

# MOULTRIE/COLQUITT BOYS & GIRLS CLUB

420 West Central Ave., Moultrie, GA 31768

## ENERGY & WATER EFFICIENCY PROGRAM OVERVIEW

September 2015



### Project Overview

The Boys & Girls Club of Moultrie/Colquitt County is located in a repurposed appliance store that was originally built in 1945. The club has maintained the distinction of using the least amount of energy and water per club member of all of the pilot clubs, which is amazing considering that they also prepare lunch for members. They do this primarily by actively managing their utilities. For example, one month when their electricity bill went up about \$50, they raised the setpoint for air conditioning in their offices from 76F to 78F. Another factor contributing to their efficiency is that they don't have vending machines in the club. (Southface research has identified vending machines as a major plug load in boys & girls clubs.)

Improvements include new Web-based smart thermostats, LED lighting and controls, and replacing standard plumbing fixtures with low-flow fixtures.

### Site Details

- Average daily attendance of 158
- 8,480 square feet
- Constructed in 1945

### Energy & Water Benchmarks

- \$5,362 in baseline utilities cost
- 1 million Btu of energy per member per year
- 394 gallons of water per member per year

### Improvements

- Invested \$17,762, or \$2.09 per sq. ft.
- Predicted return on investment (ROI) of 6%
- Actual savings – after 8 months – of 6% energy savings, with little to no water or cost savings thus far
- Primary benefits to date are based on improved lighting quality & comfort

Projects Implemented	Predicted Annual Savings					Project Cost	Projected Return on Investment
	Water (kgallon)	Costs	Million Btu (Site)	Million Btu (Source)	CO <sub>2</sub> Emissions (tonnes)		
LED lighting & controls	-	\$1,110	26	82	3.7	\$12,591	9%
Install smart thermostats and replace refrigerant line insulation	-	\$165	4	12	0.6	\$3,100	9%
Replace 2 windows in foyer to improve daylighting & views	-	-	-	-	-	\$846	-
Install 0.5 GPM aerators on restroom faucets, and replace 2 urinals with pint-flush	7	\$38	-	-	-	\$1,225	3%
<b>Projected Total Savings, Cost, &amp; ROI</b>	<b>11%</b>	<b>20%</b>	<b>20%</b>	<b>20%</b>	<b>20%</b>	<b>\$17,762</b>	<b>6%</b>



**About the Boys & Girls Clubs of America Energy & Water Efficiency Grant Program (BGCA EWEP):** The Southeast Region of BGCA was selected to participate in an important pilot program to demonstrate the economic and environmental benefits of high-impact energy and water efficiency improvements in club facilities. Funded by The JPB Foundation, the program's ultimate goals were to reduce club utility expenses by 20 percent annually and to improve conditions in existing facilities, so they may be better used in support of BGCA's mission.

## Project Highlights

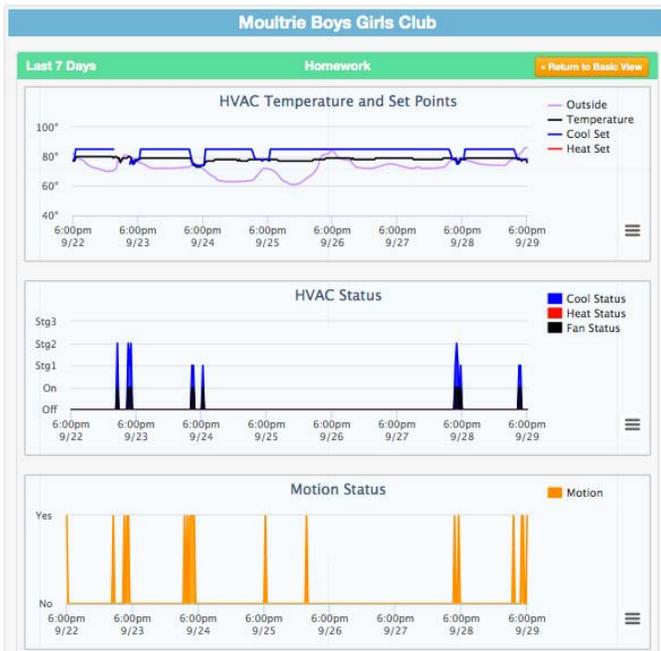


Figure 1: Web-based Thermostat Trends

New Web-based thermostats for HVAC systems are controllable online or via smartphone providing access so club staff and Southface can view conditions and trends to assist in fine-tuning HVAC operations. The graphic above illustrates that HVAC system operation correlates closely to periods of occupancy.



Figure 2: Original Thermostats

The original thermostats were managed so well that savings from the Web-based thermostats have been small, but staff do like being able to manage their HVAC systems remotely via the Internet.



Figure 3: Original Reception Area Windows

Original reception windows (above) were inefficient and boarded over. New windows (below) provide daylight and views.



Figure 4: New Reception Area Windows



Figure 5: LED Lighting & Controls

Existing lighting was replaced with high-performance LED tubes and new ballasts. Occupancy/vacancy controls were installed throughout.