

Case Study: REFRIGERATION AISLES CHALLENGES

Key Challenges:

Refrigeration presents challenges for supermarkets --

- Fog and condensation on refrigerated doors
- Water build-up and mold growth on floors
- Cold, uncomfortable refrigerated aisles

The challenges typically result in numerous employee and customer complaints.

Air-Row Solutions:

Air-Row fans are successful in resolving challenges --

- Directing air flow away from open cases and targeting air flow to aisle ways to maximize customer comfort.
- Minimizing door sweating for product display
- Reduced potential for customer slipping on floors

Other Wins:

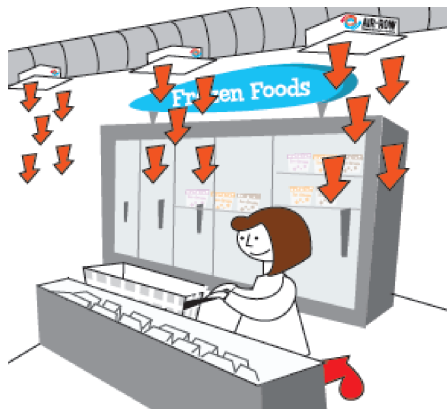
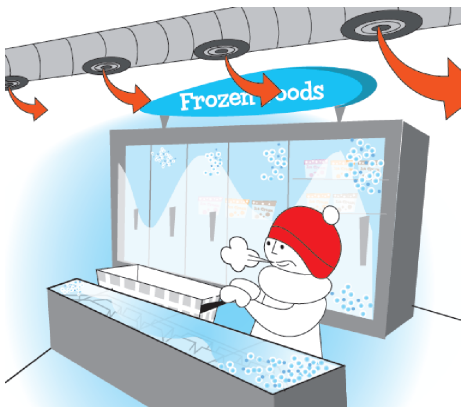
- Check-out areas -- Temperatures are even and customers no longer complain of discomfort. Air-Row fans reduce the infiltration of heat and humidity that comes with the continual open and closing of doors.
- Receiving Area and Stock Rooms -- Air-Row fans have reduced the run-time on the natural gas heating and cooling units by 40-50%. Thermostats may be set 3-5 degrees lower, for a 25% energy savings.

Air-Row Fans Product Family -- Left - For Open Ceilings, F-18 and F-18R; Right, for Grid Ceilings, LA-248 and DA-248.



Energy Management Strategy - Reclaimed Air for Temperature Control and Overall Energy Savings

Installed Air-Row fans serve as the first step in a supermarket's air distribution system. Large air handlers (heating and cooling) come on only when there is a need for thermal change, and cycle off as change is satisfied.



| Before Air-Row Fans: | | | |
|----------------------|-------|---------|------|
| Area | Floor | Ceiling | Diff |
| Deli Area | 59° | 65° | 6° |
| Freezer Aisle | 58° | 66° | 8° |
| Freezer Aisle 2 | 54° | 63° | 9° |
| Check Out | 60° | 66° | 6° |
| Stock | 50° | 85° | 35° |

| After Air-Row Fans: | | | |
|---------------------|-------|---------|------|
| Area | Floor | Ceiling | Diff |
| Deli Area | 66° | 69° | 3° |
| Freezer Aisle | 65° | 68° | 3° |
| Freezer Aisle 2 | 67° | 68° | 1° |
| Check Out | 66° | 67° | 1° |
| Stock | 56° | 73° | 16° |