

Tips for Lighting Interior Wall Surfaces

by Craig DiLouie

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Taking a tour of Lightolier's new TechCenter, the group soon finds itself in the "Effects Hall." Markus Earley, manager of the TechCenter and its resident instructor, uses this space to demonstrate the effects of different light sources on various vertical surface textures.

Earley, formerly working with H.M. Brandston & Partners and as an adjunct assistant professor at Pratt Institute, was the first recipient of the IESNA's Richard Kelly Memorial Award in 1985. He later received a 1996 IESNA IIDA/EPRI Award for the lighting design of Lightolier's corporate headquarters.

"Walls are an essential element in the design of interior spaces," said Earley. "They are the broad brush strokes of the interior design composition and are central to interior space planning. Functionally, walls form volumes, offer privacy or security, and provide surfaces on which objects can be stored or displayed. Aesthetically, they entertain the eyes and influence our moods with their color, material, texture and shape."

Of course, "beauty is how you light it." Earley added that the perceived brightness of wall finishes is key to visual comfort, making proper lighting essential. Most important is the wall finish itself -- lighter-colored finishes appear brighter and are therefore more comfortable, which is why most walls have reflectance values of 50-80 percent.

Earley offered a methodology for lighting these surfaces. The first step, he pointed out, is to decide which walls to light:

- Evaluate the design scheme and identify the types of walls proposed and how they might be used in the lighting scheme.
- Take an imaginary walk through the floorplan, picturing a "visual itinerary" through the spaces as if you were an occupant.
- Pay particular attention to what materials and colors are used on the walls. Are there walls that have signage or pin-up surfaces? Will there be art? What walls bounce light onto adjacent worksurfaces?
- Based on the above, we can develop a hierarchy of walls, each with its own relative importance in the lighting scheme.

Using this information, said Earley, the next step is to decide how to light the selected walls following these guidelines:

- Ask the right questions. Why are we lighting this wall? To see it from a distance? To view art? To accentuate the surface texture? What should the occupant see? An even wash of light, or aesthetically placed pools of brightness on the surface? The answers will affect the technique used.
- Analyze the surrounding environment for clues as to what light source and fixture to use. For example, the proportions of a space and the construction materials will dictate available mounting locations, which in turn will influence how the wall can be lighted.
- Consider all other issues such as watts per sq. ft. limits, maintenance, and fixture and construction costs.

"There are many factors to consider when attempting to light a wall," said Earley. "The good news is that given the thought process and the myriad of light sources and fixtures available for lighting walls, there are only a few basic techniques that the designer needs to understand to put the equipment to work."

Below are three techniques for lighting vertical surfaces: indirect wall lighting, frontal wall lighting and grazing wall lighting. To show the effects of these approaches, we see them lighting three different light-colored surfaces from the TechCenter's "Effects Hall": fabric wall covering, stucco plaster and brick face.

Figure 1. Three techniques for lighting vertical surfaces: indirect wall lighting, frontal wall lighting and grazing wall lighting. Courtesy: Architectural Lighting Magazine and Lightolier

LIGHTING TECHNIQUE:	INDIRECT WALL LIGHTING (mounted at ceiling plane 6" to 72" from wall)	FRONTAL WALL LIGHTING (mounted at ceiling plane 6" to 48" from wall)	GRAZING WALL LIGHTING (mounted above ceiling plane 6" to 18" from wall)
Description of visual effect:	<ul style="list-style-type: none"> • Soft ambient wash of light • Very uniform and diffuse • Washes out textures, low contrast • Hides imperfect surfaces 	<ul style="list-style-type: none"> • Soft to crisp-edge wash of light • Fairly uniform, brightest at top of wall • Reveals textures, medium contrast • Hides imperfect surfaces 	<ul style="list-style-type: none"> • Hard-edge wash of light • Least uniform, brightest at top of wall • Reveals textures, high contrast • Exaggerates imperfect surfaces
Types of fixtures available to make effect:	<ul style="list-style-type: none"> • Strip lights in upright architectural cove • Linear indirect cove fixture (concealed lamp) 	<ul style="list-style-type: none"> • Unit wall washers (round, square, or rectangular; open aperture or lensed) • Linear wall washers (direct lamp) 	<ul style="list-style-type: none"> • Linear slot wall washers • Socket strip in architectural slot • Track lights in architectural slot
Typical mounting methods:	<ul style="list-style-type: none"> • Built-in or prefabricated architectural cove, recessed 	<ul style="list-style-type: none"> • Recessed, semi-recessed, surface, track 	<ul style="list-style-type: none"> • Built-in or prefabricated architectural cove, recessed
Most likely sources used to create effect:	<ul style="list-style-type: none"> • Fluorescent • Compact Fluorescent • Line or low voltage Incandescent strip (general distribution lamp) 	<ul style="list-style-type: none"> • Compact Fluorescent • Incandescent, halogen • Metal Halide (general distribution or directional lamp) 	<ul style="list-style-type: none"> • Incandescent, halogen • Metal Halide (directional lamp)
Recommended for:	<ul style="list-style-type: none"> • Smooth, matte to semi-gloss surfaces 	<ul style="list-style-type: none"> • Smooth, matte surfaces • Textured, matte to semigloss surfaces 	<ul style="list-style-type: none"> • Glossy surfaces, minimal reflected view of sources • Textured surfaces
Not recommended for:	<ul style="list-style-type: none"> • Revealing textured surfaces 	<ul style="list-style-type: none"> • Glossy surfaces, reflection of sources can be "glarey" 	<ul style="list-style-type: none"> • Smooth surfaces with imperfections
Other remarks:	<ul style="list-style-type: none"> • Can be used to bounce light onto adjacent work surface 	<ul style="list-style-type: none"> • Can be used to bounce light onto adjacent work surface 	<ul style="list-style-type: none"> • Horizontal plane directly below wall will have high illuminance

Visual effect on FABRIC WALL COVERING:



Visual effect on

**STUCCO
PLASTER:**



**Visual effect on
BRICK FACE:**



**LIGHTING
TECHNIQUE:**

INDIRECT WALL LIGHTING
(mounted at ceiling
plane 6" to 72" from wall)

FRONTAL WALL LIGHTING
(mounted at ceiling
plane 6" to 48" from wall)

GRAZING WALL LIGHTING
(mounted above ceiling
plane 6" to 18" from wall)