

Case Study Report



Project Identification

Customer : SUBARU
Location : Whitestown, Indiana

Design Specifications

Facility Warehouse 500,000' x 40' High
Winter Operation 64° – 0°



Project Challenge

Subaru's original heating system consisted of (4) Cambridge model direct fired 100% outside air units. Each was rated at 14,300cfm-2,400,000 btu/hr input. Since the building height is 40' and Cambridge units had a high discharge temperature of 160°, the units could never deliver the heat to the floor where it was needed. The ceiling maintained a temperature of 90° at the roof line and caused the units to run continuously...resulting in extremely high natural gas costs. Along with expensive utility bills, the temperature in the work environment was uncomfortable.

Cambridge units operate by discharging 100% outside tempered air into the facility. The heated air also carries combustion products from Cambridge burners. In Subaru's case...approximately 96 lbs of combustion products per hour were being introduced into the building. Without proper air movement, the combustion products condensed on the walls...resulting in wet walls and mold development.

Solution

ProLogis installed (4) Air Energy Systems ER-242-800 ceiling-hung air rotation units. Each unit is rated at 33,000 cfm – 800,000 btu/hr. The air distribution fans are programmed to run continuously 24 hours per day. The two 400,000 btu/hr heaters cycle on and off depending on the heating demands of the building. Two of the existing Cambridge units are designed to bring fresh air into the facility 4 hours per day...and then shut off. If the facility falls below the desired 64° temperature set by the ER-242-800 units, the Cambridge units will activate to add heat to the facility. The Cambridge units activate when the outside temperature falls below 17° and don't operate at all during unoccupied options.

Results

Adding four ER 242-800 units to Subaru has resulted in:

- ✓ Eliminated facility condensation on walls
- ✓ Circulated hot air from ceiling to floor where it is needed to maintain desired temperature of 64°
- ✓ Improved over-all comfort level in the facility
- ✓ Reduced heating costs by \$69,000 or 45% energy savings
- ✓ Qualified & received \$25,000 energy rebate from Vectren Energy Delivery



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