

White Castle Restaurants

Commercial Kitchen HVAC • North America

About White Castle Restaurants

White Castle Restaurants, famous for mouth-watering hamburgers, claims many firsts including being the first fast-food hamburger chain ever, the first to sell a million hamburgers and the first frozen fast food for sale. After 80 years in business White Castle now has 380 restaurants across the United States, well-known for high quality food and customer service.

“We are achieving better control of space humidity, temperature and energy costs in our units that heat and cool with 100 percent outdoor air.”

— Jeff Lynch, White Castle project engineer.



Building Type

Each White Castle restaurant has about 2,000 square feet of space.

Type of HVAC System

New and renovated White Castle restaurants will feature a Total Kitchen HVAC™ system developed by LC Systems and Trane.



Restaurant Rooftop Unit developed by Trane and LC Systems.

Systems Installed

Each new White Castle Restaurant will feature the new Total Kitchen HVAC™ system and Restaurant Rooftop Unit developed by LC Systems and Trane.

Challenge

A big challenge in the fast food industry is achieving proper kitchen exhaust while delivering efficient, effective customer and employee comfort. Poorly ventilated kitchens can drive cooks and employees from the cooking areas, leading to production delays, quality problems, high employee turnover and reduced repeat business. (See ASHRAE Journal “Keeping Cooks in the Kitchen,” by Brown and Van Straten, June 2003.) Significant amounts of outside air are needed to make up for kitchen hood exhaust. But meeting this requirement can push comfort heating and cooling energy costs through the roof. With double-digit increases in energy costs, restaurant owners and operators are looking to reduce energy consumption and costs without negatively impacting customer and employee comfort.

Solution

White Castle worked with Trane and Steve Brown at LC Systems of Dublin, Ohio, to develop a new restaurant rooftop unit based on Trane’s popular Voyager™ and Precedent™ packaged platforms. LC Systems manufactures

commercial kitchen ventilation and replacement air units. The new Total Kitchen HVAC™ system integrates traditional restaurant heating and cooling with kitchen ventilation by supplying 100 percent outdoor air to condition the space and replace the air exhausted through the kitchen ventilation system. The new unit features fully modulated direct- or indirect-fired heating, and modulating cooling to deliver better temperature and humidity control. Best of all, the Total Kitchen HVAC system requires 35 percent less airflow than old technology units to deliver effective kitchen exhaust.

Results

According to Brown, the new unit is up to 25 percent more economical to operate and maintain. Jeff Lynch, White Castle project engineer, said, “These 100 percent outdoor air designs are the most comfortable of any we have installed or tested.”

From integrated comfort systems to systems management and climate controls, Trane ensures that your building environment is right so you can run your business better.



Trane optimizes the performance of homes and buildings around the world. A business of Ingersoll Rand, the leader in creating and sustaining safe, comfortable and energy efficient environments, Trane offers a broad portfolio of advanced controls and HVAC systems, comprehensive building services, and parts. For more information, visit www.Trane.com.