

COST ANALYSIS

Project Cost

\$500,000

LIPA Rebate

\$43,264

National Grid Rebate

\$100,062

Annual Electric Savings

1,053,000 kWh

Annual Gas Savings

53,190 therms



H. Lee Dennison Building
www.wikipedia.org

H. Lee Dennison Building

CASE SUMMARY

Built in 1969, H. Lee Dennison building is a 12 story, 234,548 square foot facility housing the County Executive, Audit and Control, Environment and Energy, Planning, County Attorney, and EMS. These departments have 540 employees to oversee activities of other County departments and provide services and information to Suffolk County residents.

The space cooling requirements are met by 3 centrifugal chillers rated at 250, 450, and 550 tons. There is a cooling tower for heat rejection. Heating demand is met by two 3 million Btu/h condensing boilers. Domestic hot water demand is met by electric water heaters on each floor. Pumps and fans in the basement supply heating and cooling to the rest of the building and air handlers give the system an extra boost to maintain air supply at the upper levels. The Building management system is Johnson MetaSys connected to the existing pneumatic controls.

ENERGY RETROFIT

The energy efficiency measures at H. Lee Dennison Building include the HVAC system and lighting. A Cleaver Brooks boiler in use at the site produced steam for the building. Because of age and cycling of load on and off, the boiler efficiency is estimated at 70%. The system was replaced with AERCO condensing boilers which achieve efficiencies of about 92% especially at low loads, achieving higher efficiencies at part-load. The boiler also operates at lower temperatures.

The lighting project included retrofit from T12 to T8 fluorescent lighting and installing occupancy sensors. To decrease lighting usage, 284 occupancy sensors were installed in the 12 floors of H. Lee Dennison building.

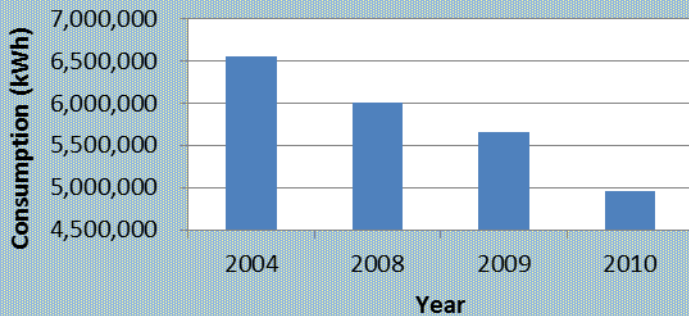
The County installed variable frequency drives on all fan motors on the air-handlers. By shutting off the fans for 10 hours a day, the County aimed to greatly reduce CO₂ emissions each year. With the help of an upgraded existing Building Management System with state of the art Johnson Controls MetaSys BMS, energy usage profiles were reduced through proper operation schedules.

SUFFOLK COUNTY DEPARTMENT OF PUBLIC WORKS

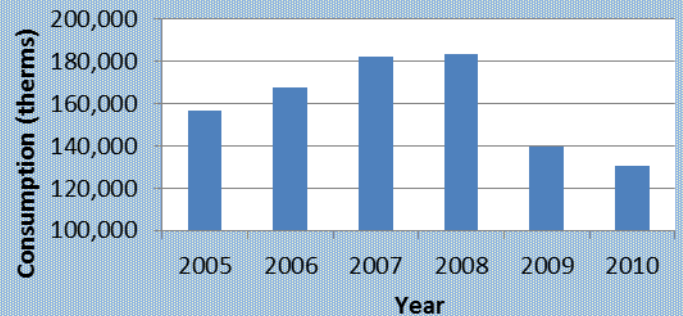
335 Yaphank Ave.

Yaphank NY, 11980

Annual Electric Consumption



Annual Gas Consumption

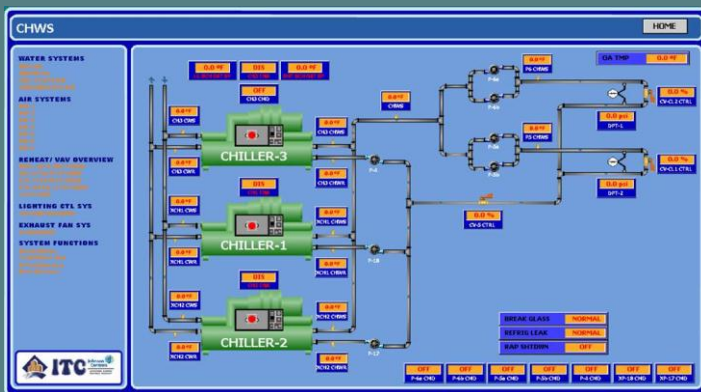


Year	Electric Consumption (kWh)	Cost
2004	6,555,600	\$ 819,367
2008	6,010,200	\$ 977,245
2009	5,659,200	\$ 962,360
2010	4,957,200	\$ 826,700

Annual Electric Consumption Record for H. Lee Dennison Building

Year	Consumption (therms)	Cost
2005	156,457	\$ 161,272.95
2006	167,892	\$ 201,727.01
2007	182,397	\$ 205,623.70
2008	183,433	\$ 258,995.87
2009	139,633	\$ 158,845.41
2010	130,243	\$ 142,676.89

Annual Natural Gas Consumption Record for H. Lee Dennison Building



Building Management System Operating 3 Chillers

RESULTS

The energy savings reduced 856 tons of CO₂ emissions. Emission reductions are calculated against a 2008 baseline. The electric consumption for 2010 was reduced by 1,053,000 kWh reflecting 546 tons of CO₂ emissions reduced. Gas consumption for 2010 was reduced by approximately 53,190 therms reflecting 310 tons of emissions reduced.

Emissions calculations were done using www.abraxasenergy.com/emissions

SUFFOLK COUNTY DEPARTMENT OF PUBLIC WORKS

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