



# Building Up

## A Message from ...

Light Emitting Diode (LED) technology is in the spotlight with a growing number of products for a broad range of commercial and residential applications. As manufacturers and suppliers race to introduce new LED products, design and construction professionals should be aware that not all LEDs are created equally, and this type of lighting is not ideal in every setting.

Lighting choices abound, and LED technology has some limitations. Be prepared to offer your customers sound advice and recommendations about all types of energy-efficient lighting. Do the research before beginning a lighting project to ensure that products fit specific applications and perform to expectations. Minnesota Power's power of one energy conservation team provides technical assistance and resources to assist you in the process.

This issue of *Building Up* highlights commercial LED applications and ways to identify the right bulbs to achieve your lighting performance and energy-saving goals—while securing the highest rebates for you or your customers! Use this information and all of the tools available at [www.mnpower.com/powerofone](http://www.mnpower.com/powerofone) to build your business on energy efficiency.



... the  
*Energy Conservation Team*

## LEDs Can Be a Bright Choice for Business

The switch is on as many businesses look to LED technology for their commercial lighting needs. LEDs have advanced in recent years, providing new opportunities for businesses to save energy and lower operating costs without compromising lighting quality.

LEDs use semiconductors to turn electricity into light. Also known as solid-state lighting, they do not have filaments that burn out. LEDs produce bright, white light without generating a lot of heat. In proper conditions, they can use 75% less energy and last 35 to 50 times longer than incandescent and about five times longer than compact fluorescent lights.

Other potential advantages in commercial settings include directional light emission, resistance to mechanical failure, "instant on" at full output, improved performance at cold temperatures, and opportunities for color tuning, dimming, light control and lowering of cooling loads.

*"The lighting quality of LEDs has advanced and the price has become more affordable in the past few years. LEDs offer significant energy savings and don't emit a lot of heat, so they reduce the demand on our cooling towers. They also last longer than other bulbs, which means less maintenance."*

**Bill Roberts, Facilities Manager  
A & L Properties**

A & L Properties, a major real estate development and property management firm, has incorporated LEDs into several of its properties. The Duluth Technology Village is one example. LED spot lighting and recessed track lighting can be found throughout the multi-use facility, illuminating elevators, an executive conference room, and the dining area of Pizza Lucé restaurant. A & L Properties also has installed LED track lights in dozens of apartment *continued*



## Great Refrigerator/Freezer Roundup with Window A/C—\$75 Reward!

Minnesota Power is offering a special \$75 reward for residential customers who turn in an old energy hog refrigerator or freezer along with up to three window air conditioning units, now through July 31, 2012. The reward is \$50 for a qualifying refrigerator or freezer alone. Help your customers rope this deal.

Tell them to call 866.552.6755 or visit [www.mnpower.com/RefrigeratorRecycling](http://www.mnpower.com/RefrigeratorRecycling).





cont. units, integrated LED recessed spotlights into a dental office at Duluth's Lakewalk Surgery Center, and replaced numerous exterior signs with LED models.

Still, ongoing research has not perfected LED lighting for all uses. Limitations that remain include the need for higher wattage for high-pressure sodium and metal halide replacement applications, heat sensitivity, and, in some cases, design challenges that can lead to rapid lumen depreciation or permanent failure.

Architects, engineers, building contractors and others who work in commercial construction can help customers enter into lighting projects with reasonable expectations of how various products and systems will perform. With LEDs, that means knowing whether they offer the right brightness, color rendering and energy efficiency for the application, and how long it will take before light output diminishes to a level where they will have to be replaced.

The Illuminating Engineering Society ([www.ies.org](http://www.ies.org)) of North America has developed and approved methods to measure the electrical and photometric performance of LEDs. Another valuable tool is the United States Department of Energy Lighting Facts Labels ([www.lightingfacts.com](http://www.lightingfacts.com)), which provides side-by-side comparisons of LED products based on light output (lumens), watts, lumens per watt and color performance (Kelvin and color rendering index).

Minnesota Power's *power of one* energy conservation team offers straight, unbiased information and up-to-date resources to facilitate wise energy choices. Its professional energy analysts help shape project designs, research available technologies, calculate potential energy savings and determine rebates based on estimated kilowatts saved.

The results are right-fit solutions for customers—and a brighter bottom line for all. 

## Contact Information



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Check out our website for past issues of *Building Up*.  
[www.mnpower.com/buildingup](http://www.mnpower.com/buildingup)

## SPECIAL PROMOTION—LED LIGHTING (through August 31, 2012)

Minnesota Power currently is running a special promotion to advance the use of LED lighting in commercial settings. In addition to a base rebate of \$200/kW saved, the program



offers bonus incentives for qualifying, Nationally Recognized Testing Laboratories (NRTL)-rated and Illuminating Engineering Society (IES)-approved LED products. Bonuses are based on

product quality ratings and industry recognition through ENERGY STAR®, the Department of Energy, and the DesignLights™ Consortium. There also is a bonus for lighting systems that are Made in the U.S.A.

**For more information about this special offer, visit "One Business" at [www.mnpower.com/powerofone](http://www.mnpower.com/powerofone) or call 218.355.2909 to complete a pre-application.**

## Featured Incentives

**Educate your customers** about Minnesota Power's conservation incentives and build your business on energy efficiency:

**\$375 ECM Inside Forced Air Furnace with CAC Combo Rebate**  
Get a \$375 rebate on a new forced air furnace (gas, electric, propane, oil) with integrated electronically commutated motor (ECM) plus standard central air conditioning (CAC) or air source heat pump (ASHP), through Feb. 28, 2013.

**ENERGY STAR® Lighting Rebates** Minnesota Power offers a variety of discounts and rebates for the purchase of ENERGY STAR®-qualified light bulbs and fixtures. Learn more about technologies and current incentives at [www.mnpower/lighting](http://www.mnpower/lighting).

**Saving energy is like finding money ...  
through effective energy choices. Visit**

[www.mnpower.com/foundmoney](http://www.mnpower.com/foundmoney)

**for more complete information on rebates and other energy-saving tools to help your customers make energy-saving investments and build your reputation as a business committed to delivering the benefits of energy efficiency.**