#### **RESIDENTIAL BUILDING**

**Company Name** Cabrini Terrace

Location New York, NY (New York County)

**Installation Date** October 2012

**Operating Experience** October 2012

CHP Equipment Two Intelligen Induction units (80kW and 55kW)

Generating Capacity 135 kW

Heat Recovery Application Space Heating and Domestic Hot Water

**Type of Fuel** Natural Gas

"In the wake of Hurricane Sandy, we have learned the value and importance of having clean-energy technologies like CHP in place that will keep the lights on and systems running for our residences and businesses."

> - Governor Andrew M. Cuomo

# Co-op Lowers Operating Costs and Fuel Oil Consumption with CHP System

#### BACKGROUND

Cabrini Terrace is a 16-story cooperative building with 217 individual apartments with a total occupancy of 438. There is also an attached, single story garage structure with an open roof. Cabrini Terrace has installed two combined heat and power (CHP) units to provide electrical power and heat for domestic hot water (DHW) for the building. The CHP units, the DHW storage tanks and heat exchanger are located in an enclosure in the parking garage.



Cabrini Terrace apartments, New York City

#### THE APPLICATION

The CHP units include one 55kW unit and one 80kW unit. The 55kW CHP induction unit is connected in parallel with the existing electrical distribution grid.

The 80kW synchronous unit is capable of "black start" operation so that it can operate isolated from the electrical grid to supply priority electrical loads during a power outage. The system will help meet the electrical load during the peak summer load period when individual apartments are running their air conditioners.

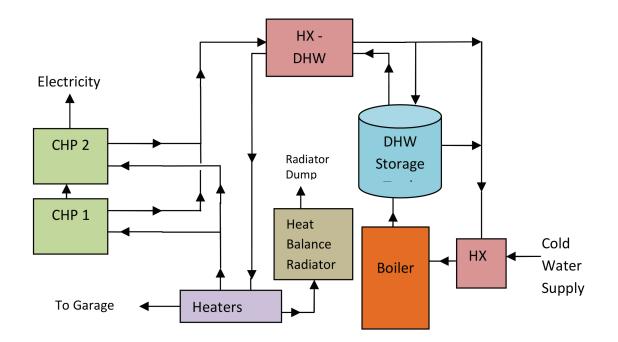
CHP thermal output is recovered and used to preheat the DHW supply for the building and to heat the parking garage. This heat recovery reduces the demand for steam from the boiler.

# **CHP SYSTEM AND EQUIPMENT**

The CHP system installed at Cabrini Terrace consists of two Intelligen Power Systems. The CHP DHW system connects to the building cold water supply where the potable water is pre-heated before flowing into the boiler. Two (2) unit heaters are installed in the garage to utilize the CHP thermal output to heat the garage in the winter. A heat balance radiator located on the parking garage provides "dumping" capacity for excess thermal output.



#### **Combined Heat and Power for a Residential Building**



#### **ECONOMICS AND ENVIRONMENTAL BENEFITS**

The CHP system installed at Cabrini Terrace will provide continuous electric power to priority loads which include an elevator, lighting in the hallway, lobby and space conditioning. The CHP system will reduce summer peak electric demand by 100 kW, reduce annual electric consumption by over 563 MWh and reduce number-6 fuel oil consumption by 28,000 gallons/year. Monitored data are being collected from the site and are available in an hourly format on NYSERDA's DG/CHP website starting from October 2012.

### **SUMMARY OF BENEFITS**

- Reduces carbon footprint.
- Decrease in energy use from the grid.
- Significant reduction in energy costs.

# **ADDITIONAL RESOURCES**

- Developer/Engineer: www.dsmea.com
- Equipment Manufacturer: www.intelligenpower.com
- DG Integrated Data System: chp.nyserda.org



Intelligen 80 kW Induction cogeneration system

# nyserda.ny.gov/chp 1-866-NYSERDA



