

# Case Study



Vari-Flow Keypad



Project:  
**Taco Bell**  
Schofield, WI

Engineering Firm:  
**Bayland Buildings, Inc.**  
Green Bay, WI

Accurex Rep:  
**Accurex Direct**  
Schofield, WI

## The Project **Taco Bell**

A new and larger Taco Bell restaurant was constructed in Schofield, Wisconsin in September 2010 to replace an older, smaller Taco Bell restaurant. The attractive, new restaurant is much more energy efficient, customer friendly and convenient for serving customers.



## Ventilation Objective

Design a kitchen exhaust system for a restaurant that minimizes annual energy costs and qualifies for a Wisconsin Focus on Energy rebate. Wisconsin's Focus on Energy (like programs in other states) offers financial incentives to businesses that install energy efficient lighting, compressed air, HVAC equipment, and solar energy systems. The program has saved Wisconsin businesses \$212 million in energy costs since it was initiated in 2001.

## Solution

A complete Accurex kitchen ventilation system with a Vari-Flow variable volume system linked to an exhaust fan (Model XRUD) with a direct drive Vari-Green motor was installed in the new Taco Bell restaurant. The Vari-Flow System senses the heat output of the grill and fryers. As the temperature rises, fan speed increases. The net effect is that air is exhausted and supplied based on required demand. Also as an additional feature of the Vari-Flow system, the safety backup starts the exhaust fan when the equipment generates 90 degrees F in the hood.

During idle cooking periods, the system can realize up to a 50 percent turndown in airflow. Designed with the temperature sensor in the capture tank versus in the duct collar where many other systems detect heat, the Accurex Vari-Flow provides a response that is up to five times faster than a duct-mounted sensor. This ensures that grease and smoke laden air is efficiently captured.

Other Accurex products in the ventilation system included an exhaust fan for condensation application (Model XRED), an appliance specific fire suppression system (Ansul® R-102), and a wall canopy hood (Model XBEW).



## What We Achieved

Annual energy savings attributed to the Vari-Flow System, itself, are projected to be \$591 — which will result in a two-year payback. The Vari-Green motor is expected to save \$150 more per year. That's a total annual energy savings for the owner of \$741. Maintenance costs were also reduced by using the direct drive Vari-Green motor eliminating the need to adjust pulleys and maintain belts. Because the exhaust system operates on demand, employees and customers have noticed that the new restaurant is much quieter than the older facility. In addition, the Vari-Flow system, in conjunction with the Vari-Green motor, qualified for a Wisconsin Focus on Energy rebate of \$150.



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