DESIGN GUIDELINES

for LANDMARK LIGHTING

DENVER LANDMARK PRESERVATION COMMISSION
& PLANNING AND DEVELOPMENT OFFICE

CITY *and* COUNTY *of* DENVER

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INTRODUCTION

Exterior night lighting is an important consideration for the Denver Landmark Preservation Commission. The purpose of these guidelines is to help the Commission in conducting its review and in granting its approval of landmark alterations and additions having to do with exterior night lighting. These guidelines are a supplement to the Design Guidelines for Landmark Structures and Districts, City and County of Denver, March 1995.

From the 1995 Guidelines:

> The guidelines reflect the Landmark Preservation Commission's philosophy that underlies all its decisions: to encourage the preservation and careful treatment of the city's most valued structures and districts, while recognizing the need for contemporary, economic use of these structures. The guidelines can neither dictate taste nor assure good design. Rather, they are intended to be a means for balancing the historic qualities of these structures with the demands of contemporary use.

The addition of new lighting or alteration of existing lighting can have a significant effect on the character and quality of historic buildings and sites. These guidelines add to and complement the larger 1995 document giving guidance to the Commission and to applicants for sometimes difficult design decisions. What is wanted is careful consideration of the functional requirements for exterior lighting, then thoughtful design to obtain these goals.

The concept of integrity that underlies design review policy for the Commission applies to lighting as well as to other alterations or additions to historic properties. Landmarks show their integrity if their physical elements clearly express their time and place in Denver's history. The key question that must be asked of applicants by the Commission is whether the alteration or addition of lighting for Denver Landmarks enhances or diminishes integrity. The goal of these guidelines is to articulate the ways and means by which integrity is maintained and also to encourage design that is fully expressive of the good life of contemporary Denver.

Union Station Welcome Arch, now demolished. View up 17th Street by L. C. McClure. Courtesy Denver Public Library, Western History Department.

The Welcome Arch at night. Courtesy Denver Public Library, Western History Department.

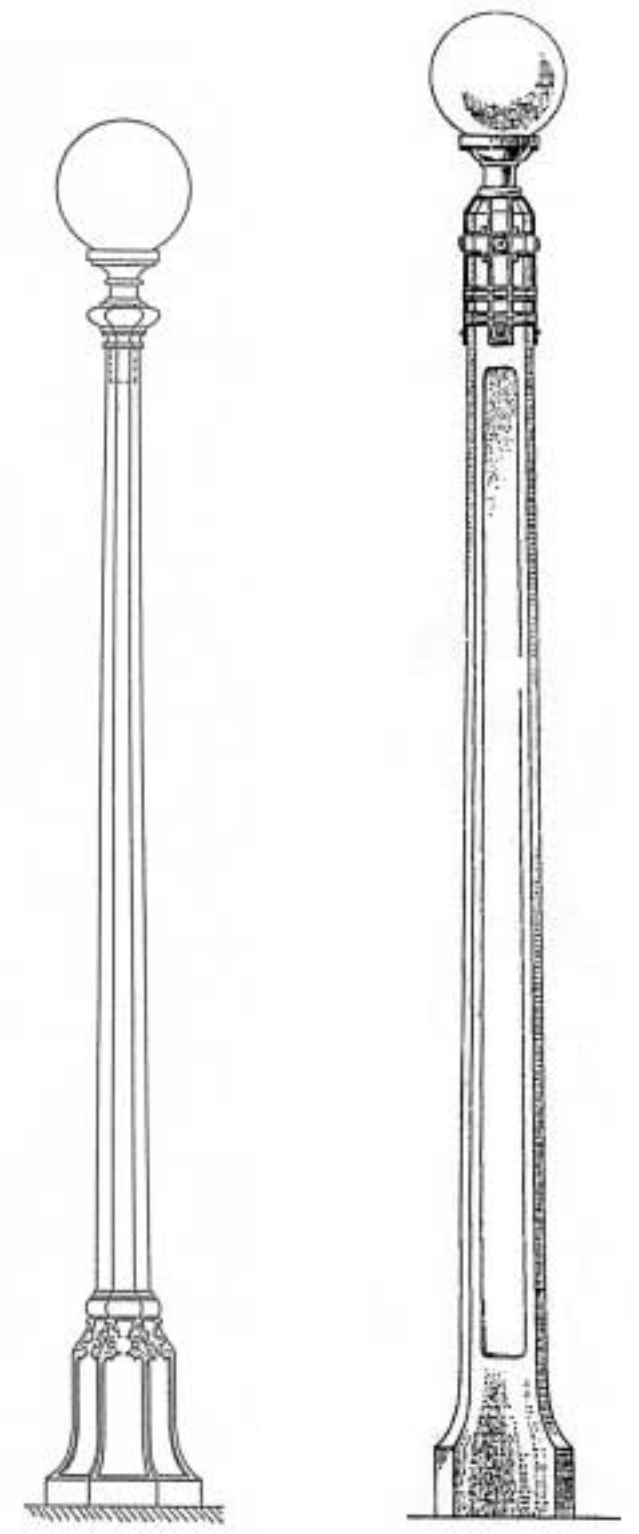
HISTORIC LIGHTING IN DENVER

Electric lighting: the city of lights

Electricity for Denver lighting was first available in 1880. Before that time streets were dimly lit with gas. In 1882 a high tower with three electric arc lights at the top was erected at 18th Avenue and Grant Street, Denver's first electric lighting for streets. This initial tower was quickly followed by five additional towers which would serve as Denver's means of public lighting for the next twenty years.

In 1904 Mayor Speer was inspired by his visit to Paris, the city of stars, to suggest to the Arts Commission that plans be drawn for Denver's public lights. In 1906 the Welcome Arch at Union Station was erected, the first project from these plans. In 1908, 16th Street, due to its retail importance, was the first of the main thoroughfares to receive incandescent street lighting. Shortly thereafter, 15th Street and 18th Street were each provided with their own fixture design. Seventeenth Street and 19th Street were fitted with distinctive fixtures in 1909. The lights for each street were unique, of elegant design, and Denverites took just pride in the lighting for the city. By the end of 1909 Denver was known as the "City of Lights."

View down 17th Street toward Union Station, ca. 1911. Courtesy Denver Public Library, Western History Department.



Speer Boulevard light, left, and 17th Avenue Parkway light, right. Courtesy Denver Public Library, Western History Department.

The Arts Commission designed a fixture for Speer Boulevard, and a variation of this pole light was placed on the 20th and 14th Street Viaducts as well. The Speer Boulevard fixture was also used in Denver public parks, and was installed along the Marion Street Parkway and the Esplanade from Colfax Avenue to City Park. One especially attractive fixture by the Arts Commission, a base of cast concrete supporting a white globe fixture resting in a beautifully designed cast-bronze support bracket, was installed in the 17th Avenue Parkway.

Other streets that received special lighting included Larimer Street and Welton Street. Fixtures on both streets were ornamented with a decorative metal bracket attached to the existing tramway poles. Additional special city lighting features included an archway at 17th and Tremont Parkway, and one at Broadway and 1st Avenue. Elegant iron pole fixtures were placed throughout Civic Center Park. It became common practice at the time to mark the corners of bridges crossing Cherry Creek with decorative pier lights.

Denver Municipal Facts proudly featured Denver lighting. Courtesy Denver Public LIbrary, Western History Department.

The 1908 16th Street light. Detail from a photo by L.C. McClure. Courtesy Denver Public Library, Western History Department.

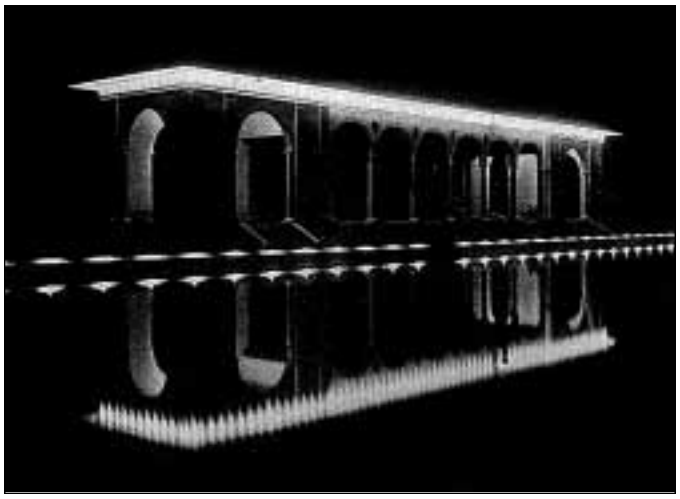
Public building lighting

Buildings of civic significance like the State Capitol, the Denver Auditorium, the Cheesman Memorial, the Washington Park boathouse, and the electric fountain in City Park all included night lighting as a major design theme. The Pavilion at Sunken Gardens Park (now gone) was extraordinary. For this elegant little park structure, lighting marked the cornice line, flooded the interior, and, in a stroke of the designer's genius, lined the perimeter of the reflecting pond right at the water line.

Institutional buildings also exhibited decorative lighting as major design elements, such as the Chamber of Commerce building at 17th and Champa Streets. None was more exuberant, however, than the great white terra cotta Denver Gas and Electric building at 15th and Champa Streets (now the Insurance Exchange Building). Mayor Speer pressed the button in 1910 that brought the 13,000 lights of the building into a brilliant display to a crowd of some 100,000 citizens.

Buildings for entertainment used light seemingly without restraint. Curtis Street, the street of movie palaces, was gradually transformed into Denver's "great white way." Illumination flooded the street from the entries, and marquees blazed stars and events in lights.

More sober buildings used less electricity for lights, and seldom had lights above the first floor cornice level. But banks and office block buildings and department stores were frequently well endowed with monumental fixtures; light and fixture were equally important. The newel posts of grand stairways were inevitably capped with fine post lights. Loggia of civic buildings were decorated with great hanging lanterns. The scale of historic light fixtures generally matched the scale of their buildings.



The Pavilion at Sunken Gardens, now demolished. Park architecture at its best both day and night. Courtesy Denver Public Library, Western History Department.

The Colorado State Capitol, amongst the first of Denver's monumental buildings to be floodlit. Courtesy Denver Public Library, Western History Department.

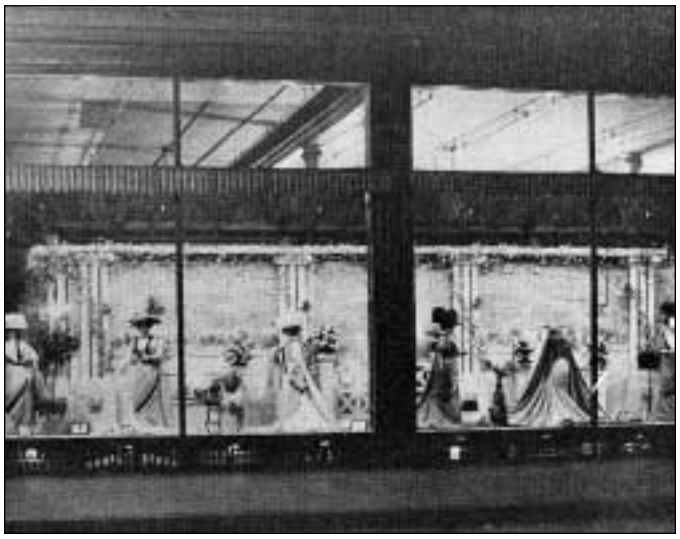
Curtis Street ca. 1911, Denver's early Nineteenth Century "great white way." Courtesy Denver Public Library, Western History Department.

The Denver City and County Building with Christmas lighting. Courtesy Denver Public Library, Western History Department

Commercial building lighting

The minimum expectation for public buildings was light at the entry. Fixtures at either side or over the entry generally marked the status of the building. Banks and apartment blocks for the wealthy were fitted with elegant, sometimes massive fixtures that were significant decoration by day as well as by night. Lesser buildings such as corner drugstores might have entries that would be lit, but with unobtrusive fixtures, perhaps with a bare bulb in the soffit of the recessed entryway.

Operators of commercial buildings found light to be good business. The high sides of blank walls were painted with advertising and lit with gooseneck lights at the top of the wall. Building identification signs were commonly placed above storefronts and illuminated. Storefronts themselves were brightly lit to show off the wares of the enterprise. Lights hidden within storefront window bays of department stores illuminated changing merchandise that became enticing exhibits for night strollers. The light from the store windows illuminated the sidewalks, making strolling an urban pleasure.



Denver Dry Goods Co., ca. 1910. A well-lit show window good for business, good for night strollers. Courtesy Denver Public Library, Western History Department.

Denver Gas and Electric Building, now the Insurance Exchange Building, taken after construction in 1910 by L. C. McClure. Courtesy Denver Public Library, Western History Department.

Thirteen thousand building lights by night. Photograph by Charles M. Smyth. Courtesy Denver Public Library, Western History Department.

Residential lighting

Electricity was a luxury in historic Denver residences before the turn of the century, but after 1900 houses of every size might have electricity. Most historic houses had porches, and porches had ceiling lights marking the entry. Entries without porches had bracket lights beside or over the door. The fixture forms followed earlier gas fixture design, especially wall-bracket lights, but whereas gas was for the wealthy, electricity was for everyone. With time, the design of electric lighting took on new forms and directions creating its own historic precedents.

As with commercial enterprises, the entry lights for residences reflected the status of the owner. Grand mansions with walled gates on the sidewalk might have lights on wall posts. Yard lights were rare, but properties with extensive grounds might have post lights along drives. Bracket lights at either side of entry doors could be as impressive by day as by night in metal craftsmanship. Lights were in scale appropriate to the entries marked. Grand exterior stairs typically had newel post lights in scale matching the size of the stairway. Residential lighting made real the invitation to the building at night.

Fixtures at the building entry are the first call for night lighting. Porch ceiling-surface or pendant fixtures are typical for historic residences once owned by either rich or poor.

Early electric fixtures evolved in style from gas fixtures. These entry pier and bracket lights could be either gas or electric.

Historic lights were commonly well-mated in quality, style, and scale to the building served. This is an elegant example.

LAMPS FOR EXTERIOR LIGHTING

Lamp development history

In the early part of the 20th century, designers had but the single option of incandescent lamps for night lighting. Exterior gas fixtures were easily altered to house the new electric lamps, without significant modification of the style of the fixture. Post, pendant, and bracket fixtures available today for exterior use are in many cases indistinguishable from models adopted a century ago. But by World War I designers were exploring new uses for the incandescent lamp, and small decorative lights and fixtures controlling light by reflection or refraction became increasingly common. By the 1930s movie theaters and enterprises serving the motorist could easily be identified at night by the flood of light from the buildings alone. The incandescent lamp is available in many forms ranging from standard household A lamps to halogen lamps designed for longer life and precise beam control.

Fluorescent and neon

The fluorescent lamp was introduced about 1940, and quickly found use in offices and service locations because of its efficiency and long life. The fluorescent lamp was radically different visually in that the light source was diffused rather than concentrated, spread over the full surface of the tube. Outside uses of the lamp were limited, though, because of cold temperature performance problems. Early lamps emitted bluish light, but a range of color selection is now available.

Neon, a gas discharge light form similar to fluorescent, did not provide enough light energy for area illumination, but had the wonderful attribute of linear light and color. It quickly became an art form in advertising and decoration.

The sparkle of incandescent lights was quickly appropriated for advertising and entertainment.

Neon added color and linear possibilities to night lighting, especially for signage.

Fluorescent lamps are less common than other sources for exterior use. These mark the building edges. Photo by Roger Whitacre.

High intensity discharge (HID) lamps

HID lamps were developed after World War II. The first of these, the mercury vapor lamp, was readily adopted for outside security and outside display lighting. Although its output had a decidedly bluish cast, it was quite efficient and long lasting. The mercury vapor lamp produced twice the amount of light as a fluorescent lamp of the same wattage. Though no longer the designer's choice, it is still prominent in rural farmsteads.

Designers and inventors continue the search for products that combine qualities of efficiency, long life, and color rendition close to that of daylight or incandescent light. The metal halide lamp and the high-pressure sodium vapor lamp, both HIDs, were developed after the mercury vapor lamp. The light from metal halide lamps is icy-white and from sodium vapor lamps is decidedly orange. Because of the slightly higher efficiency and the much longer lamp life of sodium vapor, this source is now ubiquitous in street lights across the nation. A low pressure sodium vapor light is even higher in efficiency, but is so objectionably yellow that it is seldom used.

The relatively small source of the incandescent lamp, especially in its halogen forms, allows tight focus and beam control, and for many outside functions the incandescent is still favored. It is easily dimmed and, unlike HIDs, starts and restarts instantly. Present incandescent lamps are much improved over early models, though problems of efficiency and life-span remain drawbacks.

The ceramic arc tube, a new development in HID lighting is promising. This form of metal halide lamp has a consistent source color over its life-span, a problem common to metal halide lamps. The ceramic arc tube has high efficiency and has color rendition similar to fluorescent sources. Presently used for interior illumination in lower wattages, developers hope that higher wattage versions of this lamp will ultimately replace high-pressure sodium sources.

High intensity discharge (HID) lamps are intense sources that require careful placement and shielding from view. HIDs are common in exterior use for floodlighting and street lighting. Photo by Roger Whitacre.

The 16th Street Mall lights are an outstanding design and effectively provide general illumination without glare, with sparkle that simulates with fiber-optics the output of incandescent lamps. The sources are metal halide HID lamps that provide good color rendition and economy.

Lamp selection values and color rendition

The table below compares the various lamp sources. The term efficacy is a trade synonym for efficiency, or lumens per watt of electricity. CRI, color rendering index, is in simple terms a measure of the ability of a lamp source to make blue look blue, red look red, and so on. The higher the number the better the performance. Sodium vapor makes green look brown and has a CRI of 22. Mercury vapor makes everything blue and has a CRI of 50. Incandescent lamps have the highest CRI. CCT, color temperature, is the color appearance of the source itself, matched to that of flame. Low numbers are orange, mid numbers are white, and high numbers are blue.

Of the HID sources, only metal halide and the new ceramic arc tube are considered acceptable for building use, with CRI numbers of 70 and above. Color rendition is very important for lighting landmark structures and districts in such a way that the colors of the building materials and the colors of the surrounding landscape are shown to their full advantage. Comparing the values of high pressure sodium vapor and metal halide can excite brisk controversy. The position taken in these historic landmark guidelines for lighting is that the metal halide source just meets the criterion for satisfactory building and site illumination, and that the high pressure sodium source falls short. Sodium vapor is presently more cost-effective for area lighting, but the savings is obtained at serious degradation to the night environment.

Speer Boulevard. High street lights are lamped with sodium vapor HIDs, the lower lights with fluorescents. Photo by Roger Whitacre.

LAMP TYPE	LAMP TYPE	COMMON WATTAGES	INITIAL LUMENS	LUMENS/WATT EFFICACY	RATED AVG. LAMP LIFE (HOURS)	CRI (COLOR RENDERING INDEX)	CCT (COLOR TEMPERATURE)
INCANDESCENT (CONVENTIONAL)	A-19	100	1650	16.5	750	95	2700
	PAR-38	150	1650	11	4000	95	2700
	PAR-38	75	750	10	2000	95	2700
INCANDESCENT (HALOGEN)	MR-16	75	1100	15	4000	95	3050
	PAR-38	75	1050	14	2500	95	3050
	PAR-38	90	1260	14	2500	95	3050
FLUORESCENT	T8	32	3000	94	20000	85	3000-5000
	TRIPLE TUBE	26	1800	69	10000	82	3000-4100
	2-PIN	13	900	69	10000	82	2700-4100
	T5	35	3650	104	16000	85	3000-4100
CERAMIC ARC TUBE (PHILLIPS MASTER COLOR)	PAR-38	70	4800	68	7500	81	3000
	PAR-38	100	6800	68	7500	83	3000
	ED-17	100	9300	93	10000	85	3000
METAL HALIDE	PAR-38	100	5700	57	7500	70	3200
	ED-17	100	8500	85	15000	70	3200
	ED-37	400	36000	90	20000	65	4000
HIGH PRESSURE SODIUM	ED-17	100	9500	95	24000+	21	2100
	ED-37	400	47500	119	24000+	21	2100
MERCURY VAPOR	PAR-38	100	2800	28	16000	20	7000
	ED-37	400	21000	53	24000+	20	6500
LOW PRESSURE SODIUM	T-21	135	22500	167	18000	N/A	1700

Table of Lamp Types with their Characteristics

THE LIGHTING TASK

Function

Lighting is needed to find buildings at night, to locate building entries, and to safely make one's way to the door. Lighting is needed for building and personal security. Lighting is also used to enhance and ornament buildings. It is used to identify, to advertise, and to display. In an airport terminal these several functions might be separately addressed by the choice of lamps and fixtures. At the other extreme the front porch light of a landmark house might serve all functions together.

We need light to see. The first question is how much light. A term commonly used to quantify light is the footcandle, the amount of lamp lumens, a measure of light, falling on a surface per square foot.

The eye is a remarkable instrument. We see objects illuminated in full moonlight by less than a tenth of a footcandle. Objects that are illuminated by the sun exceed 10,000 footcandles. Though the eye is clearly adaptable, however, it can adapt to only one light level at a time. For comfortable vision, lighting contrast ratios of less than one to ten are preferred. This is difficult to achieve in night lighting. A light source with surface brightness over ten times that of the landscape will make objects in the landscape look dark or shadowy. A related factor is the size of the light source. The larger the light source, the more difficult it will be to see nearby objects.

The characteristics of good lighting at night:

1. **Illumination levels are sufficient for the visual task.**
2. **Illumination levels are reasonably uniform.**
3. **Glare is limited.**

Lakeside Amusement Park between 1908 and 1910. The full array of functional and decorative lighting is beautifully orchestrated. L. C. McClure. Courtesy Denver Public Library, Western History Department.

Market Street sidewalk cafe. Carefully concealed and shielded sources make for a vibrant night life.

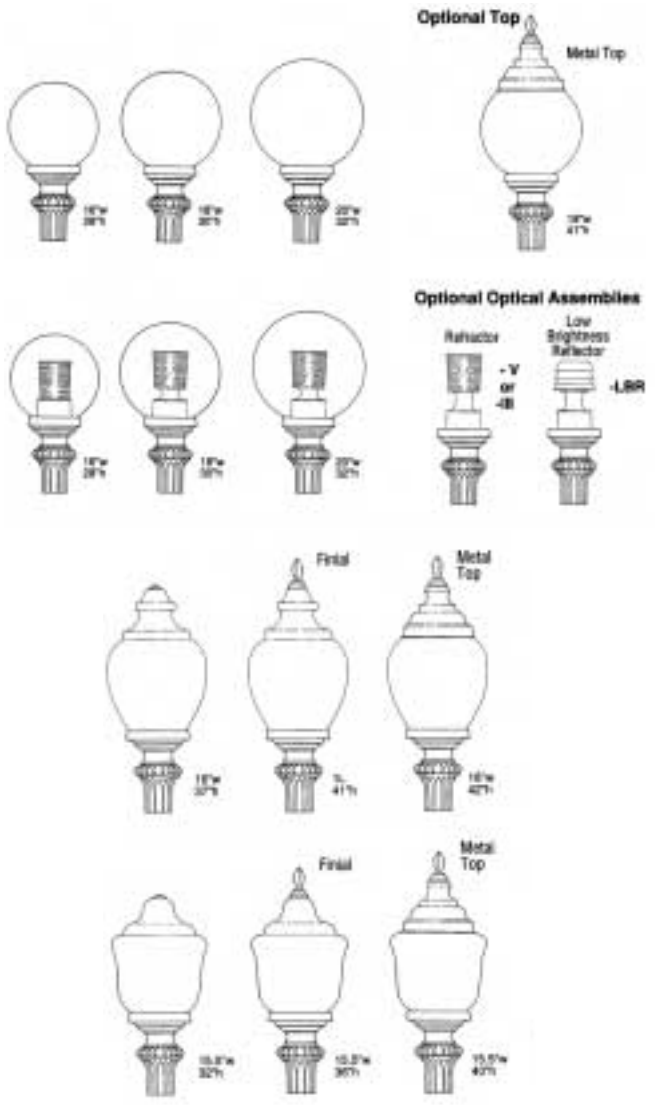
Illumination and glare

Recommended illumination levels are related to task. Some seeing tasks are more difficult than others. Guidelines published by the Illuminating Engineering Society of North America suggest minimum illumination levels for various nighttime functions. For example, amateur tennis requires 20-30 footcandles. A building entry in active use needs 5 footcandles. A commercial parking lot is listed at 1.1 footcandles, a collector road 0.8-1.0 footcandles, and a residential street 0.3-0.4 footcandles. The last figure represents a level barely more than full moonlight.

When people complain that night lighting is poor, glare is frequently to blame. The numbers above for task illumination are quite low; it takes little light for a person to see well enough to carry out many tasks, but only if the background illumination is in reasonable proportion to the task illumination. At night, glare is excess brightness in the field of view that makes it difficult to see. To illustrate, if the car approaching us at night has high beams on, a deer in the road could be invisible to us. On the other hand, if the car approaching us in the daytime has its high beams on, they will have little effect.

Source glare from light fixtures at night is a serious problem. The source that should allow us to see becomes a barrier to seeing. Contemporary street lights are carefully designed to put light on the street at sharp cut-off angles such that drivers in the street and pedestrians on the sidewalk are not unduly aware of the source unless they happen to look up. Unfortunately, historic lights frequently use glass globes around lamps that provide no control at all.

If the globe is part of a bracket-light placed against a light-colored wall, the problem is eased. The contrast of source to background is much reduced. If the globe is atop a black post lighting a black asphalt walk, the glare may well be disabling. Means are available to preserve the historic globe while reducing direct glare. Refractors or reflectors placed within the globe can direct the majority of the lamp output down, providing control much like the streetlight, while still maintaining the historic appearance.



Metal top reflectors, internal reflectors, and internal refractors all work to reduce source glare from globes seen from normal pedestrian viewing angles. Courtesy Antique Street Lamps, Inc.

Glare is greatly reduced when the lamp source is hidden from view. Photo by Roger Whitacre.

Lighting for safety and security

Safety in the sense intended in these guidelines refers to the lighting of possible hazards. For example, light fixtures should be placed in such a way that pathways, stairs, railings, ponds and other obstacles will be illuminated. Lighting for security refers to the need to enhance the protection of property and people. Both security needs require some discussion, because lighting for security can be a serious intrusion into the historic environment, as well as a severe glare source. Moreover, glare can actually be counter-productive to security.

Though the effects may be limited, lighting does play a role in personal and property security. Property security is attained by increasing the probability of a criminal being seen. What is desirable is enough light, with good color rendition for identification, but not a glare source that would hinder identification.

To avoid the appearance of a place under siege, one could use sensor-controlled lights. These offer an ideal means of surprising intruders and alerting observers. With sensor-controlled lights security is enhanced without altering the valuable historic ambiance of the structure, or upsetting neighbors with spill light from floodlights.

Lighting to enhance personal security is a more complex matter. Balanced illumination from sources without glare and of good color rendition is important. Extreme contrast from glare and shadowing is generally regarded as threatening. More fixtures with lamps of lower wattage are preferable. Light from buildings is a positive factor, and neighborhoods that leave front porch lights on in the evening hours give a sense of security to strollers. Lights illuminating building surfaces provide adjacent areas with indirect reflected light. Small shopping centers with after-hours storefront lights contribute in the same positive way.

Light from surfaces within loggias and porches is welcoming, and contributes to a sense of personal security. Photo by Roger Whitacre.

A light-colored background behind lanterns or globes reduces source glare. The glare of globes against a black night background makes seeing difficult. Photo by Roger Whitacre.

BUILDING LIGHTING DESIGN

Historically there were exuberant buildings and sober buildings, buildings of caprice and buildings of stolid massiveness. Lighting fixtures tended to be consistent with the building character. Restoration of historic building lighting is rewarding if the passion and intent of the original designer can be rekindled. The historic precedent is the first lesson.

When old buildings that have lain dormant for years are brought to life with adaptive use and rehabilitation, there might be questions as to what new lighting is appropriate. Most certainly the original building lighting scheme should be considered as the starting point. Entries, walks, transom sign boards, vestibules, loggia, stair newelsÑall of these are places for traditional lighting and there are a wealth of contemporary and period fixtures that are fitting for new work. The too frequent problem is our tendency to go beyond historic routine and seek in rehabilitation a more impressive night image.

Illumination requirements should be carefully defined as an element of the rehabilitation program, then appropriate sources chosen. Historically, light fixtures were of visual importance equal to that of their lighting function. Contemporary fixtures added to landmarks, however, should quietly seek background status. In general, concealed sources are preferable.

Denver has a wealth of historic building lighting, particularly at entries.

If this landmark entry were not initially provided with this keystone lantern, it would be wise in rehabilitation to seek new illumination from a concealed source.

Stairs to heroic buildings deserve heroic newel fixtures. This qualifies.

New lighting for the sole purpose of attracting attention to landmark rehabilitation projects is inappropriate unless of demonstrable public advantage.

There are two lighting applications for building rehabilitation that are frequently proposed that test the limits of appropriateness: the first is lighting sources above the ground floor where none were originally placed, and the other is floodlighting all or part of the building.

Decorative lighting is not necessarily out of order for adaptive uses. A new cinema carved out of an old warehouse might do well with small lamp lighting the sparkle of which would rival the old Curtis Street theaters. Problems arise, however, when more substantial non-historic fixtures are installed that cast light up or down onto the building in scallops that ignore structural order, seriously diminishing the nighttime visual qualities of the building. Bracket lights added at the first floor cornice level shining down for pedestrian light can be a positive addition. Lights higher, or at the first floor cornice level shining up, are generally detracting. The majority of night light should remain at the ground floor level.

Floodlighting, or washing the building with light, is also a common objective of the designer or owner. But floodlighting for landmark buildings should be reserved for those with great symbolic value, those especially important to the community in civic function or historic significance. Excessive use of floodlighting is akin to billboard competition on the highway.

The night time dignity of this landmark industrial building was not well-served in adaptive use rehabilitation for commercial use. Light shining up from above the ground floor is seldom appropriate. Light should shine down at the sidewalk and at entries, not up on the building.

Residential floodlighting is seldom justified.

This light at the ground floor cornice line gives useful illumination to the sidewalk below, but adds equal scalloping light against the facade above that is visually disturbing.

LANDMARK STRUCTURES AND DISTRICTS LIGHTING DESIGN GUIDELINES

HISTORIC BUILDING LIGHTING

With few exceptions, exterior lighting for historic buildings was accomplished with fewer fixtures and less powerful lamps than for contemporary buildings. These tended to be concentrated at entrances and, for more monumental buildings, at newel or gate posts. Present-day expectations for lighting on grander scales present a significant challenge for those who design lighting that will be appropriate for the landmark building.

Remaining exterior fixtures should be valued. Where historic fixtures are missing, documentary research should provide helpful definition of historic conditions as the starting point for new lighting design. Modern lamping technology offers many options for the improvement of historic fixture performance. Where new illumination is needed, those sources which are least intrusive are most desirable.

1. Preserve historic building lighting.

a. Historic lights should be supplemented rather than removed.

b. Adapt historic fixtures for new lamps with better illumination and glare control if improvement in performance is needed. Maintain the physical appearance of the fixture.

c. Where research indicates fixtures now missing, replication of the missing fixtures or installation of similar fixtures is encouraged.

2. Minimize damage to historic building materials in the installation of new building lighting.

a. New fixtures should be installed in such a manner that the addition might be removed at some future time without difficulty or elaborate repair.

b. New fixtures should be placed where materials could be most easily repaired if the fixtures are later removed.

If added entry illumination were called for in the rehabilitation of this landmark building, new or added sources could be accomodated in the generous original lanterns.

The sign-board fixtures are fed from surface conduit without damage to the brick banding.

3. Give existing historic lighting precedence.

a. Where historic fixtures remain, newly added fixtures should not detract from the historic fixtures in scale, design, or placement.

b. Illumination from historic fixtures should visually be greater than from new added lighting. If historic fixture illumination is deemed too low, the fixture should be adapted for relamping to higher illumination levels before adding additional fixtures.

c. Unless neon fixtures were historic attributes of the structure, neon should not be applied to building surfaces.

4. Select new lighting fixtures appropriate to the period and style of the building.

a. Fixtures of contemporary design should be compatible in materials and quality with the landmark structure.

b. Fixtures that are period reproductions may be appropriate if carefully matched in style, materials, and quality to the building architecture.

Note the dangling exposed floodlight below the monumental left lantern. Additional down-light to this entry is needed, but could better be achieved with careful modification of the existing historic fixture.

The arch-pier sconce lights and the path lights are clearly additions in this rehabilitation but in sympathy with the historic structure. They are appropriate in the addaptive use of this site.

The five path lights are low-keyed means of lighting the pathway steps without upstaging the historic entry lantern.

5. Install lighting fixures of a scale and character appropriate to the building.

a. Monumental lights should not be placed on modest buildings. Conversely, great buildings do require large fixtures.

b. Lights for buildings should follow historic precedents for size and placement.

6. Enhance the dominant organizational features of the building facade with new lighting.

a. Lighting should draw attention to entries and unique features of the building.

b. Lighting should be placed and arranged in such a way that the stucture of the building is emphasized. Lighting that scallops the surface or distorts the building with shadows should be avoided.

c. Lighting at the first floor should dominate lighting at upper levels. Illuminated building surfaces within arcades and loggia are especially valuable.

d. Internally illuminated commercial signage should not dominate building lighting. Signage awnings illuminated from within are not compatible with landmark structures.

This entry light for an apartment block is properly scaled and engagingly crafted.

The Denver Auditorium defined the structural organization of the building with light at night. Courtesy Denver Public Library, Western History Department.

The steeple of this church is a significant Denver landmark, and is properly lit with floodlights on outrigger arms as well as with lower roof-mounted sources.

The Strand, now demolished, in theatrical fashion gave new meaning to the architectural idea of entry—-by day and by night. Courtesy Denver Public Library, Western History Department.

The Strand in stage-set magnificance by day. Photo by Charles M. Smyth. Courtesy Denver Public Library, Western History Department.

And by night. Lighting for entry, building, and advertising was exuberently integrated and amplified. Photo by Charles M Smyth. Courtesy Denver Public Library, Western History Department.

7. Provide building illumination appropriate to the status of the building.

a. Lighting programs for landmark buildings should follow the character of other like buildings in kind and quantity.

b. Lighting for single family residences should generally be limited to fixtures for entries and walks.

c. Security lighting should be integrated with building lighting where possible.

8. Use building floodlighting only on landmark structures of civic importance.

a. Significant governmental or institutional buildings important to the community are appropriately floodlit either from ground and pole mounts or from discrete placements on the building itself.

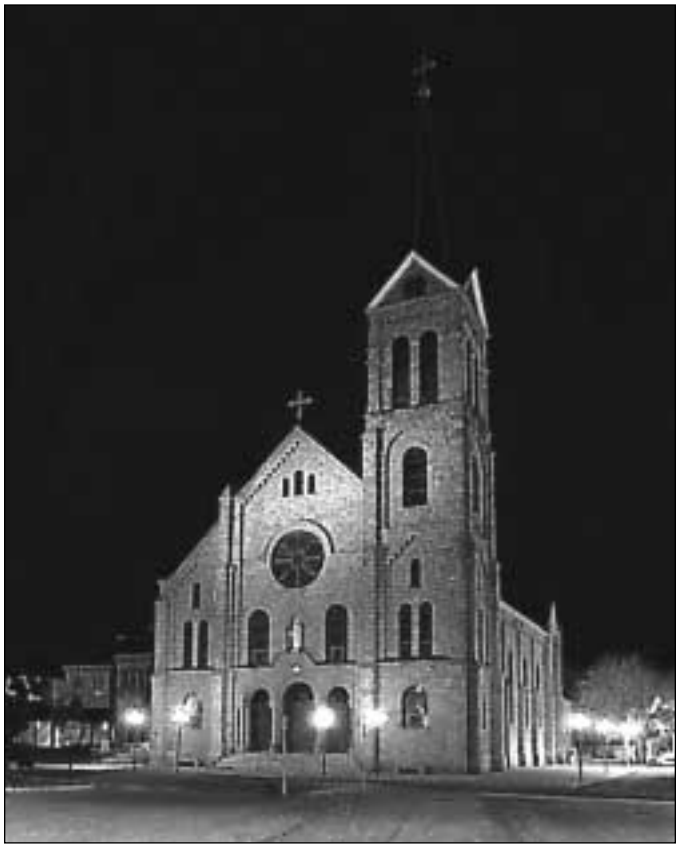
b. Some buildings are properly floodlit due to their location in the city at the head of streets or parkland. Floodlighting should illuminate the landmark only for the direction of importance to the viewing public.

c. Building floodlighting tends to distort building features and cause glare to adjacent properties. Floodlight design should be provided by competent professionals.

d. Residential building floodlighting is inappropriate. If security floodlighting is necessary, it should be activated by motion detectors.

The entry bracketed lantern is just right for this doorway. Lighting for stair and path is effective, and properly unintrusive.

The side lanterns are massive, and effectively match the scale and visual importance of this historic office towner.



Floodlit St. Elizabeth caps Arapahoe Street, adding richness to the Denver night. Residences seldom deserve this attention. Photo by Roger Whitacre.

9. Make use of lighting from within building ground floor openings.

a. Where there are loggia or recessed entries, ceiling and entry wall fixtures should be used to light the building as well as to provide security lighting.

b. Sources that provide security light for adjacent walks and site areas by reflected building light are encouraged.

c. In commercial areas, illuminating sidewalks by display lighting from within store-fronted buildings is encouraged.

10. Select lamps for landmark lighting with color rendering index (CRI) greater than 65.

Incandescent, selected fluorescent, and metal halide lamps qualify in rendering effectively the color characteristics of historic properties.

The Cheesman Memorial gleams from within from largely concealed sources. The building is a lantern for the park. Courtesy Denver Public Library, Western History Department.

The Cheesman Memorial by day. Photograph by L.C. McClure. Courtesy Denver Public Library, Western History Department.

Light providing color rendition like that of incandescent sources is good for sales, and good for historic buildings.

Illumination from within is a friendly means for security illumination. Photo by Roger Whitacre.

11. Select lighting fixtures that have low source glare and cut-off angles appropriate to their placement on the site or building.

a. Lighting at the first floor level should be shielded in such a way that direct glare is reduced for pedestrians. If globe fixtures are used, the globe should be diffusing, and interior refractors or reflectors incorporated to direct the light. If simple diffusing globes are used, lower wattage lamps should be installed.

b. Security lighting floodlights placed high on landmark buildings are not appropriate. Extended grounds lighting should be independent of building lighting.

c. Light should be directed at the surface to be seen, without spill light on adjacent properties or the sky.

d. Lighting intended solely for building security should remain off until activated by motion sensors.

Floodlights placed high for security give rise to the unintended sense of danger and prison-like circumstance. Such lights often create nuisance glare for adjacent properties.

12. Complement building lighting with site lighting.

a. Historic site lighting if known should be the starting point for design.

b. Non-historic site fixtures should not be intrusive in scale, ornamentation, or materials with respect to the landmark structure.

c. Post lights used for walkway lighting should be limited to a height no greater than 14 feet. Path lighting that is achieved with low unobtrusive sources is encouraged.

d. Illumination for landscape should not exceed illumination for buildings.

These stair lights enhance the aesthetic wealth of the Basilica of the Immaculate Conception.

And, in like manner, these stair lights enhance the character of this fine residence.

13. Keep parking lot illumination to a minimum.

a. Horizontal illumination in parking should be less than that at walks to and at the building entry if the parking is adjacent to the building. The lighting of parking areas should not dominate building lighting.

b. If parking is adjacent to the landmark building, pedestrian-scaled post lights should be considered that serve both parking and the building approach.

14. Follow historic patterns of district lighting.

a. Where districts wish to add public lighting, design should be consistent with historic precedent.

b. Plans for coordinated advertising and storefront lighting in commercial districts are encouraged.

c. Non-historic pedestrian post lighting along streets in residential districts is discouraged.

d. Lighting in the street right of way must follow the Denver Streetscape Design Manual.

Post lighting can enhance the pedestrian environment of commercial districts. Sign-band lights are a positive addition.

Lighting for residential districts is best achieved with other than regularly spaced pole lights.

Individual property lights at the fence lines enhance the night character of residential districts.

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Denver Union Station Welcome Arch, now demolished
L.C. McClure, photographer
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