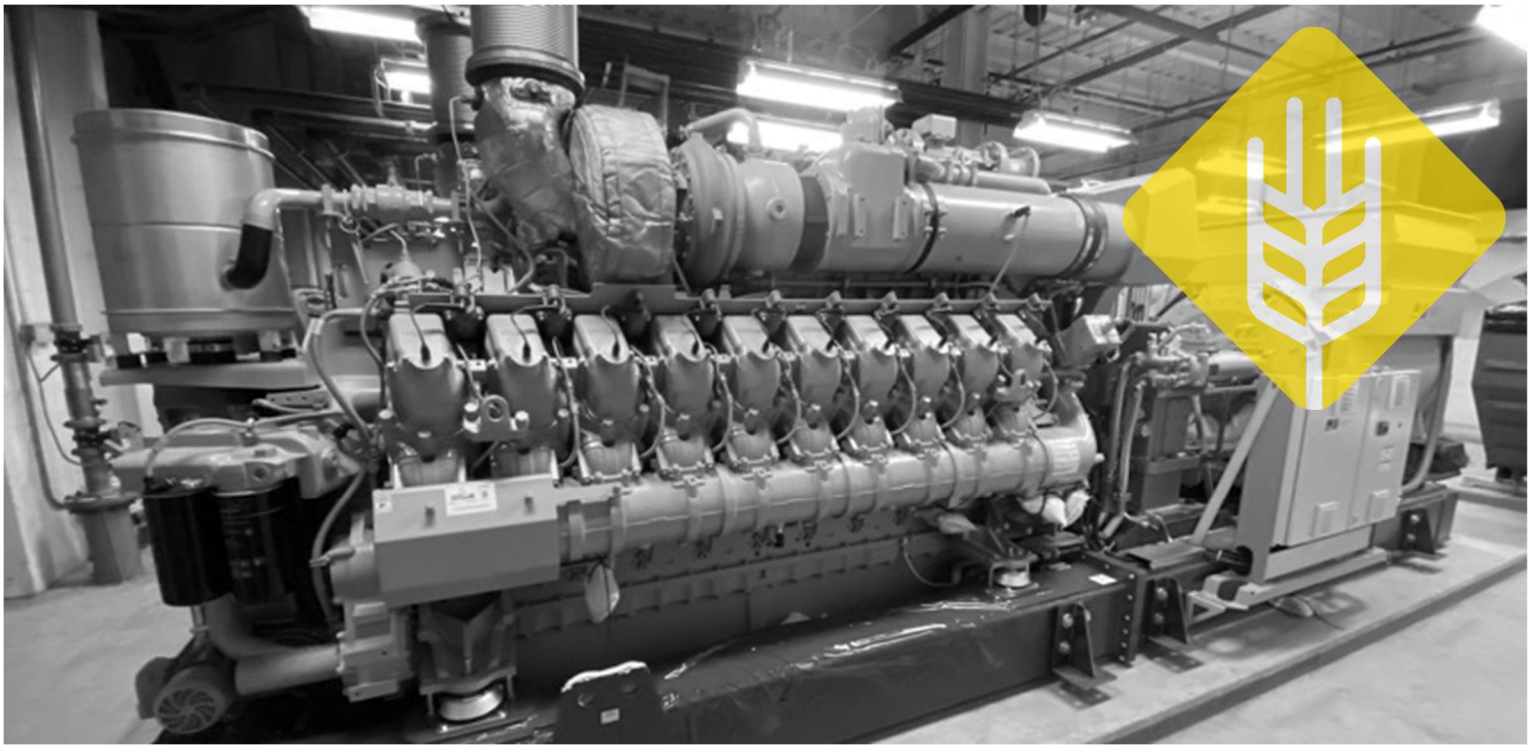


CARILION CLINIC MEMORIAL HOSPITAL

ROANOKE, VA – 2,500 KW COMBINED HEAT AND POWER (TRIGENERATION)

In 2021, Carilion Clinic broke ground on a $400 million expansion to the Carilion Roanoke Memorial Hospital. The expansion consists of a new 400,000 square foot bed tower that features an underground parking garage, additional emergency rooms, cardiovascular beds and cutting-edge technology. As part of the project, a new 2,500 kW combined heat and power system will be integrated with the clinic's existing central energy plant including interfacing with existing boilers and equipment, emergency power, and fire protection systems.

The CHP system consists of a Rolls Royce / MTU engine with a Stamford alternator, a Hering heat recovery steam generator and hot water heat recovery, making this system a trigeneration system. White Harvest Energy prepared engineering submittals, drawings and specifications for project and subsequently selected to supply the trigeneration equipment. WHE was responsible for field verification and fit, unloading and supervision of installation. Once the balance of plant is complement, WHE will be responsible for commissioning, and startup.

SOLUTION PROVIDED

- **Generating Capacity:** 2,500 kWe
- **CHP Equipment:** One MTU 20V4000 Reciprocating Engine
- **Heat Recovery:** Hot water and Steam
- **Type of Fuel:** Natural Gas

OUR ROLES

- Project Management
- Design support
- Equipment supplier

IMPACTS

- Trigeneration outputs:
  - 20,750 MWh electricity annually
  - 3,500 lb/hr steam
  - 5,000 MBtu/hr hot water
- Reduced cost for energy needs
- Lower reliance upon the energy grid
- Reduced carbon footprint
- Improvement in power factor