

the Elephant in the room

Don Langston

Implement an equipment maintenance program before it's too late part One of Two

A restaurant is more complex than almost any other type of commercial building. Many of its systems are interdependent on each other to maintain optimal operating efficiency. There is a consensus among the majority of the restaurant industry decision makers that most of the mechanical equipment and systems should be maintained. The maintenance tasks focus on the inspection, cleaning and testing of the equipment on a regular basis. The opinions on the costs and value of performing these services vary greatly because restaurants themselves are complex and there is no one-size-fits-all solution.

Maintenance Considerations

Restaurants' hours of operation typically range from 16 to 24 hours a day. Most of the HVAC, refrigeration and ice-making equipment have run-time hours that match or exceed the restaurant's operating hours. The longer a piece of equipment operates, the more likely it will require more periodical inspections.

Restaurants operate in a wide variety of climates, and the equipment inspections, specific tasks and cleaning intervals vary in Alaska versus Alabama. The number of hours a package rooftop unit operates in the heating mode will be significantly higher in Minnesota than in Florida. The design of a comprehensive maintenance program should take into account the inventory of the equipment, the age and condition of the equipment, the concept, the hours of operation and local climate conditions.

A comprehensive equipment maintenance program will help provide a comfortable environment for customers and employees, improve equipment efficiency, increase equipment reliability, extend equipment life and reduce repair and energy costs.

The Bottom Line

Before getting into the details of maintenance program design, let's cut to the chase and talk about the costs. One of the biggest obstacles to the design and implementation of a comprehensive maintenance program is balancing the costs of the program versus maximizing the tangible and intangible values of the program.

The bottom line is a comprehensive maintenance program makes economic sense. It provides a solid return on the investment dollars because restaurants have the highest electric cost per square foot.

Routinely, when I perform benchmarking studies, it is very common to find full-size restaurants operating in a wide range of \$3.50 to \$9 per square foot, quick-serve restaurants operating in the \$5.50 to \$18 per square foot range and the smaller café concepts in the range of \$8.50 to \$25 per square foot.

I always find that the better the maintenance program, the lower their operating cost per square foot. I recently reviewed the electrical data from 72 quick-serve restaurants that had no maintenance program in place. They had spent \$1.6 million in electricity in the previous 12 months. Based on the customer's equipment inventory and condition, the building and electrical data, we benchmarked the performance and improvement and projected \$400,000 in annual electric savings. The equipment maintenance program now put in place is more than paying for itself and is saving additional funds that can be reinvested back into the business.

These are significant, real-life savings that can be achieved through the implementation of a comprehensive maintenance program. For most companies, obtaining the square footage of each site is relatively easy. Obtaining the monthly and annual electric consumption in kWh and dollars can prove to be more of a challenge. Other tools can also be used to help benchmark building performance besides electrical cost per square foot. Companies that operate across many states or multiple utility providers often find that kWh per square foot is the best approach to benchmark building and equipment performance.

Using the electrical consumption example of 54.5 kWh/sq. ft. from the chart below, based on a 6,000-square-foot casual dining restaurant, inputting \$0.10/kWh as the electrical rate would result in \$5.45/sq. ft. (54.5 kWh/sq. ft. x \$0.10 kWh).

Closing Thoughts

A restaurant's HVAC units, refrigeration and ice machines typically run without much thought, until they encounter a problem. Of course, designing and implementing a comprehensive maintenance program with a trusted vendor partner will not eliminate unplanned service interruptions. However, a robust maintenance program tailored for your concept's equipment, local environmental conditions and hours of operation will provide increased reliability and improved energy efficiency, extend the equipment life and maximize the time value of the money invested in the equipment.

There is no easy answer to these questions and the design of an effective equipment maintenance program will require time, technical expertise, a financial commitment from senior management and trusted vendors.

Don Langston is the President of Air Rite Air Conditioning and Refrigeration Inc. He has spent more than 30 years within the restaurant industry and has a passion for educating customers on the proper design and operation of their equipment to maximize operating efficiency and reduce lifecycle cost.