

Cathedral Village

A PHILADELPHIA CONTINUING CARE RETIREMENT COMMUNITY INSTALLS A COMBINED HEAT AND POWER (CHP) SYSTEM TO PROVIDE HEAT AND ELECTRICITY

Originally opened in 1979, Cathedral Village is a Continuing Care Retirement Community (CCRC) located in northwest Philadelphia, PA, and is part of the Presbyterian Senior Living family of communities. Cathedral Village has 283 apartments with an additional 133-bed skilled nursing and rehabilitation center and is dedicated and committed to providing older adults with quality service and a meaningful experience.

THE CHALLENGE:

Cathedral Village identified the need for a sustainable energy makeover to their facility to provide reliability for their residents' energy consumption for cooking, heating, laundry and water heating.

THE SOLUTION:

With the combination of ENER-G Rudox, the Philadelphia Gas Works, and clean energy specialists, Blue Sky Power, a solution was designed, engineered, constructed and financed to install a high efficiency 265 kW natural gas engine to provide heat and electricity, with future expansion to include an additional 265 kW engine.

The new natural gas powered CHP system will:

- Offset 1,158,538 kWh of electricity and 6,140 MMBtu of heating and cooling annually;
- Reduce the facility's carbon footprint by approximately 350 metric tons of CO₂ equivalent; and
- Incorporate future expansion for an additional 265 kW engine so additional energy savings opportunities may be put into place.



BlueSkyPower
Connects Clean Energy



THE SYSTEM:

Cathedral Village installed a high-efficiency 265kW natural gas ENER-G Rudox CHP engine. This system will off-set 1,158,538 kWh of electricity and 6,140 MMBtu of heating and cooling, with the capability of adding an additional 265 kW engine for future expansion and energy savings.

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SUCCESS BY THE NUMBERS:

END USE / MARKET SEGMENT	Continuing Care Retirement Community (CCRC) including independent living, personal care/assisted living, skilled nursing/rehabilitation
TECHNOLOGY	Combined Heat and Power Natural Gas Engine
PROJECT COST	ENER-G Rudox "Energy Services Agreement" (20-year agreement, \$0 up-front investment capital)
GRANTS / INCENTIVES	\$500,000 Pennsylvania's Commonwealth Financing Authority
ENERGY PREDICTABILITY	Reduction of the facility's carbon footprint by approximately 350 metric tons per year* <small>*(the equivalent benefit of removing 74 passenger vehicles from the road annually)</small>
SAVINGS	\$145,000 annual reduction in electric utility bill

Additional savings under PGW's cogeneration rate (customers who utilize CHP waste heat to produce onsite electricity) will enable Cathedral Village a reduction in their kWh charges to approximately .04-.05 per kWh compared to .09-.10 per kWh market rate. Cogeneration is an excellent application for Cathedral Village as it provides the resiliency required for a stable system with almost no blackout time.

How CHP Works:

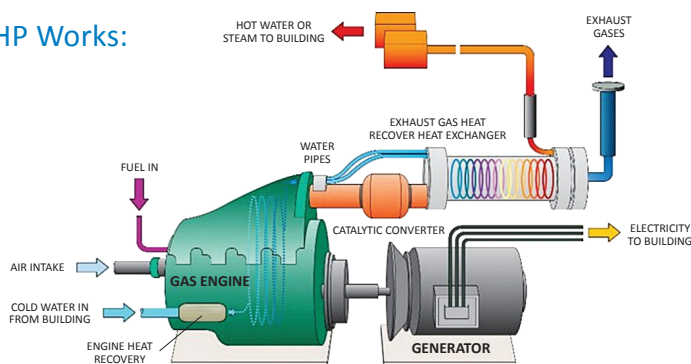


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CUSTOMER SUCCESSES:

The Philadelphia Gas Works has helped these customers evaluate their energy challenges with a Combined Heat and Power solution that fit their needs:

MIXED-USE RESIDENTIAL/COMMERCIAL
AIMCO converted three of their Philadelphia properties, encompassing almost 1,300 residences and mixed retail/commercial spaces, to CHP.

PREMIER LUXURY HOTEL
THE LOGAN HOTEL installed three 65 kW natural gas fired microturbines to generate its own electricity and heat for a 364-room luxury hotel.

GRADUATE COLLEGE
THE PHILADELPHIA COLLEGE OF OSTEOPATHIC MEDICINE added two 65 kW CHP units to generate on-site electricity to their existing natural gas heating and cooling equipment uses.

NATIONAL HISTORIC PARK
INDEPENDENCE VISITOR CENTER reduced electric demand and their carbon footprint for their 50,000 sq. ft. facility by installing a CHP system to maximize energy efficiency.

CORPORATE BUILDING
PGW HEADQUARTERS integrated a state-of-the-art 200 kW microturbine CHP technology into its existing facility at 800 West Montgomery Avenue, Philadelphia.

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