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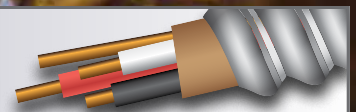
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SEASONS CHANGE, SO SHOULD YOUR LIGHTING

Making seasonal adjustments for comfort, safety, productivity and savings / JONATHAN CARTRETTE

As seasons change, it's time to optimize lighting to adjust for longer or shorter daylight hours and inclement weather, and to ensure a balance of natural and artificial lighting for comfort, safety, productivity and cost savings.

Practising good lighting management means adapting to the physical environment of a building. With proper lighting control, users can get the productivity gains, cost savings and high level of comfort and security needed year-round—increasingly for exterior applications as well as interior.

What difference does it make?

During fall and winter, as the sun drops low in the sky, light comes in through windows or falls across landscaping at completely different angles than it does during the height of summer. Suddenly, workspaces are flooded with light, and employees are taping pieces of cardboard to the tops of their cubicle walls to shade themselves from the afternoon sun beaming through the windows.

The motivation to adjust doesn't stop there. There is also less daylight available altogether in the colder months. It's darker when you leave for work, and Daylight Saving may or may not compensate to brighten

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your morning. The change in natural light is not just less comfortable, it can also make you feel less secure. It's important to adjust artificial light to accommodate for the shorter days to optimize visibility and security, and making this possible means installing and managing lighting control devices and schedules.

Go for a walk... several, in fact

The best way to find out how to adjust lighting for seasonal change is via MBWA (Management by Walking Around). When it's a commercial space, watch people at work. Do they have lamps from home on their desks? Are they wearing sunglasses? Walk down the aisles in the afternoon. Are you blinded by glare? Go into the parking lot after sunset. Does it take a while for your eyes to adjust to being outside, or is it a smooth transition? Are there dark spots where cars are parked? Are stairways and walkways well lit?

Remember, people are going to be in those areas when it's dark at 4 pm, and the route could be covered in puddles, fallen leaves, snow or frost, or some combination thereof. Outdoor lighting triggered by motion detectors may be a good solution for these low-traffic, yet potentially treacherous, areas. (Granted, with many codes including hold-off, ex-



pect that a photocell likely also has a say in light level.)

For residential spaces, much of the same applies. Walk around and see what is and isn't well lit. Be sure to check at several different times of day.

Make it a habit to do regular visual checks to get a good reading on how daylight changes from season to season. Then, throughout the year, plan the lighting, shading and other changes so the home, office or facility is always comfortable, safe, inviting and energy-efficient.

Using everything to your advantage

Whether you're installing lighting from scratch or modifying an existing system, there are plenty of great options today for light sources, dimmers, sensors, controls and lighting management systems. The best of these should be easy to adjust from season to season, and allow you to continuously harvest daylight and maintain lighting at the right level—be it at home or at work.

And whether it's a residential or



▲ The best lighting control systems also model when a particular façade is going to be hit hardest, and automatically lower shading to prevent glare.

commercial setting, shading remains the best way to compensate for the lower angle of the sun without giving up the natural light and view that a permanent solution (like glazing) would eliminate. Today's lighting control systems can be programmed to automatically raise and lower window shades at sunrise and sunset, whatever the season.

The best systems also model when a particular façade is going to be hit hardest, and automatically lower shading to prevent glare. Dimmers and daylight harvesting working in concert with shading are the best compensation for seasonal time changes.

No matter what type of lighting is in use, you can source dimmers that work with traditional incandescent lighting, as well as CFLs and LEDs.

In commercial applications, even more benefits are possible by integrating your lighting systems with other building systems, such as HVAC.

After all, it's not just the light that changes from season to season. Why not integrate all systems and control them from one central system?

The technology has been available for decades. You simply have to understand and appreciate the dynamics of your space's lighting, then discuss it with the HVAC management team. If you're using software to control any building system, you're already on the path to controlling them all digitally—just don't forget the lights!

Becoming an unsung hero

The ultimate test of whether your lighting design and control strategy works—whatever the season—is whether anyone notices it. Spoiler alert: *they shouldn't*. Truly comfortable lighting should always be inconspicuous and seamless. Illumination and colour should be an even wash across the architectural plane.

In the building in which I work, there's not a single fixture running any higher than 77% of maximum output... *ever...* and that's before any high-end trim is applied, and *no one notices*. Sure, we sometimes have discussions over relative brightness, but digital lighting control systems are so well tuned that everyone can feel comfortable.

Many of us don't speak the language of lighting design, so it can be a challenge to articulate what we want to a lighting designer. But remember: we all know bad lighting when we see it.

Ever have trouble reading a restaurant's menu because the light is too dim? Annoying, right? Ever walk into a conference room and have your eyeglasses' transition lenses darken on you or, conversely, walk into someone's office where they don't have the overhead lights on because they simply find them too bright? Even when you don't know the terms, you can describe what's bothering you or your clients.

If you don't have the time to learn about lighting, or understand all of the control products and systems out there, bring in an expert who can guide you through the process. In fact, many lighting and control manufacturers offer on-demand training courses where you can learn in your own time, at your own pace. You might be surprised at the options available and how easy they are to design and install; how well those technologies integrate with existing systems, and how easy they are to program and use. **EB**

“Walk around and see what is and isn't well lit. Be sure to check at several different times of day.”

Jonathan Cartrette is an engineering manager with Legrand, with over 10 years of experience in the design, implementation and deployment of distributed intelligence systems. He joined Legrand in 2010 as part of the Wattstopper services team supporting the roll-out of its digital lighting management (DLM) platform. He was a product line manager for DLM, networking, and software before returning to his engineering roots in 2014 to lead a team of electrical and software engineers focused on commercializing next-gen technologies for use in intelligent electrical infrastructures.



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