Avalon Fort Greene

343 Gold St

Brooklyn, NY 11201

Site Contact

Kevin May

Project Engineer

Aegis Energy Services Inc.

55 Jackson St Holyoke MA, 01040

413-536-1156

kmay@aegisenergyservices.com

- CDH was on site January 11, 2017 to install a datalogger, terminate meter wiring, setup communications, and verify sensor readings. Data collection begins.

Summary

CDH provided the data logger, enclosure, three supplemented temperature sensors, and a current sensor. Aegis provided and installed the gas, power, and BTU meters. Aegis installed the CDH enclosure and performed necessary wire pulls while CDH terminated wiring to the data logger and sensors. CDH pulled wires as needed for additional CDH supplied sensors.

Monitored Data Points

Logger Channel	Data Point	Description	Eng Units	Instrument / Transducer	Output
MB-001	WT1	Gross Generator #1 Power Output	kWh	Veris H-8035-300	Modbus RS-485
MB-002	WT2	Gross Generator #2 Power Output	kWh	Veris H-8035-300	Modbus RS-485
MB-003	WB	Total Facility Power	kWh	Veris E51	Modbus RS-485
MB-004	WP	Parasitic Loads	kWh	Veris H-8035-100	Modbus RS-485
-	WG	Net Power Output	kWh	-	Calculated
IN-1	FG	Cogen Gas Consumption (Generatore 1 & 2)	cf	Romet RM3000	Pulse
MB-005	FHW	Recovered Heat loop Flow	gpm	Badger Series 380	Modbus RS-485
IN-2	THW1	Recovered Heat Loop - Supply Temp.	°F	Veris 10k Type II Thermistor (insertion)	Resistance
IN-3	THW2	Recovered Heat Loop - Temp. After HX1 (DHW Riser)	°F	Veris 10k Type II Thermistor (surface)	Resistance
IN-4	THW3	Recovered Heat Loop - Temp. After HX4 & HX 5 (Low and Mid DHW)	°F	Veris 10k Type II Thermistor (surface)	Resistance
MB-005	THW4	Recovered Heat Loop - Temp. After HX6 (Space Heating)	°F	Badger Series 380	Modbus RS-485
MB-005	THW5	Recovered Heat Loop - Temp. After HX7 (Dump Radiator)	°F	Badger Series 380	Modbus RS-485
IN-5	IVFD	Dump Radiator Current	Amps	Veris H921	4 - 20 mA
-	QDHW	Useful Heat Recovery - DHW Heating	Mbtu/h	-	Calculated
-	QSH	Useful Heat Recovery - Space Heating	Mbtu/h	-	Calculated
-	QR	Rejected Heat Recovery	Mbtu/h	-	Calculated
MB-004	QU	Total Useful Heat Recovery	Mbtu/h	-	Calculated

IT Information

External IP:	100.2.196.91:4081
Internal IP:	10.0.18.141
Gateway:	10.0.18.1
Netmask:	255.255.255.0
DNS #1:	68.237.161.12
DNS #2:	71.243.0.12

Procedure

- Power data was verified by comparing the generator engine controller displayed power to the Veris H8035 power measurement displayed on the Obvius data logger.
- Hot water loop flow was verified by comparing the Badger 380 flow reading on the Obvius to measurements taken using a portable Portaflow ultrasonic flowmeter.
- Temperatures were verified by comparing Obvius readings (Badger 380, supplied insertion, and supplied surface temperature sensors) to the readings on temperature gauges built into the system.
- Gas usage was verified by calculating electrical efficiency with the gas meter measurement displayed on the Obvius with the combined generator outputs.

Verification Data

Generator Power

	Obvius (kW)	Cogen Display (kW)
WT1	44.5	45.7
WT2	43.7	45.9

Recovered Heat Loop Flow

	Obvius (gpm)	Portaflow Meter (gpm)
FHW	70.0	72.4
	69.2	71.7
Avg:	*69.6*	*72.1*

System Temperatures

	Obvius (°F)	Gauge (°F)
THW1	168.6	170.0
	170.7	171.0
THW2	166.0	164.0
THW3	150.0	147.0
THW4	146.3	145.0
	148.7	148.0
THW5	146.1	144.0
	148.7	146.0

Electrical Efficiency

Two Aegen PowerVerter PV75		
Unit	**Obvius**	**Aegis Rating**
Load	59%	100%
CFM	20	31
CFH	1200	1860
kW	88	150
Elec Eff	25.29	27.81

Site Photos

One of Two Aegen PowerVerter 100 kW cogen units located in the boiler room.

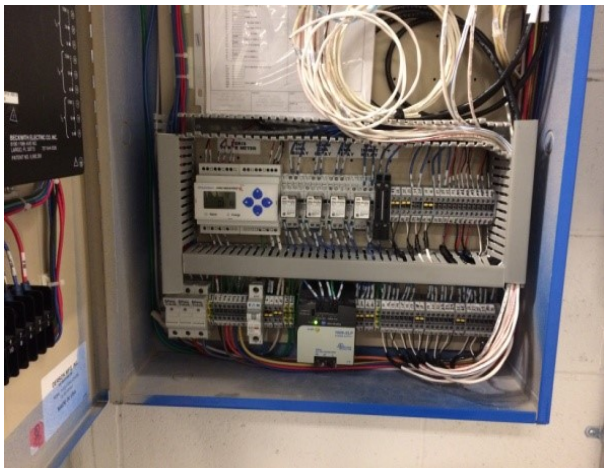
CDH panel containing data logger and CDH network switch, located in the electrical room adjacent to the basement boiler room.

Badger 380 BTU meter on the dump radiator module (THW4, THW5, FHW).

Two Veris 10k Type 2 Surface Thermistor (THW2 & THW3), located in the boiler room on DHW module across HX4 and HX5.

Veris 10k Type II Thermistor (THW1) located on HX1

One of two gross generator power meters (WT1 & WT2) located in the inverters of each unit.



Veris E51 total facility power meter (WB) in the Beckwith panel located next to CDH panel.

Veris H921 current sensor (IVFD), located in Aegis control panel.

Parasitic power meter (WP) located in SBDP-A subpanel in the electrical room.