

Huge Energy Savings in 55 Wall Street Building



Background

55 Wall Street, constructed in 1836-1841 is a 9 story 188,278 sq.ft. restaurant, commercial, retail and residential building located in downtown, New York. The building is owned by Cipriani Club Residence and operated and managed by FS Residential runs 24/7. This residential portion was converted in 2005. Before those floors were used as hotel. In 1998 it was completely rebuilt as The Regent Wall Street Hotel. The residential portion includes 107 units that are mostly occupied. The exterior of this building was designated a New York City Landmark in 1965. The building was named a National Historic Landmark in 1978. 55 Wall Street took advantage of New York State Energy Research and Development Authority's (NYSERDA's) FlexTech Program, and with assistance from Geo-Tech and **NY Building Systems Consultant Inc (NYBSC)**, developed new strategies to reduce energy and operating costs and improve energy efficiency.

Recommendations

An energy audit ASHRAE level II and Retro-Commissioning (RCx) study was conducted, co-funded by NYSERDA, focusing on potential opportunities for energy savings and operational improvements at 55 Wall Street. The Study recommended that upgrade the lighting to LED, replace the existing both old life expired absorption chillers to high efficiency absorption hot water and gas fired chillers, high expensive ConEd steam to gas fired condensing and steam boilers, Variable Frequency Drives (VFD) on thirteen (13) AC and pumps motors, upgrade the outdated existing Building Management System (BMS), two passengers Elevators modernizations, and install Cogeneration. Also sixteen RCx measures including pipe insulation, control valve fix, replace steam traps, fix or replace the malfunction sensors and fix water side economizer control were recommended to improve existing equipment performance and reduce energy cost.

Results and Incentives

55 Wall Street will receive \$19,962.50 in funding through the NYSERDA FlexTech Program for this energy study. NYBSC's energy efficiency audit and commissioning evaluation identified a total of Twenty Three (23) energy conservation measures (ECMs) and RCx findings with an **annualized cost savings \$967,153** and a capital cost of \$7,369,894, resulting in a return on investment of 7.62 years. Possible incentives are more than \$1.6 million for capital construction.

	\$	\$	Years
Measures	Total Annual Savings	Implementation Costs	Payback Period
Energy Audit Measures			
1. Lighting Upgrade	40,793	64,723	1.59
2. Chillers Replacement	152,369	1,738,800	11.41
3. Steam to Boilers Install	348,897	2,055,000	5.89
4. VFD Install on pumps	37,039	83,777	2.26
5. BMS Upgrades	33,358	288,750	8.66
6. Elevators Modernizations	14,622	130,000	8.89
7. Cogeneration Install	253,158	2,950,000	11.65
Retro-commissioning Measures			
Sixteen O&M Savings	86,921	58,844	0.68
Total	967,157	7,369,894	7.62

The New York City Energy Efficiency Corporation (NYCEEC) is a non-profit energy finance company who is interested the landing the entire capital cost without the building owners paid no upfront costs and will be repaying through energy savings. This report and funding opportunity that the board has initiated is timely and strategic due to the buildings cooling system i.e. the chiller recently breaking down and no longer being able to supply adequate air conditioning to the residences and event space.