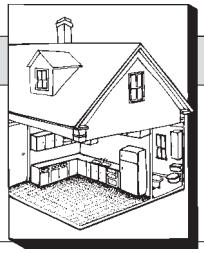

Revitalizing the Illuminated Ceiling

by Paul Turpin

When they're done right, illuminated kitchen ceilings create an evenly diffused wash of light that provides brightness and minimizes shadows. But when they are poorly designed, illuminated ceilings can make the kitchen dark and claustrophobic.

Most illuminated ceilings feature a soffit, either plaster or plywood, installed 7 feet from the finished flooring and in line with the countertops below, usually about 2 feet off the wall. I've found that the 7-foot ceiling, which allows only a 4-inch clearance above the tops of doors and windows, makes the kitchen feel crowded. At the same time, the countertops tend to be shadowy since there's no light directly over them.

Improper fluorescent lighting creates another set of problems. Illuminated ceilings are often underlit because the wrong types of lamps are used. And clients often associate fluorescent lighting with the buzzing, funny-colored lighting they see at the office.

We're now remodeling kitchens with illuminated ceilings in homes either remodeled or built from the 1960s on. We've discovered some tricks that can be used to keep the ceilings from looking drab and, in some cases, dated. We've also found a good electrician who knows the ins and outs of fluorescent lighting.

Custom Ceilings

The first step is to approach the design with some originality. For instance, the typical illuminated ceiling features 2x4-foot rectangular diffusers lined up side by side with the track set flush with the soffit. But both the T-bar track and the diffusers can be cut, providing all kinds of room for innovative ceiling patterns. The simplest option may be a running bond or other brick pattern (see Figure 1).

Painting the T-bar lets you work the track into the decorating scheme. Rust-Oleum produces a low-gloss black spray paint (for refinishing barbecue kettles) that contrasts nicely with the diffusers. I also use the paint on light fixtures which are in good shape but are the wrong color.

Reducing the amount of exposed soffit minimizes shadows at the tops of the wall cabinets and brings more light to the counters below. At the same time, setting the T-bar assembly slightly higher with a small crown molding or other trim creates the illusion of a recessed ceiling. While the net gain may be only 2 or 3 inches, this gives the room added interest and helps diminish that cave-like feeling.

Quiet Light

Fluorescent fixtures require a ballast to convert standard line voltage (108 to 120 volts) to the low-amperage, high-voltage current necessary to excite the gases in the lamp. If the ballast output is unbalanced because one of the lamps in the fixture is going bad, it will hum. In commercial applications this isn't a problem because there's usually enough background noise to blanket the buzz. But in the relative quiet of a home, that buzz becomes a major distraction.

Another source of noise is mechanical. Since the ballast vibrates, a loose mounting screw can rattle the ballast against the fixture chassis. This can be reduced by putting a 1/8-inch rubber gasket between the ballast and the chassis.

Yet even a properly installed ballast may hum due to the 60-hertz cycle of standard household current. There are two possible solutions to this. One is to mount the ballast away from the fixture in an accessible adjacent area, such as the attic. A second option is to use an electronic ballast. These typically run four to five times the cost of standard ballasts, but they are completely quiet. They also save energy because they run cooler.

Light Color

Lighting with poor color is especially unappetizing in the kitchen. I've found the color temperature of the lamp, measured in kelvins (K), to be the single most important factor in deciding how customers feel about fluorescents. I've gotten more favorable responses just by replacing cool, blue-toned lamps (4,100K and up) with warm, red-toned lamps (3,100K or less). Warm light is closer to incandescent light, which people are accustomed to. It also accents flesh and wood tones.

Cool color tones do work in decorating schemes that are strongly blue/gray/black. But if incandescent lighting, which is red-toned, is used in the same room, it will clash with the blue-toned lamps.

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The *color rendition index* (CRI) measures the amount of color distortion a lamp will produce. A CRI of 100 is most desirable since it means no color distortion. Each of the major lighting manufacturers have different names for their high CRI lamps. This makes it difficult to know what to buy unless your supplier carries a brand you're familiar with. I've found that if you ask for a triphosphor lamp, you'll get something with a good CRI.

Keep It Bright

Eliminating noise and installing lamps with the correct color won't help a bit if you don't provide enough brightness. The Illuminating Engineering Society of North America (345 East 47th St., New York, NY 10017, 212/705-7926) publishes a series of manuals that contain the technical information and formulas to analyze any lighting situation. A good, quick guide is to provide a minimum of 88 watts of fluorescent lighting (roughly equivalent to 220 watts of incandescent lighting) per 100 square feet. That should be tripled in areas where bright lighting is needed.

Here are some other things to keep in mind:

Output. The light output, or lumens, of a lamp will drop as the lamp ages. Also, the actual light in the room will be affected by reflected or indirect lighting, as well as by the distance between the lamp and the illuminated objects.

Diffusers. Use translucent white acrylic diffusers. Styrene yellows over time with exposure to light. Prismatic diffusers allow more light to pass, but the outlines of the tubes show through. (Some customers want the maximum amount of light and don't care about seeing the tubes.) Be careful about raising the level of the diffusers. As they move closer to the tubes, you're likely to see the outline of the lamps — even through the white acrylic diffusers.

If you do use the acrylic diffusers, don't use anything over 1/8 inch thick. Light transmission drops about 10% per 1/32 of an inch.

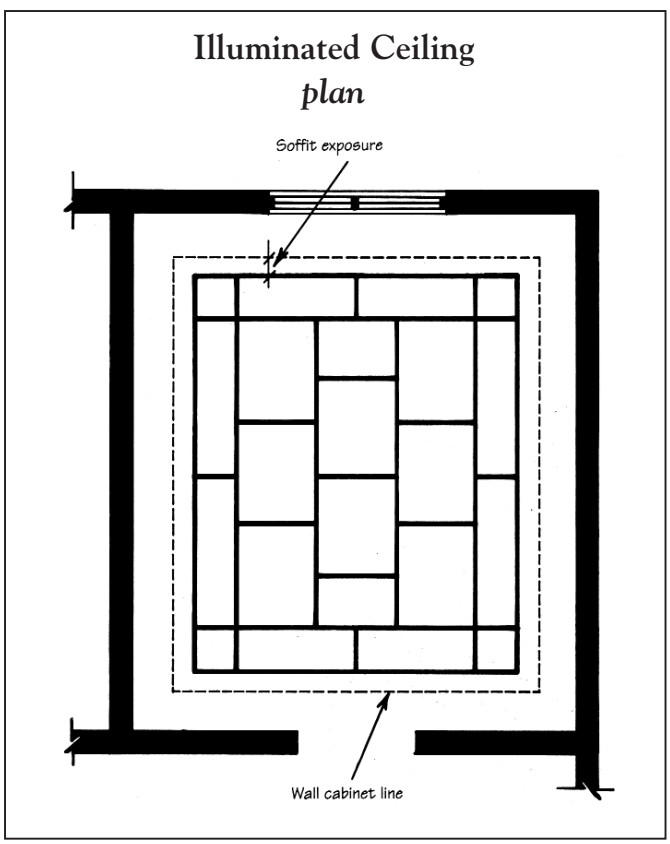

Figure 1. *To avoid a monotonous grid on an illuminated ceiling, try staggering the rectangular diffusers as shown.*

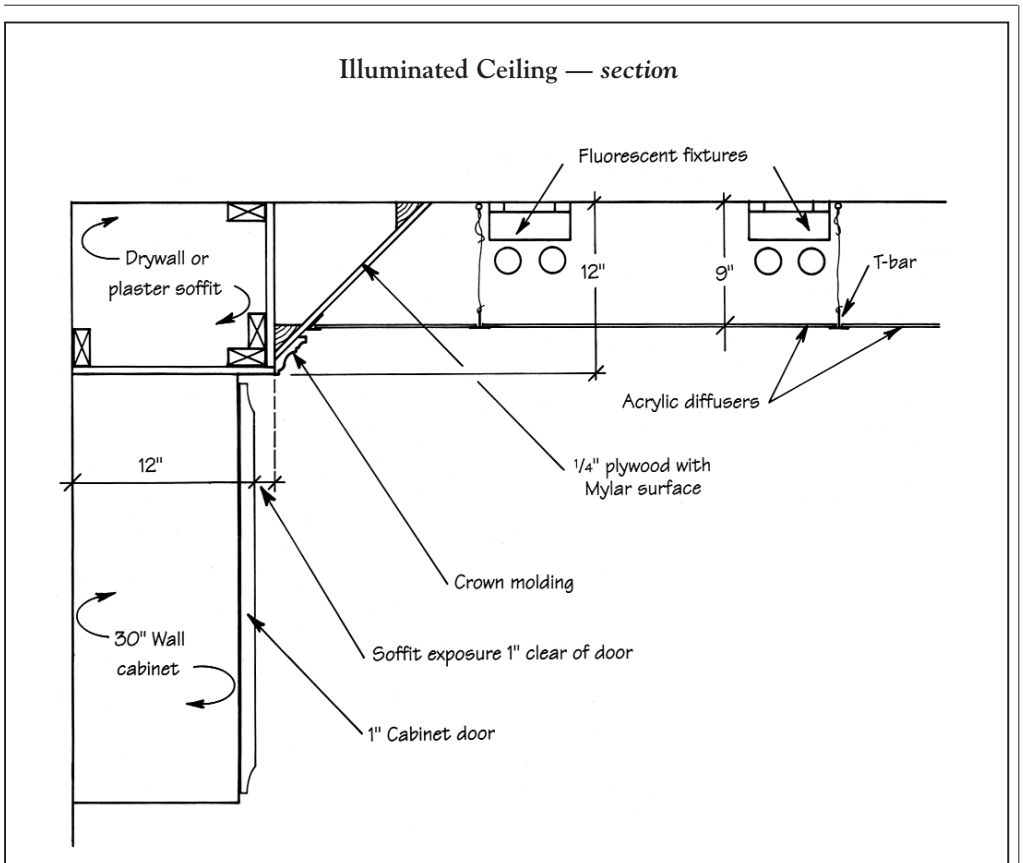

Figure 2. *To get better illumination in cabinets and over countertops, minimize the soffit exposure and use an angled mylar-covered reflector above the diffusers. The reflectors avoid dark spots above the edges of the ceiling.*

Reflectivity. Increase the reflection in the ceiling cavity above the diffusers by adding an angled panel coated with Mylar (Figure 2). I generally use a substrate of 1/4-inch plywood or drywall and "wallpaper" it with Mylar. (I buy the Mylar from an art supply house or a plastics supplier.) The panel is installed along the length of the soffit, parallel to the fixtures. The bigger the reflecting area the more dark spots will be minimized. But stay clear of the fixtures to avoid possible fire.

You can also cover the ceiling between the fixtures with Mylar to help bounce as much light as possible down through the panels. Or coat the ceiling with high-gloss white paint, which is considered to be about 80% reflective.

Dimmers. Fluorescent lamps can be dimmed but that requires special ballasts and dimmer switches. A simple alternative is to put half the fixtures on one switch and the other half on a second switch. Doing so allows basic light levels for quick trips into the kitchen for a glass of milk and also provides high light levels for preparing gourmet dinners. ■

Paul Turpin is a Los Angeles remodeling contractor who specializes in kitchen and bath design and remodeling.