

Temple College
Temple, Texas

C A S E S T U D Y

ESCO: Johnson Controls Inc.

Product Used: LLumar® E-1220 Low-E Window Film

ESCO

MAJOR ENERGY-EFFICIENCY IMPROVEMENTS YIELDED BY LLUMAR®



The Temple College campus, which is made up of residential, recreational, and educational buildings spreading over 114 acres, faced a serious energy challenge. With rising fuel costs and related global strains on fossil fuel resources, energy expenses were sharply increasing.

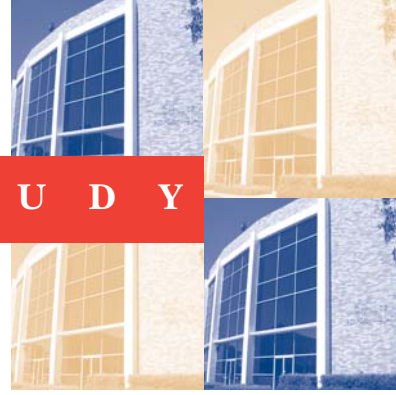
Temple College retained the services of Johnson Controls Inc. of Milwaukee, an energy services company, or ESCO, who determined that numerous large glass windows were contributing substantially to the campus' overall energy inefficiency. Johnson Controls determined that LLumar energy-control window films, which would significantly reduce summer solar heat gain and winter heat loss through these windows, should be an important part of an effective energy-saving strategy for the college.



Temple College NEB Administrative Building

ESCO

CASE STUDY



Johnson Controls subcontracted the window energy-efficiency improvement responsibility to SolArm, Inc., a LLumar dealer and a highly-qualified specialist in energy-control window film technology. Using a Department of Energy building simulation model, DOE-2, an analysis led to the selection of LLumar E-1220 low-emissivity, or low-e, window film.

When installed on glass the LLumar E-1220 film reduces the solar energy passing through the glass by 79% and improves window insulating properties by as much as 30%. The Temple College window film project, 30,000 square feet in all, will return

estimated annual fuel savings of \$33,917 with a return on investment in approximately 3.6 years. There were some buildings with longer paybacks that could have been excluded, however, Temple wanted the campus' sleek modern buildings to have a uniform contemporary appearance. The individual building return on investment varied from 1.3 to 8.6 years, with 3.6 years being the cumulative net return. The savings were determined to be impressive: a 193 kW summer peak demand savings and an annual savings of 410,000 kilowatt hours.

In addition to the energy savings, LLumar E-1220 - an energy-control film and not a security or safety film - significantly improved occupant comfort levels, protected interiors from sun fading, and yielded a degree of increased safety, which was almost immediately demonstrated. In the course of some horseplay in one of the athletic buildings in which film had just been installed, one of the students was thrown into a three by eight foot plate glass window. He ended up wistfully looking up at broken glass held together by window film with only minor scratches. LLumar film certainly saved the student from serious injury that day!

