



The natural gas heat pumps provided an electrical load reduction of **approximately 30%** and an **80% carbon emission reduction** as compared to electric heat pumps powered by the grid.



## YANMAR GHP

YANMAR was invited to attend a meeting with our dealer, Weaver Heating and Air, at a large training facility in Georgia. We were able to introduce the YANMAR VRF products to Weaver's customers. Which allowed us to offer a better solution than just replacing the rooftop units.

The customer ultimately chose the YANMAR system as it would give them more control over the spaces utilized for training, and the operational cost savings that were projected. YANMAR VRF provided the zoning for 13 different zones, that was needed for the facility, and lower operating costs.

In the fall of 2019, the units were commissioned. There were five of the NFZP168J, 14-ton heat recovery units, and one NNCP144J, a 12-ton heat pump. We also added an iTM for centralized control for the facility manager to allow control from afar.

After the first year of operation, the YANMAR VRF systems exceeded expectations regarding the operational savings. Reported to us from the customer, estimated savings are 39% annually compared to the older rooftop equipment.

## YANMAR AMERICA ENERGY SYSTEMS

YANMAR CHP and VRF/GHP was selected for the energy savings possibilities. The VRF/GHP system would reduce peak electric demand and increase heating efficiency. YANMAR CHP offered the ability to provide electricity, while also providing the hot water for the pool and showers. The system was integrated with a backup generator, battery, PK high efficiency boiler, building controls and solar.

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.



## BENEFITS

**VRF Systems are 20%-25% more efficient than conventional systems.** VRF systems have additional upfront costs, but are offset by lower energy bills, repair costs over time, and increased comfort for occupants.

**Individual Zone Control:** This customizable solution allows you to control different comfort needs independently. This leads to a reduction in complaints that offices are either too hot or too cold, since offices can have individualized controls. Unoccupied rooms' climate controls can be switched off, lowering your energy bill by not having to pay to heat and cool, unoccupied spaces.

**Quiet:** In a VRF system, the noisier condensing unit is typically outside, and the indoor air handlers are smaller and quieter than a traditional systems.

**Consistent Comfort:** The VRF HVAC system can detect the precise requirements of each zone, and send the precise amount of refrigerant needed to do the job. As a result, each area of your space is consistently comfortable with well-controlled humidity and no hot or cold spots.

**Space:** VRF systems take up much less space than forced-air systems, which is a benefit for upgrades in existing structures.

**Long-term Operation:** Yanmar offers lowered system life cycle costs. Yanmar maintenance intervals are 10,000-hours. Average is 2.5-5 years between scheduled maintenance. Yearly maintenance is a minimal requirement of visual inspections, filter changes inside, cleaning of the condensing unit coils with water only (no chemicals).

Remote monitoring is utilized to protect our customer's asset. YANMAR offers a monitoring service at no extra charge to the customer in order to protect the asset for the customer. All that is need to accomplish this is a connection to the Internet provided by the customer. This is a 24-7 monitoring service that sends e-mail notifications in the event of an error. Generally, this allows YANMAR to respond to any issues quickly and accurately to reduce down time.



**VRF Systems are 20%-25% more efficient than conventional systems.**

