



## BLUE HILL PUBLIC LIBRARY

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**SYNOPSIS** With multiple reading rooms, foyers and galleries, the 1940 Blue Hill Public Library sought to lower its carbon footprint by relamping its conventional lightfixtures to LED.

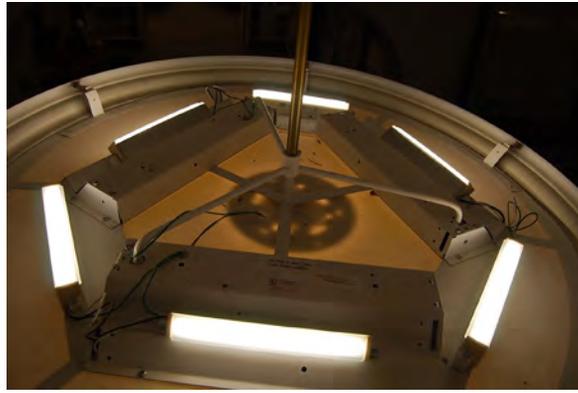
**SCOPE** The Blue Hill Public Library relamped pendants, spotlights and recessed lights with new LED technology.

**RESULTS** The Library reduced its electricity consumption by nearly 30%, saving approximately \$2,000 a year (at 10¢ per kilowatt hour).

**LESSONS** The decision to change lighting technology was an easy one: LEDs last around 10 times longer than incandescent bulbs and use 85% less energy. LEDs can last 3 times longer and can be 30% more efficient than CFLs. But the Blue Hill Public Library learned some valuable lessons about conversion along the way.



# I N P R A C T I C E



**LEFT:** The project manager carefully installed LED strips in the pendant, overlapping the light to eliminate any shadows or dark spots cast on walls.

**LEDs emit directional light.** Unlike incandescents and compact florescent lights (CFLs) which illuminate a filament or gas that radiates light from a bulb or tube, LEDs produce light from a flat semiconductor. The lightwaves from that semiconductor are then directed by a plastic lens placed over it. This is something to keep in mind if you are installing LED lighting other than omni-directional bulbs, such as LED strip lighting.



**LEDs are sensitive to high heat.**

One advantage of LED lighting is that LEDs convert more energy to light than conventional bulbs. However, high-heat enclosures can damage an LED's semiconductor. To protect the LED, many "screw-in" LED blubs incorporate large bases to vent heat, and more compact models require room to breathe. When purchasing LED replacements for lighting enclosures, just make sure the new bulb dimensions will fit.



**ABOVE LEFT:** These spotlight LED units have large vents encircling the lens to dispell heat. **ABOVE RIGHT:** The socket is a tight fit in the recessed canister light in the Blue Hill Public Library's Children's Room.



**LEDs produce cool (white or blue) light.** Other colors we may see from LEDs are a result of the chemical construction of the semiconductor and other factors such as lenses and filters mounted over the LED. While incandescents and CFLs have (relatively) uniform coloration from the filament and gas they illuminate, the color of LED light is reliant on the method and quality of construction. Identifying lumens (brightness) and Kelvin temperature (color of light) to best suit your project will prove more helpful than using Watt replacement comparisons as your guide.

**Not all LEDs are created equal.** The range, coloration and longevity of LED lights are not universal. Consider the technical specifications of an LED product before placing large orders.

**ABOVE LEFT:** After relamping the gallery lights in a collections room, the Blue Hill Public Library has observed the lights are overly bright. LEDs may produce more lumens than their Wattage equivalent, allowing you to install fewer new replacement blubs.