efficiently. To serve this purpose, in 2012 the customer's service company equipped the cooling facilities with Blue Energy Adiabatic Panels "Smart Cooling™". The adiabatic panels lower the temperature of the air, inflowing in the cooling facilities, which allows the facilities to produce more cooling capacity and consume less electrical energy.



RESULTS

The Premier Palace's technical director has submitted a report, which indicates that, after the installation of Blue Energy Adiabatic Panels "Smart Cooling™", in the hot period the equipment can produce noticeably more cooling capacity (the average increase by 29%) and the electrical energy consumption of equipment considerably decreases (by 24% on average). Additionally, the equipment independently operates under the circumstances of normal load, the operating cycle of compressors is shorter and the equipment does not become overloaded.



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