

LED Upgrade at The Stephen C. West Ice Arena

Breckenridge, Colorado - July 2018

Home to ice skating, hockey, curling and other ice sports, the Stephen C. West Ice Arena is an icon within the picturesque community of Breckenridge, Colorado. Popular amongst residents and tourists alike, the aesthetic and functionality of the facility combined with a focus on energy conservation drove the decision to invest in a brighter future by way of updated lighting technology.

Challenge: What makes following a small puck zipping across ice in an intense game of hockey even more difficult? Poor lighting. The facility had been lit using an 800-watt induction lighting system since 2000, which plagued the arena with dark spots and insufficient light levels of only 33 footcandles on the ice. Lights were perpetually burned out, needing constant maintenance which required a bucket truck that had to be scheduled around a nonstop activity schedule. Between the expense of upkeep and the nearly \$34,000 annual energy costs, upgrading to LED technology was a decision they couldn't afford not to make.

Solution: When Dennis VanderSchaaff, Director of Operations for the Breckenridge Recreation Center, reached out to Ted Lunn, Energy Specialist for Colorado Electric Supply, looking for a solution, he was excited about the improvements promised by LED technology. He needed a fixture that could withstand the moisture and harsh elements of the rink's wet environment while providing a glare free, uniform illumination that would enhance the overall experience within the arena. The decision was made to move forward with Shat-R-Shield's Ironclad[®] LED Vapor Tight High Bay (VTHB) above the ice with the Incoplas[®] LED Hybrid as a supplement in locker areas. Ultimately 72 of the 800-watt induction lamps were replaced one-for-one with the 236-watt VTHB fixtures and 10 of the 175-watt metal halide lamps were replaced with 10 of the 45-watt Hybrid fixtures. The response has been unanimous from facility managers, staff, players, referees and spectators alike; the WOW factor is there and safety as well as visibility has improved dramatically.

BEFORE:



AFTER:



Project Scope: Total fixtures included 72 - 236W Ironclad® LED Vapor Tight High Bays and also saw the addition of a series of 45W LEDs in place of outdated 175-Watt metal halide lamps in its locker areas. Thanks to its efficient new 72,000-hour LED technology, the facility has reduced its annual lighting costs by 70%, from \$34,000 to \$10,000, and will enjoy an over \$10,000 rebate from its local utility company, with an average operating cost of \$0.09 kWh.

High Bay Replacements	Wattage	Footcandles	Kilowatts
Removed (72) 800W induction High Bays	57,600W	33 fc	378,432 kWh
Replaced (72) 236W Ironclad® LED Vapor Tights	16,992W	114 fc	111,637 kWh
<i>Differences & Savings</i>	<i>40,608W</i>	<i>81 fc</i>	<i>266,795 kWh = \$24,012.00 annually</i>

Locker Area Replacements	Wattage	Footcandles	Kilowatts
Removed (10) 175W Metal Halide Lamps	1,750W	10 fc	11,498 kWh
Replaced (10) 45W LED Hybrids	450W	39 fc	2,957 kWh
<i>Differences & Savings</i>	<i>1,300W</i>	<i>29 fc</i>	<i>8,541 kWh = \$768.69 annually</i>

Results: “Of the many upgrade projects we do, this one has had one of the biggest impacts on our staff and patrons that we’ve seen,” said VanderSchaaff. “The LEDs brought up our footcandle level by 100 percent in certain areas and we continue to get comments on how light and bright it is and how much people enjoy skating in that environment.

“It’s definitely a brighter, crisper, and overall more inviting atmosphere for playing hockey, skating, and for spectators as well,” says Lunn. “We couldn’t be happier with the results.”

- **Total Annual kWh Savings:** 275,336 kWh
- **Total Annual Energy Cost Savings:** \$24,012.00
- **Initial Cost of LED Fixtures:** \$36,720.00 after rebate
- **Utility Rebate for DLC 4.0 Qualified Product:** \$10,800.00
- **Projected Return on Investment (ROI):** 1.53 years

