



CASE STUDY/MAPLETON ARENA



LAS Partners with Acuity Brands Lighting to Provide Turnkey LED Lighting Solutions for Municipal Recreational Facilities

DETAILS

Project:

PMD Arena Complex
Township of Mapleton, ON

Project Size:

32 LED fixtures/Wired Controls

Products:

IBL LED, ZL1N LED, nLight®

Lighting Specifier:

Conrad Lighting Solutions

Lighting Sales Representative:

LAS

Lighting Manufacturer:

Lithonia Lighting®, Acuity Controls

The Situation

LAS, part of the AMO (Association of Municipalities of Ontario) provides municipalities with competitively priced, sustainable business services. In 2015, recognizing the benefits of LED lighting technologies to dramatically improve light quality and provide immediate savings in the form of lowered maintenance and energy costs, LAS partnered with Acuity Brands Lighting to provide a one stop, turnkey lighting solution for high bay applications including arenas, recreational facilities, as well as transit and public works garages.

An LED lighting systems package that included quality luminaires and controls from Acuity Brands Lighting, warranties, photometric design, installation management and commissioning services was developed to offer municipal decision makers a simplified approach to a technologically complex process. Given their visibility, lighting upgrades in recreational facilities are an excellent showcase of energy conservation and operational cost savings.

Holding the distinction of the first of these arena projects under the umbrella of LAS is the PMD Arena Complex in the village of Drayton, Ontario.

The Challenge

Throughout Ontario, in communities large and small, recreational facilities are among the most frequently visited buildings in the municipality, supporting the area's sports and leisure activities and community events. Many of these facilities are still using fluorescent and/or HID light sources with inherent limitations of light quality, energy efficiency and controllability.



Before

The Challenge

In the Township of Mapleton, a rural community in Southern Ontario, the recreational facility in the village of Drayton is the hub for services that bring cohesiveness to the community. Primarily a hockey arena, the facility, with its existing metal halide high bay luminaires, had a relatively poorly lit ice surface. Power issues caused fixtures to cycle off; this, as well as a slow start up speed, interrupted games. There were limitations to changing the light levels which precluded flexibility and adaptation of the space for other community functions. The metal halide lamps had a relatively short life cycle which proved difficult and expensive for maintenance costs.

The Solution

The Township of Mapleton turned to LAS to leverage the Recreational Facility LED Service to address their challenges: improve light quality, accommodate for diverse light level requirements, reduce maintenance costs and benefit from reduction in energy usage. The new LED lighting system will feature instant on/off with full dimming capabilities, provide quiet operation, improved aesthetics and highlight the community's commitment to environmental conservation and sustainability.

Project consultant John Conrad of Conrad Lighting Solutions, along with lighting designer Steve Duff of Svenlumen Inc. proposed a lighting design plan which included the Acuity Brands IBL series LED high bay luminaire for the ice surface lighting and the ZL1N linear LED fixture for use in arena seating areas.

After



The Result

The most significant results of the lighting upgrades at Drayton Arena are increased light levels on the ice surface (to an average of 64 FC) and an estimated energy savings of \$3,369 annually for the high bay lighting alone. With a luminaire lifespan of up to 100,000 hours, additional savings and benefits will be realized through an estimated maintenance savings of \$3,630 annually. Total local utility energy incentives of \$5,200 for the completed project were realized to further increase the return on investment. A simple payback based on usage was calculated at 6.11 years. The lifecycle business case for this facility's complete lighting project over the next 20+ years provides an internal rate of return of >14.5% (calculation is based on an inflation rate of 5% and discount rate of 6%).

Completed in 2015, the lighting upgrade met with the approval of the municipality: "Facility users have told us they like the improved lighting level and we feel the dimming function will be useful for other events. The LAS program really made it easy for us as the design, product selection, and incentive work was all done for us so we could concentrate on take care of our facilities and offering our programming. We would recommend the program to any municipality interested in improving their lighting and saving money" Brad McRoberts CAO Clerk, Township of Mapleton.

