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Playing with light

By David Litwak

Lighting design is becoming increasingly important to supermarket operators. But there are many operational factors to consider before flipping the switch.

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In recent years retail lighting design has become a sophisticated business that mixes art with some hardcore science. Lamps and fixtures are constantly being improved so that they use less energy, provide brighter lights and render colors better. At the same time, the aesthetic side of lighting design has progressed, and retailers are employing mood-creating lighting techniques to differentiate themselves from the competition.

Most supermarkets used to be a hodgepodge of different lighting sources--fluorescents, incandescents, spots--all coming together to assault both the shoppers and products. The industry has alternately gone through periods when the trend has been to flood the whole store with a constant, very high light level and periods when the predominant trend was to keep ambient lighting down and make heavy use of spotlighting to target specific products.

Today the trend is still to use a number of different light sources within the store. But instead of fighting each other they are balanced to complement each other and add to the merchandising appeal of the products. "Lighting designers look at the whole store as a single entity, not as a collection of individual departments that are fighting for attention," says Chrissy Blackmond, president of New York City-based CMB Design Associates. "When we approach a project, the goal is to see how each part of the store can enhance the whole, so we use the lighting in each to aid not only the merchandising of the products in that section, but to smooth the transition from one department to another."

It is not always easy to come to a decision on what is the best lighting to enhance product display and create the proper store ambience.

"Here's where the science of lighting takes precedence over the aesthetic qualities," says Thomas Hendrix, vice president of Minneapolis-based Engineered Light, Inc. "When it comes to lighting efficiency and effects of light of various sources on fresh food, then more properties than just the final look are important to consider."

Lighting design in supermarkets is often a series of compromises and tradeoffs. Because energy usage is a primary concern of most operators, it would be tempting to pick the most efficient low-wattage lamps to light the whole store, but that usually means losing some of the merchandising appeal of higher-density spotlights or the warmth that other lamps provide. Some lamps will give brighter light but will not allow the true color of the foods to show. This is a disaster in the meat department and a tragedy in the produce section when the beautiful colors are washed away by excessive light. The possibility that certain light sources will cause premature shrinkage in fresh products is another consideration for designers.

AVOIDING EXCESS

In addition to store lighting, retailers need to worry about case lighting when they're displaying fresh products. Both sources have to be balanced, but light can have different effects on different types of fresh products. Too much light on the meat case, for example, can not only cause drying and premature shrinkage, it will also cause discoloration, effectively decreasing the chances that a given package will be sold. Light can dry out and discolor produce, cause fresh cut flowers to start wilting and damage deli products. As much as proper lighting can enhance merchandising appeal, improper lighting can diminish it.

Lighting manufacturers are endeavoring to help safeguard perishable foods. For instance, **Promolux Lighting International** in Shawnigan Lake, B.C. has developed a Balanced Spectrum coating process for its lamps that the company claims will help extend the shelf life of fresh products by as much as 50%. The coating combines filters that dramatically lower ultraviolet, infra-red and visual spectrum radiation with high color rendering to improve the conditions for perishables.

"Most of what is happening today in supermarket lighting is taking advantage of developments in the lamp industry," says Ernie Watson, vice president-retail national accounts for Cincinnati-based LSI Industries. "A lot of the grocers are using the newer fluorescents like the T8 and the T5 because they are more energy-efficient, have a high color rendering index and produce a lot of light. The downside of that is if you have a very high ceiling there are diminishing returns with fluorescents; you don't get the punch. The other things that a lot of people are looking at are ceramic metal halide lamps."

According to Watson, lamp technology has come a long way, both in fluorescent and metal halide. The earlier versions of metal halide lamps were prone to burn with slightly different colorations, so one might be bluer while another was greener. The advent of ceramic metal halide lamps with pulse starters has eliminated this problem. Many retailers are using the lamps in both high and low bay fixtures. A trend is to decrease the wattage of the metal halide lamps to conserve energy. The newer 320-watt lamps are gaining popularity because, in the space of a full store, they consume considerably less electricity than the traditional 400-watt lamps.

Fairfield, N.J.-based Amerlux Lighting Solutions has developed a new line of T6 ceramic metal halide lamps called the Imperia. These compact low-voltage track luminaries utilize a miniature electronic ballast. There is a zoom spotlight available that incorporates two specially designed reflectors to give the lamp maximum flexibility.

RETROFIT PROBLEM

"The T5 is not for everyone. It's very glary," says Watson. "In fact, when these lamps first came out we found that we had to use baffles and a louver system to try and mute them a little." LSI has a new IMX fixture that is available for use with both T5 and Super T8 lamps. According to Watson, more retailers are still using T8 lamps, but the T5 usage is growing rapidly due to its energy efficiency and its ability to produce a brighter light with more lumens per watt. One problem with T5 lamps is that it is hard to use them when retrofitting a store with existing fixtures, because they were developed in Europe and their metric sizes don't readily fit into most American fixtures.

LED fixtures are also gaining a great deal of popularity as a means of highlighting products and adding emphasis and decor elements. LSI has the Bright Stripe LED accent strip that can be used anywhere in the store, and the company has just introduced the Flex Bright flexible LED strip that can be made into many different shapes to create design elements.

Track lighting has been a mainstay of the supermarket for many years. The Amerlux line of Downlights is available in T4, T6 and ED17 ceramic metal halide lamps with apertures ranging from four to six inches, square or round, and rectangular apertures. These fixtures can be used either to highlight a specific product group or as wall washers. Washing background walls with a sea of light is becoming a trend in many supermarkets, because it adds warmth to the decor as well as adding light.