



“YANMAR system selection and design is easy and intuitive for anyone familiar with VRF systems, and the controls are a snap to install and startup. The greenhouse gas emissions for these systems are a fraction of that used by traditional systems, and even beat out electric VRF systems in total carbon footprint. We always consider YANMAR systems for any green project or any owner interested in the lowest possible energy cost system they can install.” - Miles Johnson, Mechanical Engineer, Croft



Project Overview

The YANMAR EVO//CENTER is a 52 acre property with a brand-new, state-of-the-art 49,000 square foot building that serves as a training and customer experience facility for YANMAR America. The mission of the facility is to Empower Sustainability, and as such, YANMAR decided to install eight 14-ton three pipe VRF outdoor units connected to 45 indoor units and one 10 kW CHP with blackout start along with Building Management and Remote Monitoring Systems for centralized, monitored building control.

Reason for Choosing YANMAR

Croft and Associates engineers, in collaboration with the YANMAR Energy Systems Division, worked to choose the best solution for the EVO//Center's heating and cooling needs. The YANMAR gas-powered VRF 3-pipe system was determined to be the best option based upon the following benefits:

- The VRF 3-pipe system is utilized in 80% of the building, with the ability to heat and cool a space simultaneously.
- The utilization of eight 14-ton VRF systems with a single-phase power connection lowers the initial cost of wiring and allows for a downsized electrical distribution panel.
- YANMAR's VRF system is designed to supply the precise amount of refrigerant necessary to reach the desired comfort level without over heating or over cooling. This results in the system running at a lower capacity with less frequency, while still providing the desired results.
- The system has the ability to track system conditions and provide maintenance alerts via Remote Monitoring Adaptors.
- Electrical consumption is decreased resulting in lower operations costs.

In addition to the VRF system, a YANMAR 10 kW Combined Heat and Power unit blackout start was installed in order to supply the portion of building's domestic hot water, as well as provide continuous power to the server room even during power outages.

About YANMAR America Energy Systems

YANMAR America Energy Systems in the North, Central and South American headquarters for the company's Variable Refrigerant Flow and Combined Heat and Power systems. Our team and products are focused on sustainability, reliability, and efficiency.



QUICK FACTS

APPLICATION: Office Building **LOCATION:** Acworth, GA **COMMISSIONING DATE:** August 2017
PRODUCT INSTALLED: NFZP168J x 8 & CP10WN-SN x 1 **RESULTS:** Reduced electrical infrastructure, zoned control with simultaneous heating and cooling capability, consistently reliable operation



Results

- Reduced electrical consumption and electrical load for heating and cooling the building by switching to a natural-gas driven YANMAR engine from an electric-based system.
- Average savings of more than \$2,800 per month during the first ten month of operation.
- By using natural gas as energy source, the building produces lower amounts of harmful emissions than traditional heating and cooling equipment.

Conclusion

In the first ten months of operation, the 112 tons of YANMAR VRF units provided an operating costs savings of almost \$28,000.

YANMAR VRF Operating Costs - November 2017 through August 2018



*Operating costs data is a calculated estimate only based on Remote Monitoring and local average utility costs or bills

