

KELLOGG'S GOES GREEN, STAYS COOL

With manufacturing plants across the globe, Kellogg's has made its mark on the breakfast cereal industry. But, the company believes that mark doesn't have to leave an over-sized carbon footprint. Kellogg's is making great strides toward sustainability, which include using Symantek Solution's displacement system and Coolerado's energy-efficient air conditioners to cool Kellogg's Mexicali plant.

Going green is nothing new to the breakfast cereal giant headquartered in Battle Creek, Michigan. The company created GoGreen Teams which sponsor eco-friendly events and activities within the organization. It also put in place a Chief Sustainability Officer and Board of Directors' Social Responsibility Committee to ensure the company sticks to its set guidelines for all sourcing activities, including agricultural ingredients. And, it sets measurable goals for reducing its emissions, water and energy use and waste.

KELLOGG'S MEXICAL CHALLENGE

The extremely hot and dry climate of the Kellogg's food processing plant in Mexicali, Mexico provided a cooling and energy consumption challenge many companies face – how to keep their buildings cool without continuing to spend tremendous amounts of money. Specifically, the challenge was to keep Kellogg's compressor room at 30°C (86°F), while ambient conditions reach as high as 50°C (120°F). The application – a processing plant at sea level elevation, was determined to need 50 tons of cooling. If Kellogg's opted to cool with traditional methods, they would consume roughly 60kw during peak cooling conditions.



CUSTOMER	LOCATION	PROPERTY TYPE
Kellogg's	Mexicali, Mexico	Food Processing

THE SOLUTION

To accomplish their goals, the company worked with Symantek Solutions, who developed a solution call Sustainable Air Displacement System that integrates Coolerado's technology. The solution is both adaptable and variable – adapting to production demands and weather conditions, and will gradually adjust to minimize energy consumption.

As the most efficient air conditioner made, Coolerado's technology is scalable, to meet the customer's cooling needs with ease and simplicity. For Kellogg's this meant they could accomplish their application requirements and save money. The Coolerado system will only use 7.1kw during peak power conditions, whereas a traditional system would consume as much as 60kw - equating to an energy reduction of 88%.

In terms of a direct dollar save due to the large energy reduction, the Coolerado system will save over \$62,000 annually.

Not only will this installation save the Mexicali plant a large amount of money, but the Coolerado system will also reduce their carbon footprint. In furthering Kellogg's green mission, the Coolerado system will only emit 27.37 ton of CO₂, compared to 231.41 tons of CO₂ that would be emitted from a traditional air conditioner.

Coolerado air conditioners offer an environmentally responsible choice because they use up to 90% less energy and boast an Energy Efficiency Ratio of 40 plus. (Most conventional air conditioners only reach up to 14.) That translates into lower carbon emissions.

Traditional air conditioners use chemical refrigerants, evaporators, and energy-consuming compressors to transfer or reject heat. Coolerado uses patented heat and mass exchangers (HMX) to cool ambient air through a process called indirect evaporative cooling. This means only cool, fresh air is brought into the building.

A CLOSER LOOK

10 Coolerado M50s cooling 19800 cubic feet of high heat load industrial air compressor space

Installation specifications:

- Two wall-mounted thermostats each control five M50s.
- All ten M50s cool a room with ten low-pressure, lobe-type blowers.
- The hot air is exhausted through two fans installed on the roof.
- Each M50 sits on a heavy-duty galvanized steel frame support. Each support has four ½" bolts to level the units.
- A 2" welded stainless steel water line with ½" pipe feeds the units. A water pressure regulator is installed upstream of the water filter to each unit.
- A water flow meter on the 2" line feeds the units to monitor water flow.
- A 1.5" galvanized steel drain line connects to an underground sanitary or process sewer.
- The stainless steel product air ductwork contains ½" foam rubber for insulation.



ABOUT THE KELLOGG COMPANY

Driven to enrich and delight the world through foods and brands that matter, Kellogg Company (NYSE:K) is the world's leading producer of cereal and a leading producer of snacks and frozen foods. Every day, our well-loved brands - produced in 17 countries and marketed in more than 180 countries - nourish families so they can flourish and thrive. With 2011 sales of more than \$13 billion, these brands include Cheez-It®, Coco Pops®, Corn Flakes®, Eggo®, Frosted Flakes®, Kashi®, Keebler®, Kellogg's®, Mini-Wheats®, Pop-Tarts®, Rice Krispies®, Special K®, and many more. To learn more about Kellogg Company, including our corporate responsibility initiatives and rich heritage, please visit www.kelloggcompany.com.

ABOUT COOLERADO

Founded in 2004, Coolerado designs, manufactures and markets super-energy-efficient air conditioning systems for light commercial use, based on its proprietary, patented and proven technology. Customer energy savings as much as 90% have been recorded with this cost-effective technology. Coolerado products are highly reliable and virtually maintenance-free and are currently operating in 26 countries around the world. The company is headquartered in Denver, Colorado (www.coolerado.com).