

COMMERCIAL NEW CONSTRUCTION PROGRAM

CENTRAL MIDDLE SCHOOL RENOVATION AND WATERLOO CAREER CENTER EXPANSION

PROJECT OVERVIEW

The Waterloo Community School District's project, totaling 164,432 square feet, included the renovation of Central Middle School and the expansion of the Waterloo Career Center. The middle school, built in 1974 with minimal access to daylight, was redesigned to create a modern learning environment with flexible spaces for small-group work. The career center expansion included the addition of a new building to accommodate 15 new programs, providing students with hands-on experience in various industries.

ENERGY EFFICIENCY STRATEGIES

The project incorporates several strategies to meet the goals of enhanced daylighting and energy savings, including:

- A **ground-coupled heating and cooling system** with active chilled beams, servicing the entire campus and providing efficient, sustainable temperature control across both buildings, with ventilation supplied through energy recovery ventilators
- A **high-performance envelope** that minimizes heating and cooling loads.
- **Lighting power density reduction**, with energy savings prioritized by reducing the lighting power density across both buildings to 30% lower than ASHRAE 90.1-2010 standards
- **Daylighting strategies** were prioritized in the renovation and expansion by adding glazing and skylights to provide natural light throughout the facility
- **Demand control ventilation**, which adjusts airflow based on occupancy levels, ensuring optimal indoor air quality and energy efficiency

CNC PROGRAM SUPPORT

"Working with the CNC program provides valuable guidance and evaluation of the proposed systems and does an important job of reminding the design team to keep energy use a priority design goal."

- Kathryn Payne, Principal, Architect, INVISION Architecture

ENERGY SAVINGS

73% annual utility cost savings compared to baseline

1,363,115 kWh

in electric savings – equivalent to:



Powering 123 homes for a year



Avoiding the CO2 emissions from 107,152 gallons of gas consumed



Carbon sequestered from 15,746 tree seedlings grown over 10 years

PROJECT TEAM

- **Owner:** Waterloo Community School District
- **Architect:** INVISION Architecture
- **Engineering Team:** MODUS Engineering
- **Structural Engineer:** Raker Rhodes
- **General Contractor:** Larson Construction

DISCOVER YOUR ENERGY SAVINGS POTENTIAL – GET STARTED TODAY!

IOWACNC.COM | CNC@WILLDAN.COM | 877.939.1874