

# GREENWOOD BOYS & GIRLS CLUB

1740 Carrollton Ave, Greenwood, MS 38930

## ENERGY & WATER EFFICIENCY PROGRAM OVERVIEW

September 2015



### Project Overview

The Greenwood facility of the Boys & Girls Clubs of the Mississippi Delta had obsolete and unsealed penetrations in the ceiling that resulted in unwanted air infiltration and related energy losses. R-20 spray foam insulation was installed under the roof deck on the older section of the building, and all obsolete penetrations were removed or sealed.

Other improvements include a new drinking fountain with filtered water bottle refill station, two new ENERGY STAR HVAC systems, point-of-use water heaters, Web-based smart thermostats, new windows and doors, and stormwater management improvements.

### Site Details

- Average daily attendance of 44
- 5,523 square feet
- Constructed in 1967

### Energy & Water Benchmarks

- \$8,281 in baseline utilities cost
- 5 million Btu of energy per member per year
- 1,041 gallons of water per member per year

### Improvements

- Invested \$78,496 (including club contribution), or \$14.21 per sq. ft.
- Predicted return on investment (ROI) of 2%
- Actual savings – after only 7 months – of \$3,287, and 44% energy savings

Projects Implemented	Predicted Annual Savings					Project Cost	Projected Return on Investment
	Water (kgallon)	Costs	Million Btu (Site)	Million Btu (Source)	CO2 Emissions (tonnes)		
1. Install high-performance lighting and controls 2. Replace obsolete windows and doors 3. Redirect stormwater away from the building 4. Install R-20 spray foam insulation in the old section of the building 5. Air-seal all penetrations 6. Install two ENERGY STAR HVAC systems and three Web-based smart thermostats 7. Install pint-flush urinal and 0.5-GPM aerators on restroom faucets 8. Install point-of-use water heaters and drinking fountain with filtered water bottle refill station	8	\$1,656	118	192	7.5	\$78,496	2%
<b>Projected Total Savings, Cost, &amp; ROI</b>	<b>20%</b>	<b>20%</b>	<b>20%</b>	<b>20%</b>	<b>20%</b>	<b>\$78,496</b>	<b>2%</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: Before Upgrades

Windows and doors that were in poor condition were replaced with high-performance units, improving energy efficiency, comfort, and access to daylighting and views.



Figure 2: After Upgrades



Figure 3: New R-20 Spray Foam Insulation in Attic



Figure 4: Installing the Drinking Fountain



Figure 5: New LED Lighting

Obsolete metal halide basketball court lighting, interior fluorescent lighting, and outdoor soffit lighting were all replaced with LED. Outdoor lighting is equipped with integral bi-level and photocell controls, getting brighter at night when someone is nearby, and turning off in the daytime.

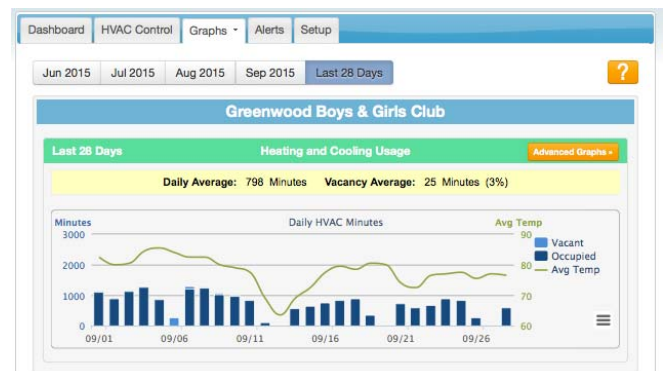


Figure 6: Web-based Thermostats with Trending Capabilities

All HVAC systems are now controllable online or via smartphone using new thermostats that Southface can view as well to assist in fine-tuning HVAC operations.