

## Museum

### Company Name

The Intrepid Museum

### Location

New York, NY

### System Installation Year

2015

### Data Collection

Beginning November 2015

### Generating Capacity

300 kW

### CHP Equipment

Three Tecogen InVerde Ultra  
INV-100 generators

### Heat Recovery Application

Hot Water for Heating & Cooling

### Type of Fuel

Natural Gas

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# Combined Heat and Power System Saves Museum Complex Money

## BACKGROUND

The Intrepid is a decommissioned aircraft carrier that is a part of the Intrepid Sea, Air & Space Museum. This military and maritime history museum is located at



*Aerial view of Intrepid*

Pier 86 at 46th Street in Manhattan. A combined heat and power (CHP) cogeneration system was installed to provide reduced energy costs for hot water for heating, and chilled water for air conditioning.

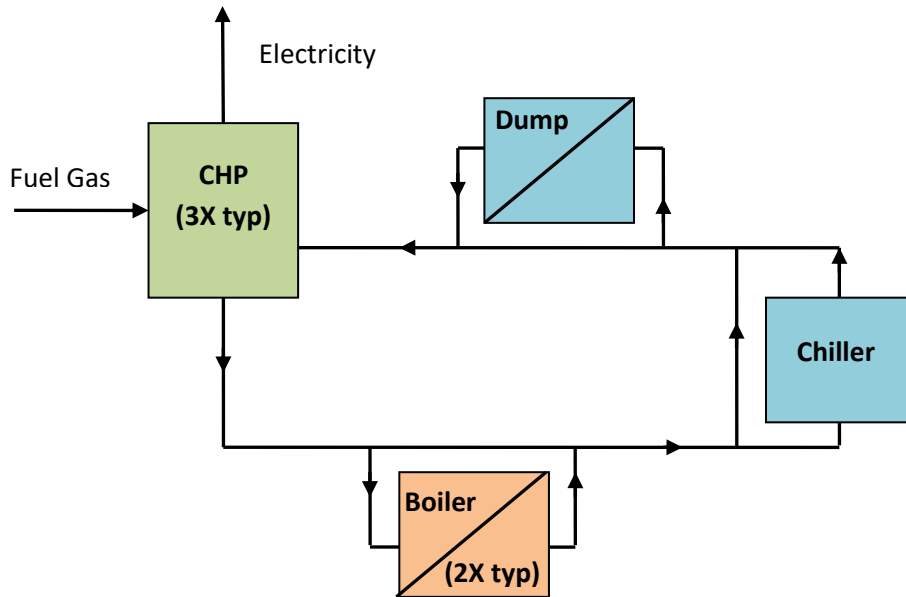
## THE APPLICATION

Three Tecogen 100kW InVerde Ultra model #INV-100 generators were installed to reduce reliance on electric suppliers and reduce costs. The generators provide on-site electrical generation and can provide 300kW of continuous power, 375 kW of peak power and 2,010 MBtu/h of thermal output as hot water. Heat recovered from the production of electricity is used for space conditioning.

## CHP SYSTEM AND EQUIPMENT

The CHP system consists of three natural gas fired reciprocating engines that each include a 480 VAC inverter based system, and a jacket water and exhaust heat recovery system, all housed in sound attenuating enclosures. Excess thermal output from the CHP units will be rejected by a dump radiator. The system delivers two forms of energy, heat and electricity, from a single fuel source (natural gas).

## Combined Heat and Power for a Museum



### ECONOMICS AND ENVIRONMENTAL BENEFITS

CHP efficiency is usually twice that of conventional utility power. The high efficiency CHP system significantly reduces energy costs and harmful emissions. In addition, the system continues to provide energy and heat during a grid power failure. Monitored data are being collected from the site are available in an hourly format on NYSERDA's DG/CHP website from November 2015.

### SUMMARY OF BENEFITS

- Reduced cost for energy needs
- Lower reliance upon the energy grid
- Reduced carbon footprint

### ADDITIONAL RESOURCES

- Developer/Engineer: <http://dsmea.com/>
- Equipment Manufacturer: <http://www.tecogen.com>
- DG/CHP Resources: <http://dg.nyserda.ny.gov/>



Three InVerde CHP Units at Intrepid