



MIDDLETOWN RECREATION CENTER MIDDLETOWN, CT



The recreation center functions as an emergency center in a natural disaster.



PROJECT OVERVIEW

Middletown Recreation Center was a combined effort of Energy Services company Clarke Energy, Landmark Architects, Yanmar Energy systems and Controlled Air, Inc. This project was developed with a goal of producing resilient, clean renewable energy for a large recreational building, in addition to serving as the reliable source of power in any utility outages or natural disasters. In the wake of recent severe weather incidents and local power interruptions. This microgrid provides low carbon electricity, heating, and cooling to the facility. This resilient project comes with a total capacity of 2.2 MWe. The anchor being a 35 kW CHP engine that also provides 204 kBTU/hr of hot water at high efficiency. To support this, a 7.6kW battery energy storage system, as well as 80.2 kW of solar photovoltaic units that exports energy to the utility grid when needed. A backup 100 kW natural gas generator also was installed as a final piece to the overall system resiliency. The entire system is controlled through an advanced microgrid controller system from ComAp.

REASON FOR CHOOSING YANMAR

YANMAR with more than 35 years experience in GHP & CHP Mfg was selected for the energy savings possibilities. The CHP/ VRF system would reduce peak electric demand and increase heating efficiency and capacity especially in the colder climate in Connecticut. YANMAR VRF/GHP offered great economic benefit and energy resilience for the facility. With the addition of Heat Recovery, customized and comfortable conditions can be maintained and individualized regardless of adjacent spaces demands.

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.





It is estimated that this renewable energy microgrid system will reduce CO2 emissions by 192 tons/year, as compared to the previous methods of electricity generation through the central utility grid.

MIDDLETOWN RECREATION CENTER MIDDLETOWN, CT

QUICK FACTS

APPLICATION: Recreational center with auditorium, gym, and place of emergency shelter.

LOCATION: MIDDLETOWN, CT
2023

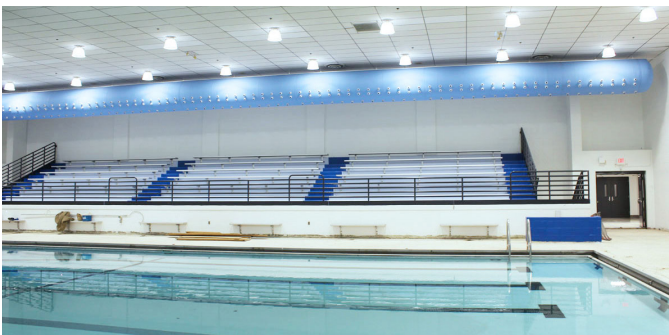
PRODUCTS INSTALLED: Yanmar Chp Cp35d1
Yanmar Ghp Gp168
Solar
Solar Photovoltaic
Standby Generator
Battery Energy Storage System

MICROGRID OVERVIEW

Reduced operation costs
Zone control
Efficient heating capability

RESULTS

The microgrid will be an emergency shelter during extreme weather events and town wide outages. The system produces up to 40% of the buildings energy needs. The CHP will produce both electricity, as well as hot water for showers and the pool. The Yanmar GHP and CHP system aligned with their goals for a more sustainable future. As well as providing solutions for climate and energy challenges.



**CHP Provides 35kW of electricity and 204.1kBTU/hr of hot water.
40 percent of the energy the building needs produced on site.**

