

EXISTING BUILDING // OFFICE

8757 Georgia Avenue

SYSTEMS UPGRADES

SITE DETAILS

OWNER	LOCATION	BUILDING TYPE	SIZE	BUILT	RENOVATED
Washington Property Company (WPC)	Silver Spring, MD	Class A Office	259,981 SF, 14 Stories	1970	April 2001

BY THE NUMBERS

Integration of Controls of 22 AHUs,
1 Cooling Tower and Associated Pumps

\$241,000+ in Utility Company
Provided Incentives
(~44% of the project total cost)

Financial Overview

Project Cost:	\$550,000
Project Incentives:	\$241,000
Reduction in Federal Taxes:	\$204,000
Net Cost:	\$105,000

Expected payback period
for this project is .95 years.

Overview

In 2019, Washington Property Company (WPC) approached Complete Building Services (CBS) to assist with a building that was lacking in properly functioning HVAC equipment and digital control capabilities. At its worst, Silver Spring Plaza was given an EnergyStar rating of 24 out of 100, rendering extremely inefficient facility operation. CBS reached out to partner Spectrum Energy to develop a cost-effective Master Plan designed to bring better performance, lower operating costs, and tenant comfort. The Master Plan incorporated an ASHRAE Level 3 Audit with incentive funding services, creating an immediate project with future phased projects to follow. Phase 1 included a new cooling tower, building automation controls and variable frequency drives with a total cost of \$550,000. Spectrum's capital funding service captured \$240,000 of incentives from PEPCO, plus a \$204,000 reduction in Federal Taxes. Accompanied with \$111,000 of annual energy savings, the project payback was an astounding 0.95 yrs.





Initial Building Assessment

The original project was scoped for a BAS Replacement only at the cost of \$125,000 and incentives of \$62,500, however it left \$92,500 of incentives on the table. The incentive program has a cap at 50% of the program cost, regardless of the energy savings, so the project was capped at \$62,500. To utilize the entire incentives available, we conducted an energy audit. CBS worked with teaming partner, Spectrum Energy, to assess the building's HVAC issue by performing an ASHRAE Level 3 Energy Audit. The audit provided multiple energy efficiency measures designed to provide the highest efficiency, comfort, and lowest overall cost. WPC decided to move forward with a Phase 1 project, which incorporated replacing the cooling tower, building automation system (BAS) and variable speed drives on system pumps. This phase addressed building wide issues with comfort, costs, and central system control, enabling improved results for the WPC and building tenants.

Phase I

The project's initial scope was a BAS renovation—upgrading the longstanding and outdated controllers and faulty sensors, then installing new valves, sensors, and other key devices to improve system performance and control. The new devices and hardware enabled our team to reprogram the BAS according to a new sequence of operations to enhance building performance and comfort. This Phase I improvement ultimately made it easier to monitor the equipment on the BAS and drastically improved the overall efficiency of the building.

Phase II

In addition to the BAS, the cooling tower was replaced, and new variable frequency drives were placed on all pumps. Aside from being more efficient, the new cooling tower enables single module control, fan speed reduction and bypass, which enabled tuning the tower specifically to the building load requirements. The tower only used enough energy to cool what the building needed, drastically reducing waste energy.

The results of our teamwork paid off for Washington Properties Company. In lieu of wasting \$92,500 of incentives, we replaced additional aged and inefficient equipment, added new equipment, and obtained a total incentive of \$241,000. The final project cost of \$550,000 minus the incentives and tax deductions improved the net cost to \$105,500. The annual energy cost savings of the project was \$111,000/yr., which equates to a simple payback of 0.95 yrs.

ENERGY PERFORMANCE



839,215 kWh Saved

Equivalent to:



28.9
Garbage trucks
full of waste



129.35
Cars off
the road



9,916.7
Trees
Planted



595
Metric tons
of CO₂ Saved

*Note: All comparison figures/year

