

COMMERCIAL NEW CONSTRUCTION PROGRAM



CASE STUDY

SOUTHEAST POLK NEW 6-7 MIDDLE SCHOOL

PROJECT OVERVIEW

The Southeast Polk 6-7 Middle School is a new, approximately 210,000-square-foot, two-story facility located in Altoona, Iowa. The building includes classrooms, a gymnasium, cafeteria, library and administrative spaces that support a modern learning environment for a growing student population.

The facility is designed to reduce energy use by over 60%.

ENERGY EFFICIENCY STRATEGIES

The project incorporates energy efficiency strategies informed by energy modeling and design analysis, including:

- **High-efficiency HVAC systems**, including air-cooled chillers, gas boilers and active chilled beam systems, improving heating and cooling performance. The chilled beam systems create a quieter learning environment by reducing the need for fan-driven air movement in classrooms. It also reduces ductwork and the number of moving parts in occupied spaces, lowering maintenance costs.
- **A dedicated ventilation system** with total heat recovery, enhanced partial load efficiency and demand control ventilation, further lowering utility costs while still supporting healthy indoor air quality
- **High-efficiency lighting and controls**, including lighting power densities significantly below baseline; occupancy and vacancy sensor controls in classrooms, offices and common areas; and exterior lighting reductions to lower overall lighting load
- **Enhanced building envelope performance**, including higher insulation levels and high-performance glazing

These strategies collectively reduce overall energy consumption, peak demand and long-term operating costs.

CNC PROGRAM SUPPORT

"MODUS appreciates the Willdan CNC program because it helps owners make informed, energy-conscious decisions that benefit both the building and the community it serves. On projects like the new Southeast Polk 6-7 Middle School, the program provides a clear framework for evaluating energy-efficiency options and translating technical design strategies into practical information owners can use. It is a valuable tool for supporting long-term operational savings, responsible stewardship of public resources and better-performing facilities." - Heidi Meyer, MODUS

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ENERGY SAVINGS

54% annual utility cost savings compared to baseline



Annual cost savings equivalent to approximately three full-time teacher salaries

936,807 kWh

in electric savings

111,283 Therms

in natural gas savings, resulting in an estimated

1,416 Metric Tons

of CO₂ emissions reductions annually, equivalent to:



Powering 190 homes for a year



Avoiding the CO₂ emissions from 160,000 gallons of gas consumed



Carbon sequestered from 1,420 tree seedlings grown over 10 years

PROJECT TEAM

- **Owner:** Southeast Polk School District
- **Developer:** The Weitz Company
- **Architect:** FRK Architects + Engineers
- **Engineers:** MODUS



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