Kwantlen POLYTECHNIC UNIVERSITY

Sustainability Success Story

Low Wattage T8 Lamps Save 24 Hours a Day

The Challenge

A number of our lighting fixtures operate long hours every day by necessity. These areas include egress or transit task areas (hallways), and areas with 24 hour a day safety or security lighting. Reducing the hours of operation, while ideal, is not practical at this point. About 15 to 20% of our lamps are in these categories.

Our Solution

We evaluated new T8 lamps that use only 30 Watts, compared to a typical 32 Watts. Light output was slightly lower but since emergency fixtures only represent about 5% of existing fixtures, average lighting levels were reduced by less than one-half per-cent. In hallways and washroom where all or most of the lamps are on long hours, the task requirements were low, and a minor reduction in light levels is not a concern.

We are also considering using these lamps in where the existing lighting level is considered high for the present task, but spacing, the fixture type, system appearance, etc. precludes delamping or total system conversion. Demand savings will be part of this measure since the lighting is 24 hours/day

We purchased over 6,000 low wattage (30 Watt) lamps, and received the $17,000 funding from our local utility (BC Hydro). Incremental project cost would be less than $3,000 if these lamps were purchased on a spot replacement basis, but we would have had to wait up to 3 years to have all the savings in place. Lamps determined to be in good shape (eg. no blackening at ends), or where it was known they had recently been replaced, were retained for use as replacements in other parts of the building.

Project Cost, Annual Savings and Other Benefits

Project Cost	$17,000 (paid by local utility; BC Hydro)
Project Savings	$4,000 per year (Electrical costs)
Electricity Savings	80,000 kWh (almost 1% of our total consumption)
Simple Payback (years) / Return on Investment (ROI)	4.25 Years / A Return on Investment of 25%
Reduced Maintenance Costs	Opportunity to begin group relamping in these areas, for annual lamp replacement cost reduction of 75%
Environmental Improvement - Greenhouse Gas Reduction	Reduced emissions of 29 Tonnes of GHG