SMART COOLING

CASE STUDY

Humanitas Hospital

Bergamo, Italy

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During summer, the hospital’s air conditioning and cooling equipment are the single largest consumers of electricity, responsible for a whopping 50% of the total electricity consumption.”

SOLUTION

In June 2019, the intelligent adiabatic **Smart Cooling™** system was installed on a TRANE RTAF 310 chiller.

Our solution considerably boosts cooling efficiency at INRIM, ensures more cooling power for the chiller and reduced electricity consumption.

Smart Cooling™ continues to equip new chillers with the new generation intelligent chiller-boosting **PRO 10** device.

RESULTS

Test reports at INRIM indicate that after the installation of the intelligent adiabatic **Smart Cooling™** system, the cooling equipment generated noticeably more cooling capacity with an average increase of **37%**. Electricity consumption decreased by **27%** at an average temperature of **35°C**.

The **Smart Cooling™** system allowed the TRANE RTAF 310 chiller to increase its cooling capacity and at the same time reduce electricity consumption, so as to achieve an above-5 COP level. The ROI (return on investment) period for this project is as low as six operating months.

COOLING CAPACITY INCREASED BY ↑37%

ELECTRIC ENERGY CONSUMPTION REDUCED BY ↓27%

ROI 6 MONTHS

CHECKED AND TESTED FOR PROVEN RESULTS

Efficacy assessment has been conducted and validated. Testing was performed with BTU liquid flow and temperature meter RIF600 and Eniscope energy monitoring equipment.

CUSTOMER

Humanitas is a highly specialized hospital, research and teaching center. It is accredited by the National Healthcare System. Built around centers for the prevention and treatment of cancer, cardiovascular, neurological and orthopedic diseases – as well as an Ophthalmic Center and a Fertility Center – Humanitas also operates a highly specialized Emergency Department. One of the most advanced hospitals in Europe and located in the Italian city of Bergamo, Humanitas provides 672 patient rooms in a total area of 57,000m^2.

CHALLENGE

During summer, the electricity consumption of the hospital’s cooling equipment accounts for **52%** of the total electricity consumption – a heavy strain on the operational budget of the hospital. During the region’s hot summer, when outside temperatures can reach over **35°C**, there is a sharp decrease of cooling capacity of around **19%**. The responsible HVAC engineers recognized there was indeed a deficit of cooling capacity and overload of the chiller compressors.

MEASURED COOLING CAPACITY AND COOLING CAPACITY INCREASE