Energy Review

92 Equities

Prepared for:

YMY Management

December 15, 2011

Prepared by:

EN-POWER GROUP
50 Main Street, Suite 1000
White Plains, NY 10606

A. SUMMARY

92 Equities consist of two 67 unit 68,841 square foot multifamily buildings located at 201 W 92nd street. The two buildings are attached together with an identical in footprint and each contains their own central boiler system to provide heating and domestic hot water. Each building is MASTER METERED for electricity and natural gas supply.

YMY Management requested that the EN-POWER GROUP review the energy usage at the facility to determine the energy cost savings associated with the installation of energy measures that are being done as part of the overall physical needs of the two facilities.

The EN-POWER GROUP www.en-powergroup.com is an integrated Energy Services Company (ESCO) founded in May 2003 to assist various energy users with effective energy management. We specialize in the overall evaluation, engineering, implementation and consolidation of all available utility, city, state and federal incentives of major energy projects. The EN-POWER GROUP is a NYSERDA Multifamily Performance Partner authorized by NYSERDA to work with multifamily buildings to obtain financial incentives by improving the energy efficiency, health, safety, and security of residential buildings with five (5) or more residential units.

Several improvements were identified in the site visit that included the following:

Measure 1: Submetering
Measure 2: Air Sealing –Thru-Wall AC Sleeves
Measure 3: Energy Management System
Measure 4: Lighting Upgrade – Common Area
Measure 5: Install Energy Star Clothes Washers

B. BUILDING OVERVIEW:

92 Equities consist of two 67 unit 68,841 square foot multifamily buildings located at 201 W 92nd street. The two buildings are attached together with an identical in footprint and each contains their own central boiler system to provide heating and domestic hot water.

Building Occupancy
The building has residents across a variety of demographics.

Energy Suppliers, Metering, and Electrical Systems
The building consumes electricity and natural gas. Electricity is MASTER METERED for both the common area and apartments. Electricity for common areas includes lighting and mechanical equipment. The building uses natural gas for the boiler, laundry and tenant cooking.

Electricity is delivered by ConEdison. Natural gas is delivered by ConEdison.

Façade
The façade of the building consists of steel frame, interior block and exterior brick masonry.

Roof
The building's roof is constructed of steel frame, concrete, and built-up roofing.

Slab Construction
The slab construction for the building is of concrete. This construction is found in the perimeter of the basement that is adjacent to the ground.

Windows and Air Conditioners
The windows are doubled-paned windows with aluminum frame and a thermal break.

Based on our observation, there may be potential air infiltration through the windows and thru-wall air conditioner sleeves.

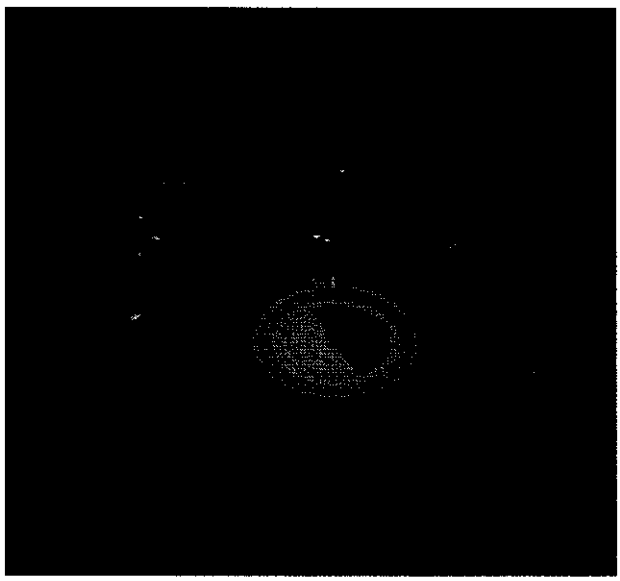
Heating System:
Each building utilizes a central steam boiler located in the basement to provide heating to the apartment radiators and for domestic hot water service. Steam output of the boilers is rated at approximately 8 psig and supplied to the apartment radiator systems. The steam is delivered via multiple risers supporting steam convectors located in each apartment that are typically floor mounted below operable windows.

The boilers are Federal scotch marine boiler rated at 100 HP. The boilers burn natural gas and utilize an IC burner. A summary of the boilers is as follows:

	Typical Boiler
Equipment Type	Scotch Marine Boiler
Manufacturer & Model	Federal
Number	2 units / 1 per building
Input	4140 MBH
Output	3348 MBH
Efficiency	78
Burner Type	Natural Gas
Burner Controls	Outdoor Temperature

Heating System Controls

The boilers utilize a Heat Timer controller that utilizes a time clock along with outdoor reset. The current controllers are older and lack and rely on manual adjustments.



Domestic Hot Water System

Domestic hot water is provided via a tank-less hot water coil that is installed in the boiler. The DHW system does not have a separate storage tank. The domestic hot water temperature is regulated with the use of a mechanical mixing valve (Holby), which regulates the temperature of the DHW.

Lighting

Lighting in the building consists of a mixture of T-12 fluorescent fixtures (especially in the common areas) and compact fluorescent fixtures.

Appliances
Each building contains 67 apartments. Each apartment has a full kitchen – gas stove with range, refrigerator, dishwasher and microwave.

As part of our visit, we did not review any units.

Laundry Equipment
There is a central laundry facility located in each building. The washing machines are all top loading machines and use water from the central DHW system. The dryers are equipped for natural gas usage.

Ventilation & Infiltration
The building has no mechanical ventilation stacks.

Elevators
Each building contains an elevator.

C. ENERGY USAGE:

Electricity

Electricity is supplied through ConEdison and purchases its electricity supply from a third party ESCO. A twelve month summary of usage and costs for each building is as follows:

Billing History

Account Number: 472203154700024
Customer Name: 92 EQUITIES LLC
Service Address: 201 W 92 ST ENT , NEW YORK NY , 10025

0.09

From Date	To Date	Elec Use (Kwh)	Elec Demand (Kw)	ConEd Electric Bill Amt	ESCP Elec Bill Amt	Gas Use (Therm)	Gas Bill Amt	Total Bill Amt
11/8/2011	12/5/2011	26,800	64.8	$2,622.48	$2,412.00	68	$82.90	$5,117.38
10/3/2011	11/8/2011	36,800	79.2	$3,322.21	$3,312.00	53	$67.93	$6,702.14
9/1/2011	10/3/2011	48,640	113.6	$4,830.13	$4,377.60	60	$72.54	$9,280.27
8/3/2011	9/1/2011	53,680	120	$5,165.55	$4,831.20	51	$62.44	$10,059.19
7/5/2011	8/3/2011	69,040	151.2	$6,435.79	$6,213.60	52	$63.33	$12,712.72
6/3/2011	7/5/2011	56,880	143.2	$6,506.34	$5,119.20	60	$72.68	$11,698.22
5/4/2011	6/3/2011	38,400	130.4	$4,792.63	$3,456.00	65	$74.88	$8,323.51
4/5/2011	5/4/2011	27,680	73.6	$2,907.66	$2,491.20	56	$67.28	$5,466.14
3/7/2011	4/5/2011	26,400	56.8	$2,346.41	$2,376.00	55	$66.27	$4,788.68
2/3/2011	3/7/2011	30,080	61.6	$2,597.39	$2,707.20	60	$72.00	$5,376.59
1/4/2011	2/3/2011	28,800	64	$2,530.78	$2,592.00	58	$68.95	$5,191.73
12/3/2010	1/4/2011	31,600	67.2	$2,871.63	$2,844.00	60	$72.86	$5,788.49
		474,800		$46,929.00	$42,732.00	698	$844.06	$90,505.06

Billing History

Account Number: 473203169410022
Customer Name: 92 EQUITIES LLC
Service Address: 668 AMSTERDAM AVE ENTM , NEW YORK NY , 10025

0.09

From Date	To Date	Elec Use (Kwh)	Elec Demand (Kw)	ConEd Electric Bill Amt	ESCP Elec Bill Amt	Gas Use (Therm)	Gas Bill Amt	Total Bill Amt
11/8/2011	12/5/2011	25,920	63.2	$2,547.31	$2,332.80	56	$73.47	$4,953.58
10/3/2011	11/8/2011	34,240	76	$3,153.13	$3,081.60	47	$63.11	$6,297.84
9/1/2011	10/3/2011	44,720	107.2	$4,523.61	$4,024.80	50	$64.54	$8,612.95
8/3/2011	9/1/2011	48,160	116.8	$4,885.49	$4,334.40	40	$53.72	$9,273.61
7/5/2011	8/3/2011	62,880	142.4	$5,991.15	$5,659.20	42	$55.35	$11,705.70
6/3/2011	7/5/2011	48,240	112	$5,236.78	$4,341.60	48	$63.00	$9,641.38
5/4/2011	6/3/2011	33,280	112.8	$4,151.36	$2,995.20	55	$66.84	$7,213.40
4/5/2011	5/4/2011	26,720	68	$2,743.22	$2,404.80	50	$62.45	$5,210.47
3/7/2011	4/5/2011	26,880	59.2	$2,415.52	$2,419.20	54	$65.48	$4,900.20
2/3/2011	3/7/2011	31,600	61.6	$2,661.71	$2,844.00	57	$69.64	$5,575.35
1/4/2011	2/3/2011	31,200	67.2	$2,697.83	$2,808.00	53	$64.97	$5,570.80
12/3/2010	1/4/2011	33,920	66.4	$2,959.54	$3,052.80	58	$71.25	$6,083.59
		447,760		$43,966.65	$40,298.40	610	$773.82	$85,038.87

Natural Gas

Natural gas is supplied through ConEdison and purchases its natural gas supply from a third party ESCO. A twelve month summary of usage and costs for each building is as follows:

Account Number: 472203155200024
Customer Name: 92 EQUITIES LLC
Service Address: 201 W 92 ST ENTM , NEW YORK NY , 10025

0.8

From Date	To Date	Gas Use (Therm)	ConEd Gas Bill Amt	ESCO Gas Bill Amt	Total Bill Amt	Unit Cost ($/Therm)
11/1/2011	12/5/2011	3,671	$3,209.49	$2,936.80	$6,146.29	$1.67
10/3/2011	11/1/2011	3,853	$2,819.78	$3,082.40	$5,902.18	$1.53
9/1/2011	10/3/2011	1,347	$973.27	$1,077.60	$2,050.87	$1.52
8/3/2011	9/1/2011	1,314	$946.55	$1,051.20	$1,997.75	$1.52
7/5/2011	8/3/2011	1,334	$962.30	$1,067.20	$2,029.50	$1.52
6/3/2011	7/5/2011	1,600	$1,167.46	$1,280.00	$2,447.46	$1.53
5/4/2011	6/3/2011	1,769	$1,389.03	$1,415.20	$2,804.23	$1.59
4/5/2011	5/4/2011	3,135	$2,385.30	$2,508.00	$4,893.30	$1.56
3/7/2011	4/5/2011	5,611	$3,518.46	$4,488.80	$8,007.26	$1.43
2/3/2011	3/7/2011	7,572	$4,873.18	$6,057.60	$10,930.78	$1.44
1/4/2011	2/3/2011	9,214	$5,025.88	$7,371.20	$12,397.08	$1.35
12/3/2010	1/4/2011	9,247	$5,124.94	$7,397.60	$12,522.54	$1.35
		49,667	$32,395.64	$39,733.60	$72,129.24	$1.45

Account Number: 473203169400023
Customer Name: 92 EQUITIES LLC
Service Address: 668 AMSTERDAM AVE HTGM , NEW YORK NY , 10025

0.8

From Date	To Date	Gas Use (Therm)	ConEd Gas Bill Amt	ESCO Gas Bill Amt	Total Bill Amt	Unit Cost ($/Therm)
11/1/2011	12/5/2011	3,693	$3,225.65	$2,954.40	$6,180.05	$1.67
10/3/2011	11/1/2011	3,641	$2,688.82	$2,912.80	$5,601.62	$1.54
9/1/2011	10/3/2011	1,529	$1,100.05	$1,223.20	$2,323.25	$1.52
8/3/2011	9/1/2011	1,081	$784.29	$864.80	$1,649.09	$1.53
7/5/2011	8/3/2011	1,334	$962.30	$1,067.20	$2,029.50	$1.52
6/3/2011	7/5/2011	1,634	$1,191.55	$1,307.20	$2,498.75	$1.53
5/4/2011	6/3/2011	1,787	$1,402.87	$1,429.60	$2,832.47	$1.59
4/5/2011	5/4/2011	3,199	$2,425.47	$2,559.20	$4,984.67	$1.56
3/7/2011	4/5/2011	6,119	$3,799.15	$4,895.20	$8,694.35	$1.42
2/3/2011	3/7/2011	7,626	$4,904.69	$6,100.80	$11,005.49	$1.44
1/4/2011	2/3/2011	8,687	$4,763.13	$6,949.60	$11,712.73	$1.35
12/3/2010	1/4/2011	9,233	$5,117.90	$7,386.40	$12,504.30	$1.35
		49,563	$32,365.87	$39,650.40	$72,016.27	$1.45

D. IDENTIFIED ENERGY SAVING MEASURES:

Recommended upgrade measures include the following items:

Measure 1: Installation of Advances Submetering
The building currently is Master Metered for electric supply. As a result, individual tenants do not have any understanding on their individual energy consumption. The building could benefit from the installation of advances submetering to allow individual tenants to see their energy consumption and empower them to make changes in their energy consumption. This will also allow the building to measure common area consumption and measure potential changes in electric consumption.

Measure 2: Air Sealing –Thru-Wall AC Sleeves
Sealing and caulking of Air conditioners sleeves

Measure 3: Energy Management System
The current control system is using an outside temperature reset. However the controls require a significant of manual adjustments. This system should be upgraded to an automated system.

Measure 4: Lighting Upgrade – Common Area
Existing lighting fixtures should be replaced with low watt alternatives. Across the common areas, replacement of any remains incandescent bulbs with CFLs and replacement fluorescent tube T12 fixtures with T8s.

Measure 5: Install Energy Star Clothes Washers
Top loading units in the common area laundry room should be replaced at conclusion of lease term with Energy Star rated units.

Other Potential Measures worth of consideration:

Install Separate Domestic Hot Water Heaters
The heating boiler is running year round to supply domestic hot water. Installing separate domestic hot water heaters will allow the boilers to operate only during the heating season. Fuel consumption will also be reduced due to higher operating efficiency.

Install Low-flow Showerheads and Aerators
Installing faucet aerators rated at 1.5 gpm or less is inexpensive and easy to install, and they can eliminate as much as 50% of both water usage and the energy cost to heat the hot water.

Insulate Roofs to R-30
Install additional insulation in the roof cavity if possible.

Recommend Tenants replace Incandescent Apartment Lighting to Compact Fluorescent Lights (CFLs).
Incandescent lights use much more energy than many available technologies and create additional heat gain for interior spaces.

E. INCENTIVE PROGRAMS:

ConEdison Program:

All Buildings: Rebates for common area electric reduction measures that includes lighting, motor upgrades and common areas cooling

5-75 Residential Units: ConEdison has incentives for buildings between 5 to 75 resudential units as follows:

- Rebates for new ENERGY STAR® refrigerators and air conditioners
- Rebates for common area efficiency measures such as boilers, furnaces, and hot water heaters
- Free recycling of old, inefficient refrigerators and air conditioners

NYSERDA:

The New York Energy Research Development Authority (NYSERDA) has a program called the Multifamily Performance Program (MPP) to addresses the needs of the multifamily sector by working with building owners and NYSERDA Multifamily Performance Partners to improve the energy efficiency, health, safety, and security of residential buildings with five (5) or more residential units. The program serves both market-rate and low to moderate income properties through a common process and a varying schedule of incentives.

In order to be entitled to receive incentives under the Multifamily Performance Program for eligible energy improvements, the program requires that all Participants to work with a Multifamily Performance Partners to:

1. Benchmark the property against a similar set of multifamily buildings;
2. Develop an Energy Reduction Plan to reduce source energy usage by a minimum of 15% with special focus on electricity or firm natural gas reduction measures; and
3. Select and implement various cost effective measures identified in the comprehensive Energy Reduction Plan to reduce the property's overall energy consumption

The comprehensive Energy Reduction Plan starts with the development and implementation of a detailed energy work scope that includes performing a detailed energy audit by a Building Performance Institute (BPI) certified Multifamily Building Analyst Professional, construction of a site specific energy simulation model, and, if applicable, feasibility screening for the implementation of advanced sub-metering and/or installation of a combined heat and power (CHP) systems. At a minimum, NYSERDA requires that the Energy Reduction Plan consider a review for potential implementation of the following energy measures:

Lighting & Appliances
Bi-level Lighting in Common Areas
ENERGY STAR Clothes Washers

Envelope
Air Sealing (including weather stripping)
Insulate all Hot Surfaces (condensate tank, steam & HW piping)

ENERGY STAR Dishwashers*	High Efficiency Windows/Storm Windows (when existing windows are single-pane)
ENERGY STAR Refrigerators*	Insulate Walls
LED Exit Signs	Insulate Roof Deck or Attic
ENERGY STAR CFL Hardwired Fixtures in Common Areas	***Other***
ENERGY STAR CFL Hardwired Fixtures in Apartments*	Electric Sub metering
Replacement of Incandescent Bulbs with CFLs in Apartments*	Elevator Motors and Controls
Super T8 Bulbs and Ballasts	High Efficiency Motors
Occupancy Sensors for Select Common Areas *(i.e., laundry room)*	Thermostatic/Smoke-driven Louvers & Fans in Elevator Machine Rooms and Stairwells
HVAC Measures	**Low-flow Showerheads and Sink Aerators***
Combined Heat and Power (CHP) System (buildings with 80+ units)	***Health and Safety***
Condensate Reclamation for Steam Systems	Asbestos Mitigation as part of Boiler and Distribution System Repair
Conversion from Electric to Gas Heat	Carbon Monoxide Detectors (unless all-electric)
Decentralization of Central Boiler Plants	Emergency Battery-powered Lighting in Common Stairways and Hallways
Energy Management System (including boiler controls associated with exterior/interior temperatures)	Installation and/or Repair of Mechanical Ventilation
High Efficiency Boilers (Energy Star where available)	Lead Paint Mitigation during Window Replacement
High Efficiency Furnace (Energy Star where available)	Seasonal Dehumidification
High Efficiency Cooling Systems (Energy Star where available)	Repair of Roof and Water Flashings
Outdoor Air Reset for Hydronic Systems	Replacement and/or Repair of Combustion Vents
Replace #6 Oil with Dual Fuel System (#2 oil and natural gas)	Smoke Detectors
Separate DHW Direct-fired Boiler (condensing if gas)	Ventilation Duct Repair
Insulate Duct Work	***Management & Resident Education***
Thermostatic Radiator Valves	Building Operator Training and BPI Certification
Timers on Roof Fans (per code requirements)	Owner's Manual
Heat Recovery from Exhaust Air	Resident Education Program & Materials

NYSERDA Recommended Energy Efficiency Measures

The comprehensive Energy Reduction Plan requires that all energy efficiency measures be segmented by energy savings type and evaluated based upon their cost effectiveness. ***Facilities that are considered market-rate housing have significant flexibility on what measures they choose to implement to meet the energy reduction target***[1]. Finally, the comprehensive Energy Reduction Plan may consider any energy measures that were implemented in the past 12 months towards meeting the energy reduction target.

Following the development of the Energy Reduction Plan and selection of measures, the Multifamily Performance Partner reviews the implementation of the various measures to verify

[1] Per NYSERDA Program Rule 2d, measures highlighted and/or noted with an * in the above table, must be included in Affordable Housing projects if they are found to be cost effective

they meet the intent of the comprehensive Energy Reduction Plan. As a separate effort, the EN-POWER GROUP can develop all specification, provide engineering, project management and implementation services to ensure that all projects are completed on time and on budget to realize savings.

For those properties able to achieve a 15% reduction in energy consumption, NYSERDA will pay up to the following incentives for measures that reduce electricity or firm natural gas:

	INCENTIVE SCHEDULE	
Milestone Payment #1 (Following submission of Energy Reduction Plan)	Market Rate: $5,000/project plus $10/unit over 100 units	Affordable Housing: $10,000/project plus $20/unit over 100 units
Milestone Payment #2 (Completion of measures that achieve 50% of the proposed energy reduction)	$300/unit	
Milestone Payment #3 (Upon substantial completion of all measures	$270/unit	
Milestone Payment #4 (Upon submission of usage data following the 1st year)	$30/unit	

NYSERDA Incentives

In addition to the base NYSERDA incentives listed above, additional incentives are available for the following measures:

- Implementation of Advanced Sub-metering: $250 per unit