

Executive Summary - Spelman Science Center

Introduction

Atlanta BBC is pleased to present this Preliminary Feasibility Audit (PFA) to Spelman College.

Results of the onsite preliminary survey and energy analysis are provided to the Building at no cost under the partnership with the ABBC. A detail of each energy conservation measure can be found within our proposal.

Project Summary

Energy Conservation Measures	Estimate Project Costs	Energy Savings	Simple Payback (years)
Meter cooling tower make up	\$7,844	\$89,448	0.1
Add Occupancy and Daylight Sensors to Appropriate Areas	\$52,679	\$11,116	4.7
High Efficiency Toilets	\$12,000	\$10,079	1.2
Static Pressure Reset	\$2,000	\$9,324	0.2
Variable Frequency Drives on Pump Motors	\$16,000	\$6,828	2.3
Computer and Monitor Power Shutdown	\$0	\$5,715	0.0
Reduced Wattage T8 Lighting	\$5,265	\$1,963	2.7
Replace Incandescent with Compact Fluorescents	\$248	\$1,643	0.2
Use Motion Sensors to Reduce Stairwell and Security Lighting	\$6,450	\$1,147	5.6
Retrofit HID Lights with Compact Fluorescents	\$1,600	\$784	2.0
Install Drink Machine vending miser	\$1,080	\$285	3.8
Replace Compact Fluorescents Screw In downlights with LED	\$400	\$25	16.0
Totals	\$105,566	\$138,359	0.8

ECMs primarily focus on HVAC upgrades, retro-commissioning, optimizing DDC systems, fuel conversions, water conservation and lighting retrofits. These ECMs are the engines that drive the energy savings for this project.

Capital infrastructure improvements such as replacing Air Handling Units provide little energy savings but are included to improve the quality of life in buildings. Water ECMs are included to meet conservation goals and help offset the high cost of water and sewer.

ECMs in this report are cost effective solutions that will produce Energy Savings to fund project construction. Over the course of 1 year, this project will pay for itself with energy savings and increase occupant comfort. This project will also reduce the Spelman Science Center Building's Green House Gas (GHG) emissions.

Renewables

Renewables investigated include Geothermal, Solar Thermal Hot Water and Heat Recovery from Air Conditioning systems.

The EPA and fourteen States consider Heat Recovery a renewable technology. This is important as Heat Recovery often has a simple payback less than five years and is a very cost effective ECM. A list of EPA approved renewable ECMs can be found on their website: http://www.epa.gov/chp/state-policy/renewable_fs.html

Proposal Organization by Section

ECM Summary

A project overview separated by building with savings, project cost, and simple payback. Long Term Payback/Renewable ECMs are summarized in a table at the end of this section.

Next Steps

Atlanta BBC welcomes the opportunity to assist Spelman College in meeting their energy conservation and sustainability goals. ABBC recommends that Spelman College

1. Implement the simple ECMs immediately with your existing staff ie: Compact Fluorescents, Vending Misers, Computer shutdown and Static Pressure Reset
2. The remaining more complex ECMs perform a Feasibility Study to determine a firm fixed price and confirm savings estimates.

Feasibility Study Options:

Option 1: Energy Engineer – Design, bid and build
Spelman College can hire an energy engineering firm to design the energy conservation measures, develop bid specifications and implement the ECMs. This requires an upfront commitment of capital dollars to ensure proper implementation.

Option 2: Energy Services Company
Energy Services Companies (ESCO) will develop the feasibility study, finance the project and implement the ECMs through a sole source agreement between the ESCO and the customer. The ESCO will provide a energy guarantee to ensure the energy savings generated by the ECMs will pay for the annual finance cost.

Option 3: ECM Specific Contractor
The ABBC can recommend individual contractors like lighting and water conservation specialists that will provide the engineering, design and construction cost for their speciality.