ENERGY EFFICIENCY CASE STUDY
LEHMAN HIGH SCHOOL
HAYS CISD

Introduction

Lehman High School in the Hays CISD opened in August 2004. The 256,000 square foot facility was constructed with energy efficiency in mind. Some of the energy-saving and sustainable features are listed below.

Building Features

- High-efficiency air conditioning
  - Two-stage gas/electric rooftop units in classroom areas
  - 13-16 SEER
  - Zoning for flexibility of use
  - Comprehensive test and balance and systems commissioning
- Efficient lighting
  - LED exit lights
  - T-8 lamps with electronic ballasts
  - Daylighting in corridors
  - Bi-level switching in classrooms
  - Metal halide lighting with flexible switching in gymnasium
- High performance energy management control system
  - Building systems automation
  - CO_2 demand based ventilation
  - Remote monitoring and control
  - Lighting controls
    - Outdoor – multiple zones
  - Water heaters
- Water saving feature
  - Low-use water fixtures
  - Infrared controls on wash fountains
- Efficient building envelope
  - Insulation at roof deck
  - Reflective white roof
  - Low-e windows
  - Multiple vestibules

Hays CISD Operations

- Efficient Owner operations, maintenance, and building scheduling

Energy Efficient School

Electric utility costs at the new Lehman High School are very encouraging. For the 2004-05 school year:

- Total electric cost: $183,480
- Electric cost per square foot: $0.70
- kwh per square foot: 9.40

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Natural gas data is currently unavailable; however, using a typical cost of $0.05 to $0.10 per square foot for gas, yields an estimated energy cost index (ECI) of $0.75 to $0.80. This is much lower than most high schools of equivalent size and the SECO benchmark of $1.00.

For comparison, the existing Hays High School, with 471,885 square feet, had the following electric use for the 2003-2004 school year:

- Total electric cost: $377,263
- Electric cost per square foot: $0.80
- kwh per square foot: 11.3

Based on this comparison, the new Lehman High School shows an approximate 12% savings in electric costs per square foot and a 17 % increase in energy efficiency (as measured by kwh per square foot).