

**MULTIFAMILY HOUSING**

**Company Name**  
Chelsea Mercantile

**Location**  
New York, NY  
(New York County)

**Operating Experience**  
September 2013

**CHP Equipment**  
(2) Aegis AEGEN-75  
Engine Generators

**Generating Capacity**  
150 kW

**Heat Recovery Application**  
Space Heating  
Domestic Hot Water

**Type of Fuel**  
Natural Gas

# CHP Helps Keep Housing Costs Down in Multifamily Building

## BACKGROUND

The Chelsea Mercantile is a 19 story tower building located in New York City, NY. The building houses 351 apartment units. The combined heat and power (CHP) system installed at the Chelsea Mercantile building produces electricity for the building and hot water used for domestic hot water and space heating.

## THE APPLICATION

The Chelsea Mercantile CHP system is designed to meet the thermal and power base loads of the building. The system consists of two (2) 75-kW natural gas engine generators. Heat is recovered from the engine generators in the form of hot water to use for the buildings space heating, provide water heating on two domestic hot water loops, and provide an additional heat source to the building water source heat pump loop (WSHP). Excess heat is rejected through the existing cooling towers on the WSHP system, and through a variable speed dump radiator. The heat recovery loop includes isolation heat exchangers (HXs) at each thermal load.

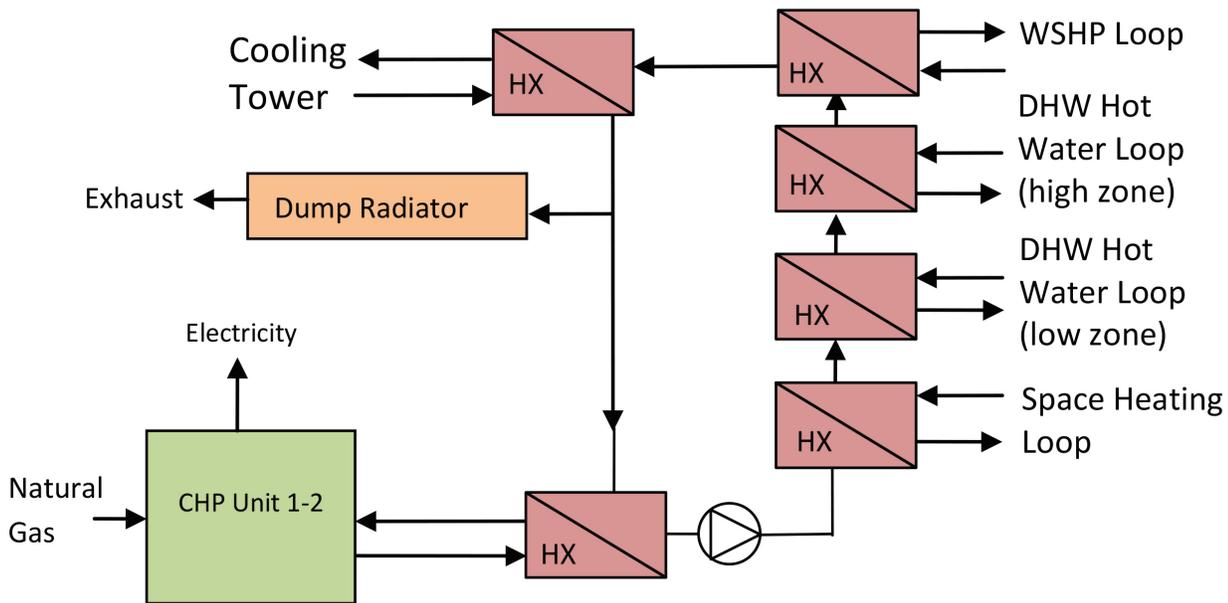
## CHP SYSTEM AND EQUIPMENT

The Chelsea Mercantile CHP system consists of two 75 kW Aegis AGEN-75 engine generators that are located in the sub-cellar level of the building. The CHP units are coupled with a HX that connects the heat recovery loop to the building's space heating hot water loop, a HX for the low zone DHW loop, a HX for the high zone DHW loop, a HX for the WSHP loop and a HX for the dump radiator and cooling tower loop.



*Chelsea Mercantile apartments, New York City*

## Combined Heat and Power for Multifamily Housing



### ECONOMICS AND ENVIRONMENTAL BENEFITS

The CHP system increases the facility's operational efficiency and decreases energy costs. The system also reduces CO2 emissions, leaving behind a smaller carbon footprint that would result from more traditional uses of resources. Because CHP systems are located on-site at the energy consumer, the distribution losses that central power plants experience are eliminated. Monitored data are being collected from the site and are available in an hourly format on NYSERDA's DG/CHP website starting from September 2013.

### SUMMARY OF BENEFITS

- Reduces carbon footprint.
- Reduction in energy costs
- Less reliance on utility for energy

### ADDITIONAL RESOURCES

- **Developer/Engineer:** [www.aegisenergyservices.com](http://www.aegisenergyservices.com)
- **Equipment Manufacturer:** [www.aegisenergyservices.com](http://www.aegisenergyservices.com)
- **DG Integrated Data System:** [chp.nyserda.org](http://chp.nyserda.org)



Chelsea Mercantile AEGEN-75 engine generator

[nyserda.ny.gov/chp](http://nyserda.ny.gov/chp)  
**1-866-NYSERDA**