

## Site Info – 2 Tudor

2 Tudor City Place  
New York, NY 10017

### Site Contact

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- CDH was on site July 23, 2015 to install a datalogger and terminate meter wiring.
- CDH was on site October 13, 2015 to finish meter wiring and configuration and fix communications. Data collection begins.

### Summary

CDH provided the data logger and enclosure. Aegis provided and installed the gas, power, and BTU meters. Aegis installed the CDH enclosure and performed all of the necessary wire pulls while CDH terminated wiring to the data logger and sensors.

### Monitored Data Points

Input	Data Point	Description	Units	Sensor	Signal
MB-001	WT1	Gross North Generator Power	kW/kWh	Veris H8035-0300	Modbus 485
MB-002	WT2	Gross South Generator Power	kW/kWh	Veris H8035-0300	Modbus 485
MB-003	WB1	Total Facility Power - North Tower	kW/kWh	Veris E50C2	Modbus 485
MB-004	WB2	Total Facility Power - South Tower	kW/kWh	Veris E50C2	Modbus 485
MB-006	WP	Parasitic Power	kW/kWh	Veris H8035-0100-2	Modbus 485
IN1	FGT	Total Generator Gas Use	CF	Utility pulse output from billing meter	Pulse
IN2	THW2	Recovered Heat Loop - Supply Temp.	deg F	Mamac 10k Type 2 Thermistor	Resistance
IN3	FG1	Generator #1 Gas Use	CF	Romet RM 2000	Pulse
MB-005	FHW	Flowrate CHP Loop	GPM	Badger 380 BTU meter	Modbus 485
MB-005	THW1	Recovered Heat Loop - Temp. After Useful HXs	deg F		
MB-005	THW3	Recovered Heat Loop - Return Temp.	deg F		
-	QU	Useful Heat Recovery - BTU Meter Calculated	Mbtu	Calculated	-
-	QR	Rejected Heat Recovery	Mbtu	Calculated	-

**IP Info**

<b>IP Address:</b>	23.246.73.4
<b>Netmask:</b>	255.255.255.248
<b>Gateway:</b>	23.246.73.1
<b>Primary DNS:</b>	24.29.99.35
<b>Secondary DNS:</b>	24.29.99.36

**Site Photos**



Aegen Powerverter 75 cogen units (2x) located in basement mechanical room.



CDH panel containing data logger and CDH network switch.



Badger 380 BTU meter (FHW, THW1, THW3).



Veris H8035 power meter (WT1, WT2); located in each inverter.



Veris E50 power meters for total facility power measurement (WB1, WB2), located in Aegis panel next to UPS.



Roots rotary gas meter with pulse output. Meter measures total gas input to both cogen units (FGT).



Gas boosters for both cogen units, and Romet RM2000 gas meter for one cogen unit, only FG1 wired / functioning.



Mamac 10k Type 2 temperature sensor (THW2), installed by Aegis.



# ALL EXISTING UNLESS NOTED

PUMP NO.	SERVICE	TOTAL FLOW	HEAD	PUMP H.P.	PHASE	PUMP MODEL	REMARKS
P-1 & 2	NEW COGEN LOOP	22 GPM	70 FT	3/4 HP	3 PH	BELL & GOSSETT SERIES 1535 353T	
P-3 & 4	PRIMARY LOOP	50 GPM	38 FT	1 HP	1 PH	BELL & GOSSETT SERIES 60	
P-5 & 6	EXTG DOMESTIC HOT WATER	60 GPM	15 FT	1/6 HP	1 PH	BELL & GOSSETT SERIES PL-45B	RUN BOTH IN PARALLEL
P-7 & 8	GLYCOL DUMP LOOP	75 GPM	13 FT	2/5 HP	1 PH	BELL & GOSSETT SERIES PL-55	RUN BOTH IN PARALLEL
P-9	NORTH AHU HOT WATER COIL	18 GPM	16 FT	1/6 HP	1 PH	BELL & GOSSETT SERIES PL-45	
P-10	SOUTH AHU HOT WATER COIL	23 GPM	18 FT	2/5 HP	1 PH	BELL & GOSSETT SERIES PL-55	

VALVE NO.	SERVICE	FLOW TYPE	SIZE	VOLTAGE	VALVE MODEL	ACTUATOR
V-1	REPLACE WITH NEW, DHW HEATING	MIXING	2"	24 V	INVENSYS VS-2313-526-9-63	MODULATING
V-2 & 3	EXTG NORTH/SOUTH AHU HEATING COIL	MIXING	1 1/2"	24 V	INVENSYS VS-2313-526-9-56	MODULATING

HEAT EXCHANGER HX-1 & HX-2	
DESIGN MANUFACTURER	THERMAL TRANSFER
MODEL	B-1204-C4-T-BR-B
TUBE LENGTH	43"
SHELL DIAMETER	6"
SIDE	SHELL TUBE
FLUID TYPE	WATER WATER
FLUID FLOW	25 GPM 30 GPM
TEMP IN	210 140
TEMP OUT	170 174
PRESSURE DROP	.6 PSI .7 PSI
INLET SIZE	2" 1 1/2"

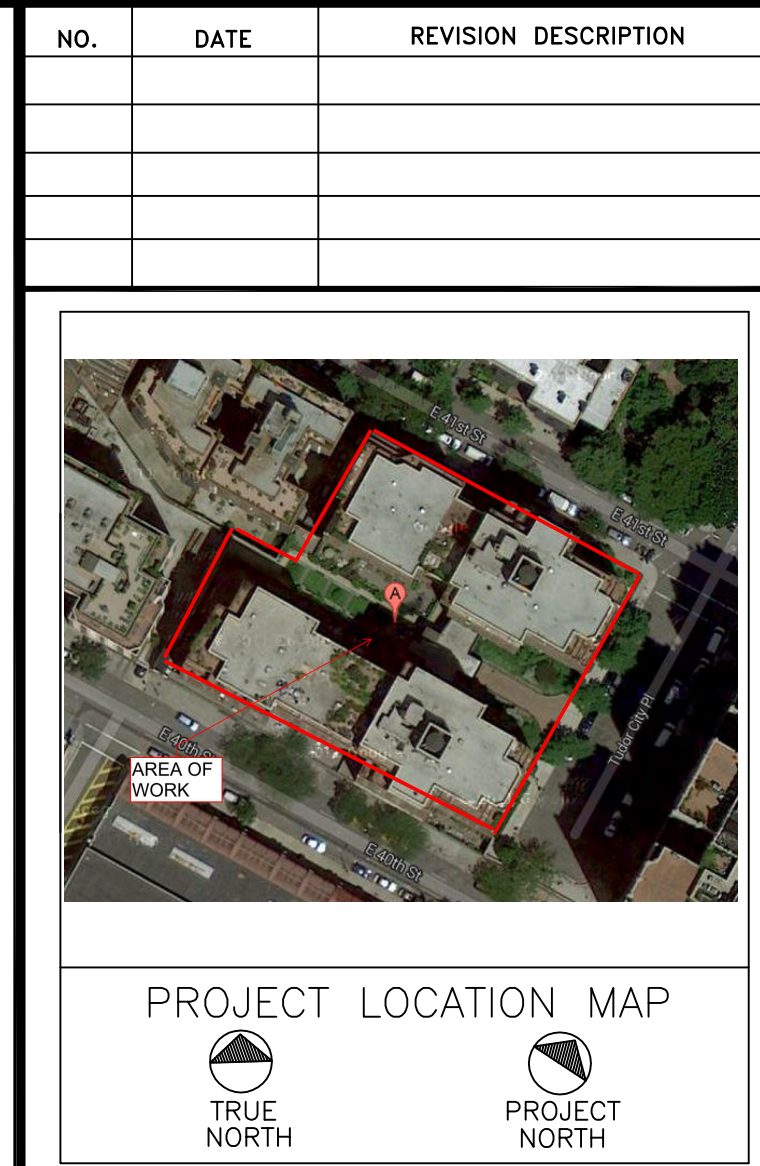
HEAT EXCHANGER HX-3	
DESIGN MANUFACTURER	API
MODEL	SB7M-40
NO. OF PLATES	40
GASKETS	BRAZED
SIDE	HOT SIDE COLD SIDE
FLUID TYPE	WATER 40% PROP GLYCOL
FLUID FLOW	50 GPM 41 GPM
TEMP IN	220.0 140
TEMP OUT	187.0 180
PRESSURE DROP	1.5 PSI 3 PSI
INLET SIZE	2" 2"

HEAT EXCHANGER HX-4	
DESIGN MANUFACTURER	API
MODEL	SB7M-50
NO. OF PLATES	50
GASKETS	BRAZED
SIDE	HOT SIDE COLD SIDE
FLUID TYPE	WATER 40% PROP GLYCOL
FLUID FLOW	50 GPM 75 GPM
TEMP IN	220.0 161.8
TEMP OUT	178.0 192
PRESSURE DROP	1.5 PSI 3 PSI
INLET SIZE	2" 2"

COGENERATION SCHEDULE	
DESIGN MANUFACTURER	AEGENCO
FUEL	NATURAL GAS
FUEL INPUT	930 SCFH
THERMAL OUTPUT	520 MBH
ELECTRICAL OUTPUT	75 KW
POWER GENERATOR	INVERTER
ACOUSTIC LEVEL	70dba @ 20ft
VIBRATION ISOLATION	YES
CONTROLS	MICROPROCESSOR BASED
UNIT WEIGHT	3500 LBS
MODEL	POWERVERTER 75
AVG INLET TEMP	170 DEG F
AVG OUTLET TEMP	220 DEG F

DHW TANK SCHEDULE	
MANUFACTURER	RECO
MODEL	T-350
SIZE	350 GALLONS
HEIGHT	88 INCHES
DIAMETER	36 INCHES
ORIENTATION	VERTICAL
LINING	STONE

TEMPERATURE SENSOR SCHEDULE				
SENSOR NO.	SERVICE	SENSOR MODEL NO.	WELL TYPE	CONNECTION LOCATION
CTS-1	COGEN #1 SUPPLY	MAMAC TE-703-C-5A	AT-225	CCP
CTS-2	COGEN #2 SUPPLY	MAMAC TE-703-C-5A	AT-225	CCP
CTS-3	PRIMARY LOOP DHW HEATING SUPPLY	MAMAC TE-703-C-5A	AT-225	CCP
CTS-4	PRIMARY LOOP AHU LOOP SUPPLY	MAMAC TE-703-C-5A	AT-225	CCP
CTS-5	PRIMARY LOOP DUMP SUPPLY	MAMAC TE-703-C-5A	AT-225	CCP
CTS-6	PRIMARY LOOP RETURN	MAMAC TE-703-C-5A	AT-225	CCP
CTS-11	DHW RETURN TO COGEN DHW HEAT EXCHANGER	MAMAC TE-703-C-5A	AT-225	CCP
CTS-12	DHW SUPPLY FROM COGEN DHW HEAT EXCHANGER	MAMAC TE-703-C-5A	AT-225	CCP
CTS-13	DHW COLD TO STORAGE TANKS (W/ RECIRC)	MAMAC TE-703-C-5A	AT-225	CCP
CTS-14	DHW FROM STORAGE TANKS TO BOILER BUNDLES	MAMAC TE-703-C-5A	AT-225	CCP
CTS-21	AHU LOOP RET TO HX	MAMAC TE-703-C-5A	AT-225	CCP
CTS-22	AHU LOOP SUP TO HX	MAMAC TE-703-C-5A	AT-225	CCP
CTS-23	AHU AIR TEMP DISCHARGE	BARBER COLMAN TS-8201	N/1	DUCT MOUNTED
CTS-24	AHU AIR TEMP DISCHARGE	BARBER COLMAN TS-8201	N/1	DUCT MOUNTED
CTS-31	GLYCOL DUMP RETURN FROM RADIATOR	MAMAC TE-703-C-5A	AT-225	CCP
CTS-32	GLYCOL DUMP SUPPLY TO RADIATOR	MAMAC TE-703-C-5A	AT-225	CCP



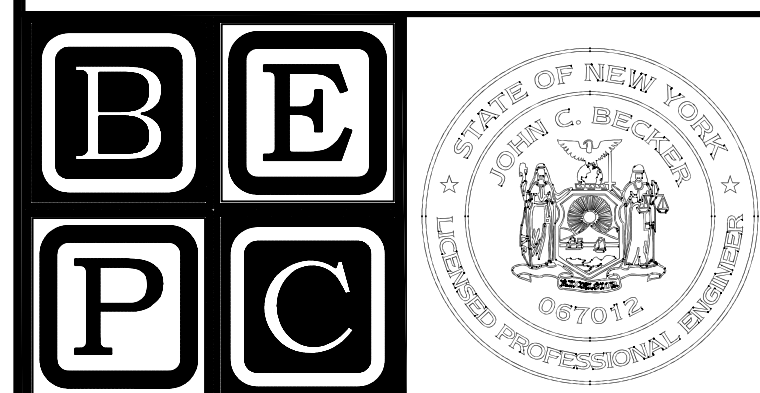
CLIENT:  
**AEGIS ENERGY SERVICES, INC**  
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 FAX: 413-536-1104  
 ATTN: SEAN PRINGLE

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PROJECT  
**2 TUDOR CITY COGENERATION PROJECT**  
 2 TUDOR CITY PLACE  
 NEW YORK, NY 10017

DRAWING TITLE:  
**MECHANICAL LAYOUT SUB CELLAR**

DESIGN BY:	SP	DATE:	11-14-13
DRN BY:	SP	DATE:	11-14-13
CKD BY:	JP	DATE:	11-14-13
FINAL CKD BY:	JDJ	DATE:	11-14-13
SCALE:	AS NOTED		
DWG No.		PAGE	3 OF 9

**M-001.00**  
 PROJECT NO.  
**60-040**

B-SCAN:

