

COMMERCIAL NEW CONSTRUCTION PROGRAM

CASE STUDY

DES MOINES UNIVERSITY MEDICINE AND HEALTH SCIENCES CAMPUS

Image courtesy of Formation Group

PROJECT OVERVIEW

Completed in 2023, the Des Moines University Medicine and Health Sciences campus in West Des Moines represents a state-of-the-art facility designed to support the advancement of medicine and health sciences. The campus sits on 88 acres and consists of four buildings—Health and Wellbeing, Campus Support, Innovation, and Edge of Advancement—totaling 381,700 square feet of conditioned area. These facilities provide essential spaces for students and staff, including labs, classrooms, offices, and dining areas, fostering a dynamic and supportive learning environment.

ENERGY EFFICIENCY STRATEGIES

The campus employed several innovative energy efficiency strategies, including:

- A **closed-loop ground-coupled heating and cooling system** fed by water-to-water heat pumps with heat recovery, located in the central plant.
- **Daylighting and passive shading** to reduce solar heat gain.
- **Energy-efficient lighting systems** that reduce energy use by 50%.

These strategies led to the campus receiving LEED Silver Certification, with WELL Building Gold Certification expected—making it the only campus project worldwide to achieve both distinctions.

CNC PROGRAM SUPPORT

The Commercial New Construction (CNC) program played a crucial role in supporting the project's energy efficiency goals. By modeling alternative systems and benchmarking against program requirements, CNC helped the team make informed decisions that enhanced return on investment and reduced payback periods. Additionally, the MidAmerican Energy incentive bought down the incremental cost of the ground-coupled central plant compared to a typical boiler-chiller central plant, further contributing to the project's financial viability.

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ENERGY SAVINGS

54% annual utility cost savings compared to baseline

6,850,316 kWh

in electric savings – equivalent to:



Powering 650 homes for a year



Avoiding the CO2 emissions from 538,490 gallons of gas consumed



Offsetting greenhouse gas emissions from recycling 207,865 trash bags of waste instead of sending them to a landfill



Carbon sequestered from 79,130 tree seedlings grown over 10 years

2,814

therms avoided in natural gas savings

PROJECT TEAM

- **Owner:** Des Moines University Medicine and Health Sciences Campus
- **Owner's Representative:** Formation Group
- **Architect:** RDG Planning & Design
- **Mechanical and Electrical Engineers:** IMEG Corp
- **General Contractor:** Turner Construction