

Exterior

Exterior luminaires include large-area flood and small-area, landscape, and accent luminaires. They illuminate building facades, pathways, and landscapes and can provide lighting for safety, security, and decoration. Exterior lighting also extends the hours that residents can enjoy their outdoor living spaces. Exterior luminaires are most effective in a design if they are considered along with the form and materials of the building, plantings, and other landscape features. Purchase them at lighting stores, electrical suppliers, and building supply stores.

Incandescent, fluorescent, and high-intensity discharge lamps can be used in exterior luminaires. Exterior luminaires are available in many styles and may be mounted on posts, bollards, the building, or on or in the ground.

Energy and Lamps

If incandescent lamps are used, select reflector lamps of the highest efficacy and lowest wattage possible for the desired illuminance, and of the appropriate beam spread. Fluorescent lamps may be appropriate energy-efficient lamps for exterior use in warm-to-moderate climates. High-intensity discharge lamps such as high-pressure sodium and metal halide lamps may be appropriate energy-efficient lamps for exterior use, especially for long hours of operation, for large areas, and for security lighting.

Installation

To extend the view from the interior to exterior, the light must be balanced on both sides of the windows. If the light is much brighter on the inside than the outside, the view is diminished. Exterior night-time scenes are best viewed from interiors with low levels of ambient light. Exterior lighting should never be aimed directly at windows. To avoid direct glare, choose luminaires in which the lamp is properly shielded from view. Aim the light only on the objects or areas to be viewed. Stray light is wasted and interferes with seeing the stars!

Follow the National Electrical Manufacturers Association's guidelines and the National Electrical Code and local code requirements.

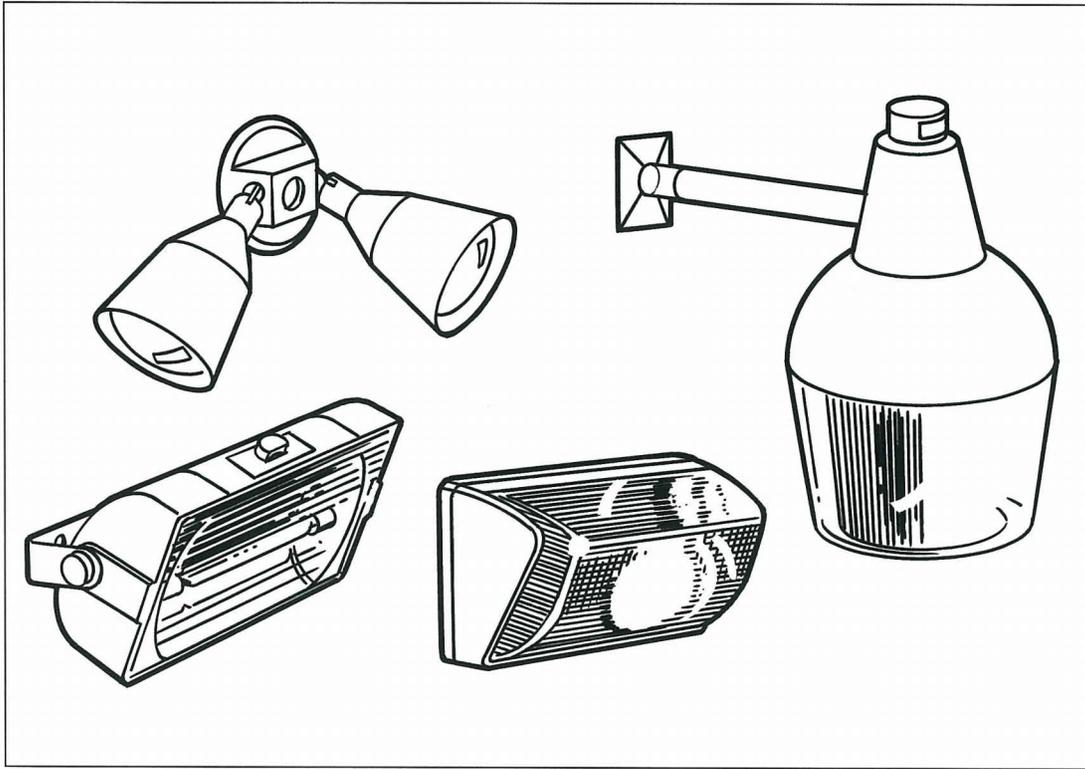
Controls

Use timers, motion detectors, remote controls, and photocells to reduce waste.

Cautions

Exterior luminaires must be weatherproof, and the housings should be Underwriters Laboratories listed for either "wet location" (fully exposed to weather) or for "damp location" (sheltered areas such as enclosed porches). Fluorescent lamps may not start well in cold weather. Check manufacturers' recommendations for starting temperatures. Avoid light trespass: light that strays onto a neighbor's property may be annoying and illegal. Shadows can be an advantage as well as a disadvantage: they can create dramatic effects, but they provide areas where intruders may pass undetected.

Exterior: Large-Area Floodlights



Lighting of large areas such as building facades, driveways, pools, and decks may be accomplished in a variety of ways. One technique floods the area with a low level and uniform distribution of light. Floodlights typically have one or two lamps mounted in a simple housing. Some floodlights protect the lamps and alter the light distribution with a glass or plastic lens or diffuser.

Energy and Lamps

Replace incandescent PAR-lamps with halogen PAR-, IR PAR-, or compact fluorescent reflector lamps. The compact fluorescent reflector lamps are best applied where lower light outputs are acceptable and the weather is not excessively cold. Luminaires that are designed to incorporate compact fluorescent lamps are also available. Use high-pressure sodium lamps only if color in the landscape is not critical; these lamps produce a yellowish-white light. Metal halide lamps are also efficient and long-lasting. Inexpensive luminaires that contain mercury vapor lamps are commonly available, but they are less efficient than luminaires that use high-pressure sodium or metal halide lamps.

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Installation

Avoid direct glare by carefully adjusting the angle of proximity and the distance from residents.

The simplest installation is to mount the luminaire on a pole or on the eave or side of the building. Increasing the mounting height of the luminaire increases the area that will be lit, but lowers the illuminance over the area. Higher mounting heights often make replacing the lamps more difficult. Floodlight luminaires throw light in a fairly symmetrical and uniform distribution over a large area. Refer to manufacturers' data for mounting heights and distance of throw.

Controls

Use luminaires with an integrated photocell for lamps that are operated all night. When floodlighting is used for security, consider using motion detectors that switch lamps on only when motion is sensed.

Cautions

High-intensity discharge lamps take several minutes to come to full brightness and do not restart immediately after they are turned off. Avoid using high-intensity discharge lamps with motion detectors or where light is needed quickly or will be turned on and off frequently. Also avoid using poorly shielded luminaires that contain HID lamps in areas where glare would pose problems for residents.

For more information refer to

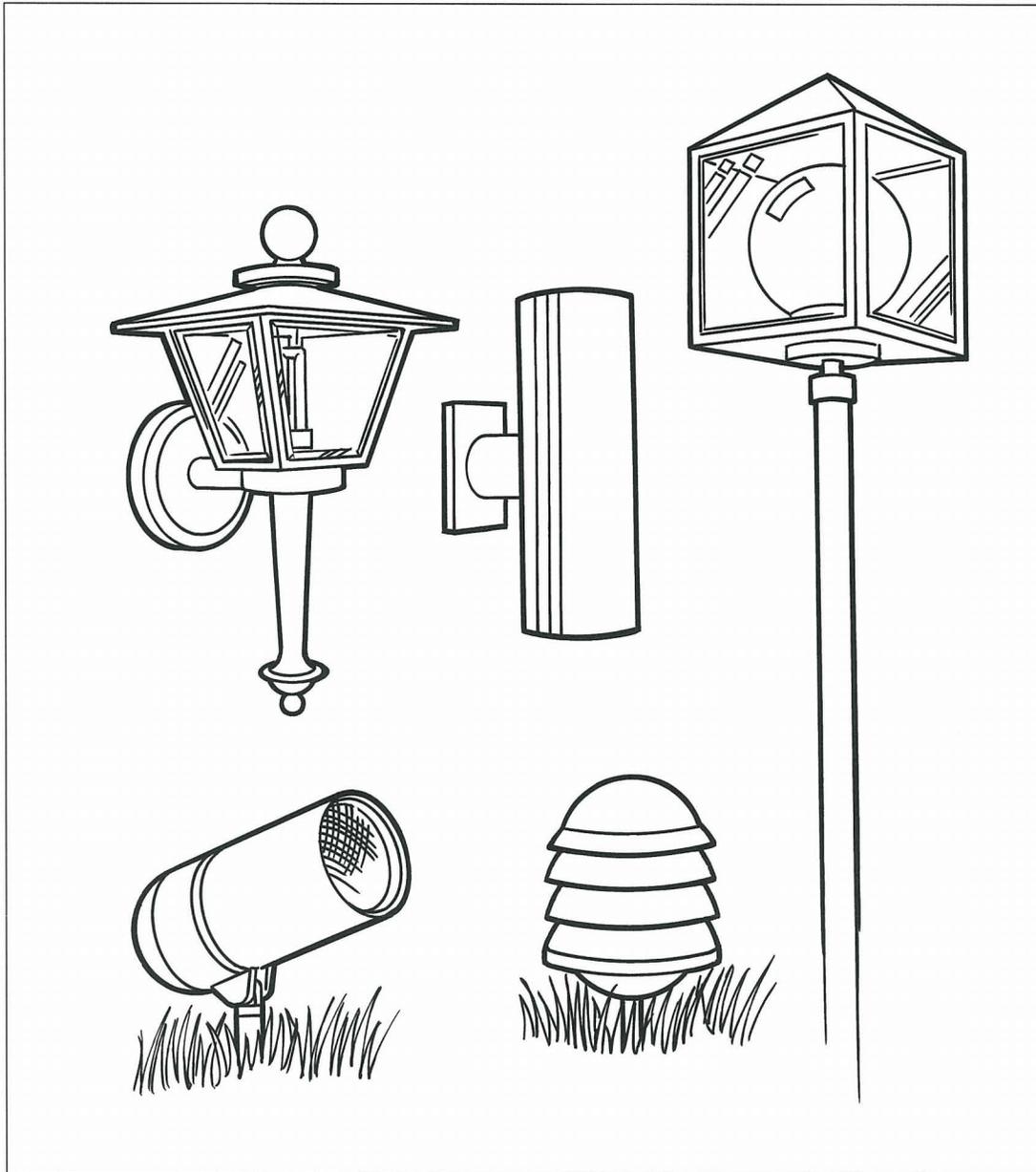
Techniques: Ambient, Special Purposes

Lamps: Halogen A, Reflector, Linear Fluorescent, Compact Fluorescent, High-Intensity Discharge

Designs: Floodlights

Other luminaires: Small-Area, Landscape, and Accent

Exterior: Small-Area, Landscape, and Accent



Accent lighting is used to define or emphasize an area or objects of special interest, such as entries and porches, fountains, pools, sculpture, trees, and plantings. Small-area lighting also allows residents to perform tasks such as finding the key at an entry.

Energy and Lamps

Consider the use of fluorescent lamps for moderate climates. Low-voltage and solar-powered systems can be installed for landscape or walk lighting; they do not require a building permit for underground installations. In luminaires that are powered by integral photovoltaic cells, the sun charges a battery for night-time use. These luminaires can be particularly useful where power is not readily available. If a large area of the landscape must be lit for many hours, consider using luminaires that contain mercury vapor, metal halide, or high-pressure sodium lamps, but note that the color characteristics of some of these lamps may not be acceptable to some residents.

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Installation

Lighting a small area such as an entry or porch allows guests safe passage and intruders to be easily identified. To light objects, use spot lighting with luminaires designed for a narrow beam distribution. Shield the lamps from view and conceal them with shrubbery if mounted on the ground. Use spread-lighting luminaires to create circular patterns of light for illuminating ground cover, low plantings, walkways, and pathways. Spread luminaires are fully shielded on the top and direct all light downwards.

Controls

Consider the use of timers to control exterior lighting that is used on a regular schedule. Use motion detectors to illuminate areas only when people approach. Photocells can be used to turn off exterior luminaires automatically during daylight.

For more information refer to

Techniques: Ambient, Wall Washing, Accent, Special Purposes

Lamps: Halogen A, Reflector, Linear Fluorescent, Compact Fluorescent, High-Intensity Discharge

Designs: Entries, Pole-Mounted Light

Other luminaires: Ceiling-Mounted Diffusers, Suspended Downlights, Suspended Uplight/Downlights, Downlights, Recessed Wall Wash, Recessed Accent, Recessed Wall-Mounted Sconces or Diffusers, Large-Area Floodlights