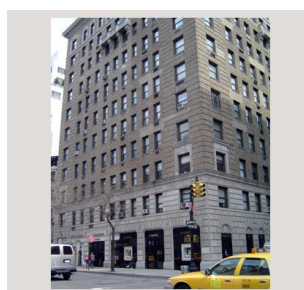
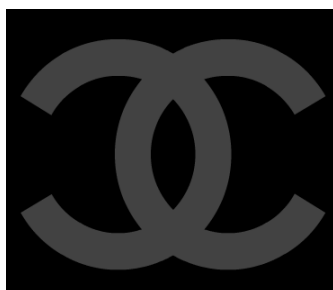


Chanel HVAC Upgrade, New York City



Recommendations:

Complete HVAC replacement with split air cooled system for \$600,000 cost, has the following advantages:

- Reduced operational and maintenance costs.
- Basement and First floor have better air flow, improved air quality, and better ventilation.
- Overhauled duct infrastructure provides reduced maintenance and easier access.
- New system will yield 25% - 30% savings in current A/C energy spend.
- HVAC upgrades often go hand in hand with lighting efficiency upgrades.

Results:

- Space includes: 5,000 sq ft retail, 1,500 sq ft basement and back-of-the-house.
- \$650,000 investment in new HVAC system is part of a larger renovation.
- Operating hours are estimated at 5,400 annually with 2,500 hours of full load electrical and A/C.
- Current A/C tonnage: 37 with 75 Kilowatt Demand. Proposed reduction to 30 tons with 50 Kw.
- Estimate approximate reduction of 25% - 30% consumption and electrical costs for HVAC.
- Assume that 57% generated by HVAC and 33% of electricity cost is driven by lighting and another 10% of electricity utilization is generated by other sources (i.e., printers, PC's, phones, cash machines, monitors, etc.).
- Estimated a blended electric utility rate of \$0.21 per kilowatt hour.
- Current watt density (watts per sq ft) is 12 requiring 37 tons of cooling. The proposed HVAC system is designed for 5 watts per sq ft. This assumes that lighting improvements for energy reduction will go hand in hand with the HVAC upgrades. Watt density will still exceed 1.43 requirements and is probably not eligible for EAct Tax Credit for HVAC improvements, unless energy consumption is reduced by a minimum of 16.7% with a 13 SEER/EER energy rating.
- Lighting energy efficiency upgrades are eligible for EAct Tax Credits independent of other system improvements.
- Current estimated annual HVAC spend = \$38,850 to be reduced to \$25,976 (\$12,874.28 estimated first year energy savings). Assume 4% average annual increase in utility rates.
- Estimated HVAC rebate = \$8,800.
- First year savings = \$12,874 + \$8,800 + EAct + Maintenance Savings = \$21,674.