

Supermarket increases refrigeration capacity while improving energy efficiency



Result

- Skopps Supermarket, a supermarket located in New York's Catskill Mountains, replaced its existing store, adding both square footage and refrigeration equipment while lowering the percentage of energy used
- Replacement of multiplex system with individual outdoor condensing units maximizes reliability, reduces risk of loss
- Extremely quiet operation avoids disturbing neighbors living in nearby summer homes; high wall exterior mounting is a deterrent against potential theft and vandalism, enables shorter wiring runs and eases access for service from a 12' stepladder

Application

Reach-in units, food storage coolers and freezers

Customer

Skopps Supermarket, Inc. is a family-owned supermarket located in Fallsburg, New York. The supermarket operates seasonally, serving summer vacationers and local residents from June through late August. The new 10,000 square foot store opened in 2015. As planning for the new store evolved, the owner weighed the refrigeration options available – central plant vs. multiple condensing units -- with the contractor, Steve Eschenberg of Eschenberg Temperature Control, Callicoon, New York.

Challenge

As planning for the new store's refrigeration system was discussed, reliability was a primary concern. As the store carries quality refrigerated meats, poultry and seafood, potential system failure could create a significant financial loss. Because the supermarket is located in a rural location; power grid concerns required that the system work safely with a backup generator to guard against a lost phase during hot weather

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– Joel Lowy
Skopps Supermarket

with no equipment loss or damage. Efficient operation was also a strong desire.

As Skopps Supermarket is located close to a vacation home community; local noise restrictions dictated the need for a quiet system operation. And because the market is closed nearly nine months of the year, equipment placement is an important factor in deterring theft and vandalism

Solution

Eschenberg Temperature Control contacted Emerson Climate Technologies and Meier Supply Co. Inc. for product availability and technical resources when planning a multiple condensing unit refrigeration system that would answer Skopps Supermarket's reliability, energy and installation needs. The system was designed around 17 Copeland Scroll™ Outdoor Refrigeration Unit X-Line Series mounted high on the supermarket's exterior wall closest to the majority of refrigeration devices, allowing for shortened wiring and piping runs. The system was designed and approved in early 2015 as plans for the new building were being finalized. As building construction progressed throughout the spring, Eschenberg Temperature Control worked to mount the units on the building's exterior in mid-May and began wiring and piping in early June.

The units provide consistent and reliable refrigeration and control for the supermarket's meat and fish cutting rooms and deli, a 34-door freezer, 16' grab-and-go case, plus produce, dairy, meat, seafood and coolers. The new store is four times the size of the old and holds five times the refrigeration equipment. Yet energy use, according to owner is lower, percentage-wise. He reports that there have been no noise complaints from the neighbors and that the units can't be heard when customers leave the supermarket.

Due to the installation flexibility offered by the units, the supermarket was able to mount the equipment high on an exterior wall, rather than in the parking lot, which reduces the potential for theft or vandalism. The supermarket experienced no vandalism issues over the winter of 2015-2016. Start-up and adjustments for the 2016 season will take place in May.



Summary

The Copeland Scroll Outdoor Refrigeration Unit X-Line Series offers high energy efficiency operation for food service applications such as Skopps Supermarket. An ultra quiet design enabled Skopps Supermarket to obtain the refrigeration levels necessary without disturbing the surrounding neighborhood.

Available in sizes from 1.5 to 6 HP, the X-Line Series combines the latest Copeland Scroll compressor technology, variable speed fan motor control, large condenser coils and a high efficiency fan blade design. This allows for up to 40 percent higher annual energy efficiency when compared to standard offerings; in the case of Skopps Supermarkets, the energy efficiency resulted in no increased energy costs for the new store, even while operating approximately five times the refrigeration equipment.

The slim profile, lightweight design and wall mount capability of the X-Line Series provide additional benefits such as crane rental savings, flexible location option, ease of installation, service savings and compliance with noise ordinances.

Resources

For more information to achieve similar benefits in your application, contact:

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