Case Study

ArcelorMittal: Energy Savings: 52% Carbon Footprint Reduction

The Project

Poland's biggest steel production plant is located in Katowice and employs about 4,000 people producing 5 million tons of steel per year.
It features three blast furnaces, two rolling mills, three lines of continuous steel casting as well as its own power plant. Main applications for its steel are railway and tram cars manufacturing, structural steel used in construction, appliances, and the automotive industry.

In terms of technical solutions and process control systems, this iron works is recognised to be among the most modern facilities of its type in the world.

Due to the size of the buildings, ArcelorMittal requires a heating system that is able to handle such large heights in an economical way providing a quick reaction time to changes in the outside temperature.

The Challenge

ArcelorMittal strives to increase production while consuming ever fewer resources in the production process. A key criterion in the analysis is the energy sustainability index. It is used to consider all energy consuming appliances, including the heating system, as being substantial contributors to the overall efficiency and carbon footprint. A few years ago management commenced a search for a highly efficient heating system to replace its outdated central steam and hot water plant. While efficiency and social responsibility were in the forefront of criteria, the controllability of the system within different buildings was likewise important. With different working areas requiring different working temperatures, and operating times, flexibility was paramount.

The Implementation

After an extensive search for the best system, the decision was made to choose a Schwank heating system due to its outstanding radiant factor and low carbon footprint. Another requirement of the heating system is to maintain constant temperatures in all the different processing areas, as each processing area has a different target temperature. Since being installed in 2006 the heating system has always achieved the design temperatures required, even during the harshest of winters. Schwank supplied over 72 individual luminous type radiant heaters including the controller ThermoControl Plus to manage the heating zones individually.

The Conclusion

The heating system is now completely flexible as it incorporates many independently controlled heating zones. The design of the system has enabled comfort levels within the site's many different buildings to be easily maintained. Energy savings on average amounted to 52%, meaning the ROI was reached earlier than forecasted – in approximately 2 years.

Andrzej Trzcina, Maintenance Manager, stated he is extremely delightedwith the high energy savings,the quality, and the service that Schwank provides.

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