

## Case Study: Howard Community College

### Aligning Energy & Climate Goals

Sage Energy works with higher education facilities, such as Howard Community College, in Columbia, Maryland, to assist them in meeting their sustainability goals. As members of ACUPCC (the American College and University Presidents Climate Commitment), Howard Community College (HCC) has specific goals, and with that in mind, Sage Energy performed a preliminary energy audit to help HCC understand what progress toward those goals could be gained through the “no-cost” suggestions that Sage Energy provided. In addition, Sage Energy also proffered innovative, longer-term energy conservation measures (ECMs) that could be implemented.

There were several opportunities that Sage Energy uncovered that would help HCC reach their energy efficiency goals, including using newer technologies than those currently employed, and adding such ECMs as installing a green or vegetative roof system. Also included in that list were:

- Executing controls systems modifications
- Installing Vending-Misers™ on vending machines on campus
- Utilizing occupancy sensors in rooms for lighting efficiency
- Installation of domestic hot water heaters that use the existing boilers
- Installation of chiller motor speed controls
- Installation of photovoltaics and other solar measures, and
- Weatherization

### HVAC

In some areas, Sage Energy suggested that HCC review and potentially change their sequences of operation with regard to their HVAC plant. For example, Sage Energy suggested that HCC utilize the electric chiller for the library as the primary chiller versus the absorption chiller, thereby saving money in this case by using electricity over the gas-fired chiller. Likewise it was proposed that HCC install small heat exchangers on each boiler to heat domestic water, rather than utilize stand-alone domestic water heaters (again saving money and being more energy efficient).

### Lighting

In the area of lighting, Sage Energy was able to recommend plans for utilizing day-lighting more effectively, by installing lighting controls in the areas where there are large expanses of glass, which allow significant daylight to enter. Likewise, Sage Energy suggested improving the use of occupancy sensors in corridors and common areas, as well as recommending installation of LEDs based on HCC's testing of the same.



## Weatherization

Sage Energy recommended installing new weather-stripping on all entrance doors throughout the campus, to make the buildings more air-tight to reduce energy consumption as well as cut down on pathways for insects to enter. Sage Energy also suggested that HCC review the roof-wall joints that are not well sealed, which leads to air either entering or leaving the building. If large gaps are found that allow significant infiltration, once corrected, the payback period could be attractive.

## Green Roof/Stormwater Management

Since the HCC campus buildings have flat roofs Sage Energy proposed installation of a vegetative roof system, to provide a much higher insulation level. In addition to reducing heat gain and loss, such innovative and environmentally-friendly roof systems can extend the roof life, and reduce storm-water run-off issues.

## Solar

Sage Energy also proposed a detailed investigation of installing solar photovoltaic panels for electricity generation as well as for warming outside air drawn in for ventilation and for pre-heating domestic water.

While energy conservation is green and cost-effective, measures are often not visible. Indeed, if executed properly, the implementation of most ECMs either improve the occupant's experience or are not noticed by the occupant. Measures such as solar photovoltaics and solar water heating, as well as green roofs are highly visible measures that can easily be used to educate and inspire sustainability in faculty, staff and students.

Through their efforts, Sage Energy helped Howard Community College become more cognizant and understanding of the benefits these basic energy efficiency upgrades provide, while at the same time helping HCC move steadily toward their goals for sustainability.

## Project Summary

Sector: Higher Education

- Implementation of energy-saving lighting, including increased use of day-lighting and motion sensors to turn off lights in unoccupied areas and installation of LEDs.
- Save money through modification of chiller use and update of HVAC control systems to minimize heating, cooling and electric usage.
- Installation of a green roof system to provide higher level of insulation and reduce storm- water run-off issues.
- Installation of solar photovoltaic panels for electricity generation and for pre-heating domestic water.

Incorporating Sage Energy's expertise in creating innovative solutions for energy savings and efficiency into Howard Community College's sustainability plan has positively impacted both the school's operational efficiencies and their bottom line. Contact Sage Energy to find out how your institution can benefit – 410.268.0511 or [info@sage-energy.com](mailto:info@sage-energy.com).