EXISTING BUILDING COMMISSIONING
CASE STUDY

BRAEMAR ARENA
Edina, Minnesota

PROJECT BACKGROUND
Braemar Arena in Edina, Minnesota, has one outdoor and three indoor rinks, as well as the two-level, 30,000-square-foot Hornets Nest. The arena is home to local hockey clubs and is available for open skating, figure skating, skating lessons, and events. Braemar also hosts national and international champion hockey and figure skating competitions.

CEE worked with the Braemar Arena to identify energy savings and opportunities to improve the facility’s operational efficiency. The arena is one of the highest energy consumers in Edina’s building portfolio, and addressing its energy use through recommissioning will help the City achieve the greenhouse gas reduction goals it has set for 2025 and 2050.

Key objectives:
• Reduce energy demand and expenditures
• Reduce operation and maintenance expenditures
• Improve building system control and occupant comfort
• Recommend additional energy saving opportunities on identified capital projects

INVESTIGATION
CEE’s engineers assessed the building’s primary energy-using equipment and collected trend data from the three onsite building automation systems to understand the arena’s standard operations and identify energy reduction opportunities.

Energy savings and implementation costs were calculated for each energy conservation opportunity identified in this study.

ANNUAL SAVINGS POTENTIAL
CEE identified 26 energy conservation opportunities at Braemar Arena, with potential for more than $101,000 in annual energy savings and a three-year payback, including:

• $310,257 estimated implementation cost
• $5,519 recommissioning rebate
• $10,000 maximum bonus rebate achieved

SOLUTIONS
CEE recommended comprehensive energy efficiency improvements to be coordinated with arena operations and budget planning.

Hornets Nest
• Rooftop unit schedule optimization
• Snowmelt system optimization

West Rink
• Schedule optimization of makeup air unit
• Rink refrigeration system controls
• Dehumidification heat reclaim control
• Compressor head cooling

East Rink
• Rink refrigeration system controls
• Heat reclaim improvement
• Dehumidification improved heating and set points
• Infrared heating

South Rink
• Low emissivity ceiling, which greatly reduces radiant heat from the ceiling onto the ice sheet
• Heating modification to reduce impact on ice sheet
• Rink refrigeration system controls
• Subfloor heating control
• Makeup air unit schedule optimization

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