

Situation at Great Lakes Beverage:



Air-Row F-18
For Open Ceilings

Great Lakes Beverage was experiencing significant heat loss at its warehouse facility, resulting in out-of-control energy costs. Great Lakes Beverage called on the Air-Row Fan Company to address its issues. Air-Row targeted as the key problem area a 20,000-square-foot section of the 65,000-square-foot warehouse; this area had not only the greatest occupancy, but also saw the greatest use and the most traffic.

Used as a product staging area, this section of the warehouse has seven (7) truck wells and two (2) overhead truck entrance doors. The traffic in and out of the warehouse, and the opening and closing of doors, created an environment that squandered natural gas energy, taxed the HVAC system, and made for uncomfortable working conditions.

Solutions from Air-Row Fans:

Air-Row installed 20 of its F-18 destratification fans, its flagship product, to meet energy conservation goals. The warehouse building had temperature-troubled areas prior to the Air-Row Fan retrofit. These problems disappeared when the Arrow fans were turned on.

For the two-month period of December 2008 and January 2009, the energy usage was 306 CCF per day for building heat. The CCF per day usage for the same period in 2009/2010 was 177 CCF, a 40% decrease that meant an \$8,896.00 savings for the first two (2) months of the Air-Row fans in operation. The total installed cost for this project was \$18,000.00, which amounts to a simple return on investment of 2 years. The savings illustrated in detail in the table below is even more spectacular when considering the gas usage covers the entire 65,000-square-feet of the warehouse.

Analysis

The following table illustrates the placement of the 20 Air-Row F-18 fans, the floor and ceiling temperatures, and the temperature differentials. Temperature differential readings were taken at the fan air inlet and floor column contact point. The placement of the fans was a critical factor in the success of Air-Row Fans at Great Lakes Beverage.

Impact of Air-Row Fans at Great Lakes Beverage			
Change	Month	Daily Use	Savings
Before Air-Row Fans	Dec 2008 – Jan 2009	306 CCF	
After Air-Row Fans	Dec 2009 – Jan 2010	177 CCF	\$8,896

Change in Temperature Differential by Area				
Fan Location	Fan #	Floor Temp	Ceiling Temp	Temp Differential
North end	1	63	63	0
North end	2	63	63	0
Package area	3	63	63	0
Package area	4	63	63	0
Package area	5	64	63	1
Package area	6	65	66	1
Truck wells	7 & 8	70	69	1
Truck wells	9 & 10	76	71	5
Truck wells	11 & 12	69	70	1
Truck wells	13 & 14	70	66	4
Staging area	15	68	69	1
Staging area	16	65	67	2
Staging area	17	67	67	0
Staging area	18	61	62	1
Entrance doors	19	61	63	2
Entrance doors	20	61	63	2