



Saving Energy for Sixth Ward Elementary School

The Louisiana State University Industrial Training and Assessment Center (LSU-ITAC) is committed to helping local facilities take the next steps to energy efficiency and sustainability. Sixth Ward Elementary School partnered with LSU-ITAC for an assessment of their facility. The students' findings are detailed below.

Assessment Benefits

- The report identified a total cost saving of **\$47,330** per year.
- The total implementation cost was **\$9,167** leading to an average payback period of **0.19** years.
- The implementations of our team's recommendations would reduce their carbon dioxide emissions by **37.16%**.

Summary

The Louisiana State University Industrial Training and Assessment Center (LSU-ITAC) performed an assessment of a local school in need of energy savings. The assessment took place in Vacherie, Louisiana on July 31, 2023. Three recommendations were finalized in the report estimating a total cost savings of \$47,330 per year. An annual reduction of 170 tons/year in carbon emission was estimated for the recommended changes. By working with Sixth Ward Elementary School, student engineers were able to help a local school save money and go green! This school is sponsored by Occidental Chemical Corporation. They generously provided



Sixth Ward Elementary School – Vacherie, Louisiana

"WE CAN, WE MUST, WE WILL ACHIEVE"

this school with the funds to implement our recommendations.

Sixth Ward Elementary School

Sixth Ward Elementary School is a public elementary school located in Vacherie, Louisiana within St. James Parish. The school consists of classrooms, an auditorium, cafeteria, and gym. The 46 employees keep this 58,000 square-foot school running smoothly. LSU-ITAC was impressed with the school's energy-efficient best practices in place prior to the assessment. These best practices include partially installed occupancy sensors, partial LED lighting retrofits, and an installed white roof to reduce heat absorption and improve building efficiency.

Evaluation Approach

The LSU-ITAC team consisted of 2 students and three assistant directors. Once on site, the team worked with Principal, Taira Every, to tour the facility and identify areas of possible recommendations. After a brief meeting, students revisited potential recommendations to collect data for the final report process. The assistant

Facility Highlights

- The elementary school operates 12.5 hours per day, Monday through Friday, totaling approximately 3,250 hours per year.
- HVAC systems represent one of the facility's major energy-consuming systems.
- Major areas within the building include classrooms, auditorium, cafeteria, and gym.

directors worked with school management on identifying areas of concern for additional recommendations. The team had a final meeting with the principal about the findings and returned to campus to conduct further research and calculations. The LSU team finalized and submitted the report on August 30, 2023.

Install Programmable Thermostats in the Classrooms

The LSU-ITAC team discovered that Sixth Ward Elementary School could save \$40,370 annually by installing programmable thermostats and smart temperature monitoring systems throughout the school. The school currently uses non-programmable thermostats that maintain constant temperatures even during off-hours and weekends, resulting in unnecessary

HVAC energy usage. Installing programmable thermostats and implementing scheduled cooling setpoints would significantly reduce cooling hours and energy consumption. This recommendation would reduce carbon dioxide emissions by 147 tons annually. Although this recommendation requires an implementation cost of \$2,510, the payback period is only 0.06 years, making it a highly cost-effective energy-saving improvement.

Other Recommendations

Our team found 2 other recommendations, and when combined with the savings from installing programmable thermostats in the classrooms, they would save the organization 33.20% in total annual utility costs! AR-2 was to install occupancy sensors in the hallways and cafeteria. AR-3 was to utilize higher efficiency lamps and/or ballasts throughout the school.

ITAC Recommendations that were Implemented at the Facility

Assessment Recommendations	Annual Resource Savings (kWh/MMBTU/gallons/etc.)	Total Annual Savings	Implementation Cost	Simple Payback
Install Programmable Thermostats	384,480 kWh	\$40,370	\$2,510	0.06 yrs.
Install Occupancy Sensors	5,990 kWh	\$629	\$150	0.24 yrs.
Utilize Higher Efficient Lamps and/or Ballasts	52,759 kWh	\$6,331	\$6,507	1.03 yrs.
Total:	443,229 kWh	\$47,330	\$9,167	0.44 yrs. (avg)

