

Lighting On A Modest Budget

by Gordon Tully

Like a good meal, good lighting depends as much on what you don't include as what you do. Using good sense and avoiding the temptation to overdramatize can reduce the cost of the fixtures, installation, switching, and operation.

Lighting Options

Suppose you have a limited budget for lighting: How should you spend it to your best advantage? The first step is to categorize the available options: **1. Direct lights** are surface-mounted on the ceiling and wall, or hanging (pendant) lights. Whether left bare or shrouded with diffusing globes or lenses, these lamps are the cheapest and most efficient kind of light. (By efficient, I mean they produce the most usable light per watt.) On the down side, they also produce the most glare and, because they broadcast light, they reduce the shadows that produce drama and mystery. Making the bulb or globe larger reduces the glare, but also the drama.

Surface-mounted lights can be converted into recessed or indirect lights by mounting them underneath or behind architectural features. Undercounter lights and built-in

cove lights are two examples — in effect, the woodwork becomes the light fixture. When you do this, be careful to keep incandescent bulbs away from wood by several inches: the codes are not very explicit on this matter, except for prohibiting incandescent lights in closets. Also, watch the cost of the woodwork: Usually it is cheaper to buy a fixture than to build your own.

2. Direct/diffuse/indirect combination lights. The classic example is an ordinary table lamp, which casts direct light downward for reading, bounces indirect light off the ceiling for general room lighting, and diffuses light sideways through the shade for "coziness" (a table lamp with a solid metal shade would look hostile and glaring). Some wall sconces also produce combinations of direct and indirect light.

3. Downlights. A recessed downlight creates drama because it shines down from a small hole, leaving the ceiling dark while creating pools of light on horizontal surfaces and people. While incandescent downlights are very inefficient (you need many watts to achieve a given level of light), those with compact fluorescent lamps reduce energy use considerably and cast a warm

light that looks much like that from an incandescent source. Their main drawback is that they are expensive to install.

4. Accent lights are usually a type of downlight with an adjustable, often shielded light source that is directed to a small area. With low-voltage bulbs, they can be focused in a crisp rectangle to light a painting. Track-mounted accent lights cut installation cost and add flexibility, but they look too industrial in many contexts.

5. Indirect lights are inefficient, so you can't count on them to provide reading and working light, only general background lighting. Typical examples are upward-directed floor lamps and wall sconces and recessed cove lighting, which can be very expensive. Be careful not to locate indirect lights where you can look down at the source! I will talk more about this option below.

Good lighting on a limited budget requires tradeoffs. Simple, surface-mounted lights are efficient and cheap, but lack drama. Dramatic downlights and accent lights are inefficient and cost a lot.

A Tour Through the House

Let's begin our functional tour through a typical house. It helps to think about lighting each functional area and situation, rather than lighting rooms.

Front door. Outside entry doors need friendly lighting. I prefer downlights to traditional wall sconces, because they don't glare at you as you approach. A bare bulb is fine if you can't see it from the side. Avoid fluorescents outdoors in cold climates, because they won't work there.

Corridors, halls, and passageways. In a small house, most of the "corridors" are actually just traffic avenues within the boundaries of another space, such as along the edge of a room. They all need lighting, switched in a chain of three-way and four-way circuits so you can walk through the house without retracing your steps to turn off lights (see Figure 1). If the corridor is within another space, you can use some of the lights within the space as corridor lights by switching them properly (for example, link an

outlet for a table lamp in the living room to three-way switching at each door into the room).

The ideal lights for corridors of all sorts are downlights (you don't need many), wall sconces, or table lamps shining up or down. Avoid bright sources that glare, especially in narrow halls.

Reading and close work. Wherever someone might read, you need good lighting. I like to light rooms so that they can be left relatively dark, but supply outlets for bright table or floor lamps at reading stations — at either end of a likely couch site, for instance.

Downlights don't work well for reading, because your head casts a shadow on the book, and you can't adjust the lamp to reduce glare on the page. Indirect lighting is too weak, especially for those with poor vision. Desk lights should have adjustable arms.

Formal dining. In formal eating spaces, lighting needs to be decorative and dramatic, enhancing the entire space, but with a focus on the table. Incandescent chandeliers and wall sconces are traditional, while downlights are modern and theatrical; all should be on dimmers. Don't forget that candles, when supplemented by soft background lighting, are a good source of indirect light.

Dining in the kitchen. Drama is appropriate, with the focus on the table. Since the surroundings are likely to be distracting, the other lights in the room should be on separate switches or dimmers, so the room can be "edited" out of view. A pendant light that casts most of its light onto the table is a good choice.

General office. If you're building a space that might be used as an office or study, consider installing a standard 2x4-foot fluorescent ceiling fixture, preferably one with a parabolic louver, which cuts glare. The recessed variety is cheaper.

Kitchens. As noted in "A Practical Guide to Kitchen Lighting" (5/92), the kitchen requires general room light, supplemented by task lights under the upper cabinets and over the sink and stove. One economical solution if the ceiling is 8 feet or higher is to hang a row of diffuse

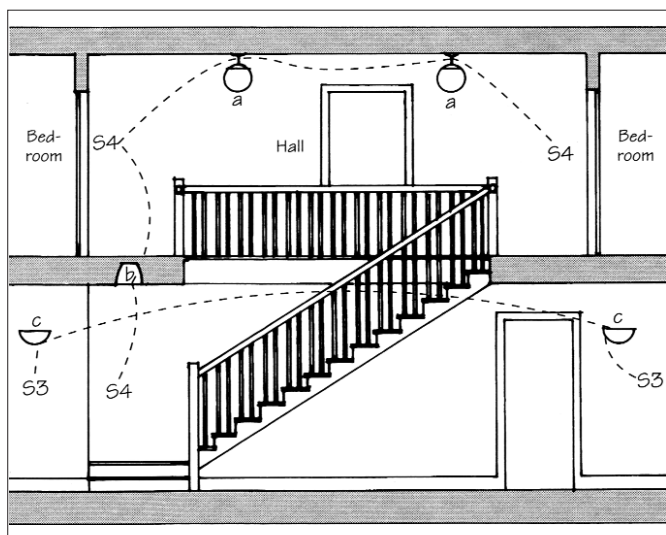


Figure 1. Halls and stairways require plentiful non-glare lighting. Good options include pendant globes (a), downlights (b), and, for hallways, sconces (c). All stair and passage lights should be on three-way or four-way switches so you can control them from any end of the passage. Here, the downlight is switched with upstairs hall lights; this requires four-way switching.

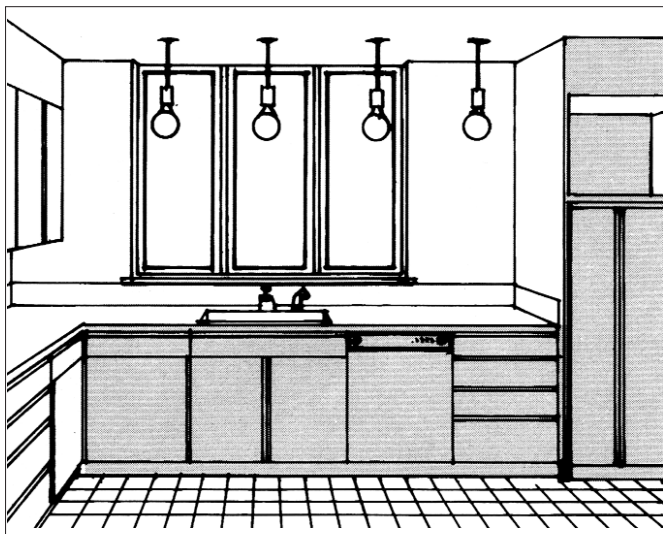


Figure 2. The bright light needed in kitchens makes direct lighting a near must. One of the author's favorite solutions for high-ceiling kitchens is a row of pendant diffuse globes over a work counter; these give good direct light on the counter beneath while providing indirect light for the rest of the room. This arrangement looks good and is inexpensive.

globes from the ceiling over a counter (see Figure 2). This gives excellent work light and also lights the room. I often use downlights in the kitchens I design, but I don't like them as much as my clients do.

Bathrooms. Here is one place you need direct, somewhat glaring lighting, to light your face without shadows. All bathroom fixtures are ugly. I personally like a strip fluorescent over the mirrors better than theater-type bulb strips on the sides or top, but many people insist on incandescent lamps to ensure good color rendition.

I also like a good ceiling light strong enough to provide reading light at both the toilet and tub. You need a light in the shower for safety.

Storage. Closet lights are important, especially if the room outside doesn't have a light near the closet. Undercounter fluorescents serve well, but their typical turn-switches don't work.

Instead, install a pull-chain switch, or tie the fixtures into a door switch or ordinary wall switch. (The wall switch should be on the outside of the closet, and, if the closet is light-tight, should have an indicator light to show when the lights are on.)

Stairs. Stairs are difficult to light well. You need enough general light to make the stairs safe, but you should avoid lights that glare in your eyes as you climb or descend. Avoid indirect lights if you can look down into their hidden works. And work out switching that guarantees good light going up and going down (often four-way switching will be needed). Downlights or pendant lights often work best.

Basements, attics, and garages. In utility spaces that stay at 50°F or above, I use two-tube fluorescent strip lights. If you are concerned about breaking the bare tubes, buy fixtures with wrap-around acrylic lenses. In cold

spaces, bare-bulb incandescents are a cost-effective choice — use plenty of them. Switch either type of fixture individually with pull-chains at work stations and with wall switches in general areas.

Beyond the basics. Once you have accounted for all these needs, you will have lit the house properly, and you will have probably used up your lighting budget. If you have funds to go further, there is no end to the fun you can have. My favorite extravagance is built-in cove lighting. While you can buy strips that take incandescent T-10 lights, I usually install socket strips for ordinary incandescent A-lamps. Fluorescents are ideal for cove lighting, but you either have to accept the ballast hum or install remote ballasts (which is expensive), and you get a fall-off in the light at the ends of the tubes.

Low-voltage lighting can be run in strings around arches or along moldings and can light the inside of display cases. These are expensive, and you must exercise restraint to avoid making the house look like a shopping mall. Low-voltage accent lights can light artwork or fancy woodwork.

One common way architects and their clients spend money on lighting is to pepper the ceiling with downlights and "wall-waders" (accent lights). I do it when asked, insisting on fluorescent lamps whenever I can. Incandescent downlight arrays are a fine way to heat your building electrically, which is not such a swift idea in the summer.

It is astonishing how little light you really need when you use a few well-placed, efficient light sources. Be kind to both your budget and the environment by keeping the lighting simple and efficient. ■

Gordon Tully is an architect practicing in Cambridge, Mass.