

COMMERCIAL NEW CONSTRUCTION PROGRAM

COLLEGE COMMUNITY SCHOOL DISTRICT – PRAIRIE CREEK INTERMEDIATE SCHOOL

Image courtesy of OPN Architects

PROJECT OVERVIEW

Prairie Creek Intermediate School, located in Cedar Rapids, Iowa, spans 189,500 square feet and serves 1,200 students in grades five and six. The design embraces the natural curves of the site, with the building nestling into the landscape and opening up to abundant daylight. Inside, natural light floods essential space, reducing the need for artificial illumination. The flexible layout features activity-based programs on the west side and classrooms on the east, connected by a double-height multipurpose space.

ENERGY EFFICIENCY STRATEGIES

To complement its thoughtful design and maximize sustainability, the building incorporates a variety of energy efficiency strategies aimed at optimizing performance and reducing environmental impact, including:

- A **ground coupled heating and cooling system** with a water-to-water plant that supplies heating and cooling water to energy recovery and air handling units. These units are organized into ventilation zones based on their operating schedules, enabling them to be turned off when specific areas are unoccupied. The HVAC system accounts for more than two-thirds of the achieved energy cost savings.
- An **advanced building automation** system that optimizes energy use and ensures thermal comfort.
- A **high-performance envelope**, which includes a superior curtain wall system and insulation levels exceeding code requirements, reducing HVAC loads and enhancing durability.
- **Lighting** levels exceeding code requirements by 45%, reducing energy consumption.

CNC PROGRAM SUPPORT

“The CNC program was critical in helping the owner understand the value of the HVAC system and in shaping the strategies employed to balance the desire to produce an energy-efficient system with maintenance goals.” – Toby Olsen, Associate Principal, OPN Architects

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ENERGY SAVINGS

55% annual utility cost savings compared to baseline

1,342,667 kWh in electric savings – equivalent to:



Powering 121 homes for a year



Avoiding the CO2 emissions from 105,544 gallons of gas consumed



Carbon sequestered from 15,509 tree seedlings grown over 10 years

2,585 therms avoided in natural gas savings

PROJECT TEAM

- **Owner:** College Community School District
- **Architect:** OPN Architects
- **Engineering team:** Design Engineers