

# THOMASVILLE BOYS & GIRLS CLUB

10 Pine St., Thomasville, NC 27360

## ENERGY & WATER EFFICIENCY PROGRAM OVERVIEW

September 2015



### Project Overview

The original building envelope at the Salvation Army’s Boys & Girls Club in Thomasville included a vented attic space with batt insulation on top of a suspended ceiling, which is a very poor system for minimizing air infiltration and associated heat transfer. The batt insulation was removed and replaced by R-20 spray foam insulation on the underside of the roof deck, thereby sealing and insulating the attic, and reducing heating and cooling losses in the HVAC systems located in the attic.

Other improvements include LED lighting and occupancy based controls, weather-stripping exterior doors, installing a new drinking fountain with a filtered water bottle refill station, hand dryers to replace use of paper towels, one new high-efficiency HVAC system, Web-based smart thermostats for all three HVAC systems, and replacing standard plumbing fixtures with low-flow fixtures.

### Site Details

- Average daily attendance of 57
- 5,778 square feet
- Constructed in 1978

### Energy & Water Benchmarks

- \$9,934 in baseline utilities cost
- 4 million Btu of energy per member per year
- 2,365 gallons of water per member per year

### Improvements

- Invested \$62,446, or \$10.79 per sq. ft.
- Predicted return on investment (ROI) of 6%
- Actual savings – after only 8 months – \$1,500, and 21% 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)		
Install selected high-performance LED lighting and controls.	-	\$658	22	70	3.2	\$15,486	4%
High-efficiency HVAC and controls	-	\$1,608	55	171	7.8	\$17,393	9%
Hand dryers in restrooms	-	\$379	-	-	-	\$849	45%
R-20 spray foam insulation & weather-strip doors	-	\$709	24	76	3.4	\$17,778	4%
Drinking fountain with bottle fill station to reduce use of disposable bottles	-	-	-	-	-	\$2,200	
Replace standard plumbing fixtures with low-flow	18	\$290	-	-	-	\$5,997	5%
<b>Projected Total Savings, Cost, &amp; ROI</b>	<b>14</b>	<b>\$2,915</b>	<b>81</b>	<b>254</b>	<b>11</b>	<b>\$62,446</b>	<b>5%</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: Original Insulation over Suspended Ceiling

The batt insulation (above) was removed and replaced by R-20 spray foam insulation on the underside of the roof deck (below).



Figure 2: New R20 Spray Foam Insulation



Figure 3: New Hand Dryer Replaces Paper Towels

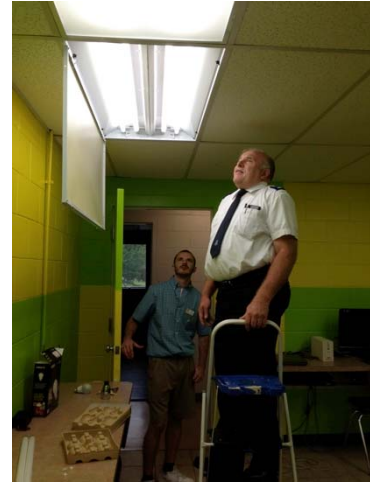


Figure 4: LED Tubes Were Tested

Existing fixtures in the computer lab were in good condition, so the fluorescent tubes were replaced with LED T8 tubes that use half as much energy. The fixtures through the rest of the facility were old; these were replaced with new LED fixtures. Occupancy controls were installed throughout the facility in a vacancy mode, where fixtures are turned on manually if needed, and then turn off if inadvertently left on when areas are unoccupied.



Figure 5: Existing Drinking Fountain

The original drinking fountain (above) was replaced with a new system with a filtered water bottle refill station (below).

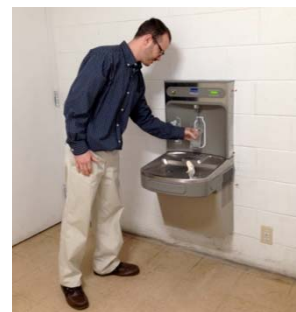


Figure 6: New Drinking Fountain