



Saving Energy for St. Louis Academy

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. St. Louis Academy partnered with LSU-ITAC for an assessment of their campus. The students' findings are detailed below.

Assessment Benefits

- The report identified a total cost saving of **\$14,890** per year.
- The total implementation cost was **\$15,012** leading to an average payback period of **1.01** years.
- The implementations of our team's recommendations would reduce their carbon dioxide emissions by **16.45%**.

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 St. James, Louisiana on March 7, 2025. Six recommendations were finalized in the report estimating a total cost savings of \$14,890 per year. An annual reduction of 49 tons/year in carbon emission was estimated for the recommended changes. By working with St. Louis Academy, 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 this school with the funds to implement our recommendations.



St. Louis Academy Elementary School – St. James, Louisiana

Group attendants left to right: Asif Faisal Chowdhury, Jared Browning, Brandon Crandall, Anna Kay Bohannon, Amelie Echeverria, Suede Willoughby, Oluleye Ifeoluwa Benjamin (not pictured), and St. Louis Academy facility representatives (person 3 and person 8).

St. Louis Academy

St. Louis Academy is an elementary school facility committed to ensuring a nurturing learning community where high expectations prepare students for academic excellence. The building comprises classrooms, a library/media center, administrative offices, a multipurpose room/gymnasium, a cafeteria, and various specialty rooms. The 25 employees keep this 94,243 square-foot facility running smoothly. LSU-ITAC was impressed with the facility's energy-efficient best practices in place prior to the assessment. These best practices include redundant chiller systems, VFDs on pumps and fans, partial LED lighting upgrades, and partial occupancy sensors.

Evaluation Approach

The LSU-ITAC team consisted of 7 students and three assistant directors. Once on site, the team worked with Principal, Ms. Cynthia Joseph, 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 directors worked with school

Facility Highlights

- St. Louis Academy is a public school in St. James, Louisiana serving early elementary students in the St. James Parish School system.
- Total facility area is 94,243 square feet.
- The facility operates Monday through Friday from 7:30 AM to 3:30 PM, totaling approximately 2080 operating hours per year.
- The facility currently utilizes redundant chillers, VFD-controlled pumps and fans, partial LED upgrades, and occupancy sensors to improve energy efficiency.

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 April 30, 2025.

Utilize Higher Efficiency Lamps/Ballasts

The LSU-ITAC team discovered that St. Louis Academy could save \$4,623 annually by replacing older fluorescent lighting fixtures with higher-efficiency LED lamps and compatible ballasts. The lighting system still relies on older fluorescent technology in several areas of the building. Replacing these fixtures with higher-efficiency LED lamps and compatible ballasts will lower energy use substantially. This upgrade is projected to save 40,557 kWh each year while reducing carbon dioxide

emissions by 15 tons annually. Although this recommendation requires an implementation cost of \$6,769, the payback period is approximately 1.46 years, making this a valuable long-term energy-saving improvement. Utilizing Entergy Solution's incentives program also helps lower the capital costs associated with this recommendation to almost \$0 which would be an immediate payback!

Other Recommendations

Our team found 5 other recommendations, and when combined with the savings from utilizing higher efficiency lamps and/or ballasts, they would save the organization 16.73% in total annual utility costs! AR-1 was to reduce space conditioning during the holidays. AR-2 was to install occupancy sensors. AR-3 was to perform HVAC tune-ups to increase energy efficiency. AR-4 was to reduce heat gain by window tinting. AR-6 was to replace old heat-treating ovens with more energy-efficient models.

ITAC Recommendations that were Implemented at the Facility

Assessment Recommendations	Annual Resource Savings (kWh/MMBTU/gallons/etc.)	Total Annual Savings	Implementation Cost	Simple Payback
Reduce Space Conditioning During the Holidays	26,786 kWh	\$3,054	\$0	0.00 yrs.
HVAC Tune-Up to Increase Energy Efficiency	14,194 kWh	\$1,618	\$1,190	0.74 yrs.
Utilize Higher Efficiency Lamps and/or Ballasts	40,557 kWh	\$4,623	\$6,769	1.46 yrs.
Total	27,179 kWh	\$9,295	\$7,959	0.73 yrs. (avg.)

