LED FACILITY LIGHTING CASE STUDY

"The County of Middlesex was very satisfied with the LAS program and would recommend it to other municipalities"

Chris Traini, County Engineer

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ABOUT LAS

LAS is a preferred provider of competitively-priced and sustainable business services for Ontario municipalities and the broader public sector. LAS helps its customers ***Save Money, Make Money & Solve Capacity***.

middlesex county

Facility & Address
Middlesex County Public Works Garage
1786 Elginfield Road, Parkhill, ON

Use(s)
Public Works Garage

Annual Operating Hours
2,500 hours

Project Size
121 Fixtures - 19 Metal Halide (MH) fixtures, 98 T8 fixtures, 6 High Pressure Sodium (HPS) exterior fixtures

Existing Fixtures
MH @ 400W, T8 @ 32W, HPS @ 175W

LED Replacement Fixtures
Acuity IBG 18000LM @ 112W, Linear LED T8 @ 15W, Exterior LED @ 50W

Reason for Lighting Upgrade
High energy consumption and escalating operating costs

Project Cost
$22,800

conrad lighting solutions

AcuityBrands.

THE SITUATION

In 2007, Middlesex County built three public works garages at different locations, each with similar size and dimensions – approximately 8,000 sq. ft. Each garage was originally equipped with 19 Metal Halide (MH) fixtures @ 400W/fixture, 98 T8 fixtures @ 32W/fixture, and 6 High Pressure Sodium (HPS) fixtures @ 175W/fixture, consuming 45,438 kWh annually. The fixtures were in good condition and provided adequate lighting levels, but energy consumption and related operating costs have continued to escalate since the garages were first completed.

THE SOLUTION

The areas of focus for this upgrade were the back rooms, offices, and vehicle bays, where the 19 Metal Halide (MH) fixtures accounted for the bulk of energy consumption. Installers replaced those with Acuity IBG 18000LM fixtures @ 112W, along with LED T8s @ 15W, and new exterior LED fixtures @ 50W. All replacements were on a one-for-one basis. The result was a decrease in annual electricity consumption of 30,653 kWh, totalling 14,785 kWh. In addition to the fixture replacements, motion sensors were installed to control the main ceiling lighting, providing an additional opportunity for energy savings. However, this case study does not include any additional energy or cost savings from those sensors.

INSTALLED FIXTURES

IBG High Bay

Total # Fixtures	Wattage / Fixture	Total kWh	kWh Savings
19	112	5,320	16,530

"The LAS process was straightforward and the applications were easy to complete and review through the online portal. "

- Chris Traini, County Engineer

THE RESULTS

Annual Consumption **Before** Upgrade	45,438 kWh
Annual Consumption **After** Upgrade	14,917 kWh
Energy Consumption Savings	**30,521 kWh**
Energy Costs **Before** Upgrade	$7,270
Energy Costs **After** Upgrade	$2,387
Energy Cost Savings*	**$4,883**
Maintenance Cost Savings**	$1,500
IESO Incentives	$4,028
Return On Investment	34%
Simple Payback	3 years

67% Decrease in Energy Usage

67% Decrease in Energy Costs

17.7% Project Cost in IESO Incentives

3 Year Simple Payback

* Energy costs and savings are based on an average cost of $0.16/kWh at the time of the project

**Maintenance cost savings are estimated based on established lamp and ballast failure rates.