

**I WISH SOMEONE WOULD  
HAVE TOLD ME ABOUT  
LANDSCAPE ILLUMINATION...**

**BEFORE I PUT IN ALL OF MY  
LANDSCAPING**



*For those who appreciate the difference*

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**M**ore than 70% of those who invest in professional landscape **illumination** also had their landscapes professionally designed. Yet, most landscape plans are developed and installed without anticipating the integration of landscape illumination. But once the landscape project is completed and the client begins to live with it, that's when he or she recognizes the potential to enhance the space and enjoy it in the evening with quality illumination!

Considering the array of hardscape and planting elements involved in managing a new landscape project, it is understandable that landscape illumination often gets overlooked. It may even be left out intentionally due to initial budgetary concerns. However, the cost of waiting far outweighs the cost of early incorporation, both financially and in the overall quality of the end product. After all, the owner relies on their team of professionals to coordinate the entire process, which includes what will affect the landscape or hardscape in the future.

### **Improper planning likely will cause the end user many of these hardships:**

- Additional costs due to duplication of effort;
- Disruption of the landscape at a later date (once it has begun to establish);
- Limitations or no access to power because sleeves were not installed under driveways, patios, walks, pool decks or elsewhere;
- Frustration for the client when they realize — after the fact — that the landscape cannot be lit as desired; and
- Significant additional cost due to complications of unnecessary lighting installation.

The landscape illuminator often hears, ***“I wish someone would have told me about landscape illumination ... before I put in all of my landscaping.”*** They have to navigate the hurdles of integrating an effective illumination system into a completed landscape, at the expense of the design and the client's budget.

Memories are forged in emotion, positive or negative. Light — more than any other visual stimulus — has the power to evoke emotion. Landscape illumination should reflect and amplify the original intention of the landscape design. Therefore, a customer-focused, professional approach to the lighting design and budgets should be included up front with the landscape budgets. This is most accurately done when a landscape illuminator has reviewed the site; the architectural, interior and landscape designs; and the desires of the client. You can pop in a smattering of light fixtures at the end of a project or accurately assess what will best meet the client's needs and give them the best opportunity to see their dream nightscape come to fruition!

## 1 LOCATION OF TREES, SHRUBS & GARDENS

Developing a sense of depth in the nightscape depends largely on placement of major site elements, especially trees. Up lighting, also known as accent lighting, these trees can add depth to the landscape, dramatic appeal when entering a property, or balance and completion to a foundation planting. It is important to leave enough room for the placement of the fixture, where trees are being considered. Evergreens, for instance, need to be illuminated from outside the tree, so they are washed with light. As a rule, position the fixture with enough space for light to reach the top without interference from the lower limbs. Without the attention of an illuminator during the design of the landscape, trees are often placed too close to a patio, walk, driveway, walls, etc. to adequately illuminate them.



Fixtures are placed to illuminate trees from the ground up to highlight the structure, character and color of the trees. Accent light shade trees to feature them and offer shadows and light on a house facade or architectural wall. A tree large enough that offers 3 inches of trunk or limb diameter at least 15 feet off the ground could be a candidate for down lighting, also known as moon lighting. This type of lighting creates drama with delicate moon light shadows filtered through the trees onto patios, pool decks, walkways, landscape and driveways. Ponds and patios, especially, benefit from this type of illumination when at least 6-inch caliper shade trees with a single central leader are incorporated nearby in the landscape design. If the moon light is visible from a walkway, patio or inside the house, this is the most exciting type of illumination effect! Consider each tree individually, based on location, growth habit, texture, size, and color.

#### **THE LOCATION OF SHRUBS:**

Most shrubs do not benefit from accent lighting, unless they are specimens or happen to be very large. They can actually be detrimental to an illumination design if they are planted in the wrong locations. For instance, if shrubs are planted where a fixture should be, it typically is not possible to relocate the fixture to accomplish the desired effect of the illumination. When shrubs or a line of trees are placed strategically with illumination in mind, they can establish a sense of pattern and rhythm that brings unity to the overall design. As a general rule of thumb, leave room to place the fixture properly without competition from the planting.

#### **PERENNIAL BEDS AND BORDER GARDENS:**

Accent lighting, moon lighting, and tall path lighting highlight textures, colors, and feature plantings to add depth and drama to a garden. Place the fixture carefully so that the surrounding plants will not swallow it up when full grown. Moon lighting from a nearby tree or structure washes large areas with light and highlights many of its features simultaneously. This use of illumination creates a comfortable transition between shrub planting beds and perennial beds by using similar techniques and light placement.

## **2 SCULPTURES, FOUNTAINS AND WATER FEATURES**

A comprehensive illumination system tells the landscape story by visually harmonizing the key architectural and landscape elements. It also draws attention to special features. However, just as in the landscape design, if the intention for a particular amenity is not woven into the overall design, it creates visual dissonance. You can even eliminate the need for harsh, intrusive house flood or security lights by strategically placing site amenities that will be highlighted with accent lighting.





Create an environment that transitions easily from element to element by emphasizing each amenity in balance with — rather than starkly separate from — a properly-illuminated landscape or pedestrian area. Play with contrast by applying gentler moon light to wash broad expanses in the background and emphasizing particular pieces of interest with accent lights. Consider the fact that only lit features make up the nightscape, so illuminate elements around and behind those features you intend to emphasize. What is not illuminated is as significant as what is. So, don't overdo it. This guides the eye naturally through the space, rather than leaving it searching for somewhere to go.

Remember, if there is not a light on it, you will not see it in the after-dark landscape. Carefully consider interest points in the landscape, because they can make even more of an impact after dark. Then allot adequate space to place each fixture so as not to obscure the light's path

with hedges or other plantings. Fixtures do not belong in lawn areas due to inevitable damage from maintenance equipment. And why make them so conspicuous?

Make sure to position these daytime focal points properly in the landscape design to make the desired nighttime effect possible. Highlight them with accent lights from below or moon lights from above. Silhouette features from behind or try mirroring light by reflecting it onto the surface of a pool of water. An illuminator will request that the water feature contractor install lighting from within the pool, pond, fountain, or waterfall so as not to compromise the integrity of the project by disrupting the site at a later date.

Site amenities are the client's personal expressions! Consider them carefully, without over-emphasizing them. The illuminator's goal is to discover the client's needs and desires to determine which areas and elements of the site and landscape to address.

### 3 DECKS, TRELLISES AND GAZEBOS

Strategic details can be incorporated into the installation that will make it much more attractive and cost effective, if illumination is considered in the design and construction of the deck or trellis. For instance, strip lighting is ideal for the illumination under railings, steps, benches, and gazebos. It is not intended to be visible, so it usually requires a channel routed in the hardscape during construction. This is often impossible to accomplish after the fact. When it is possible, it *always* requires significant retroactive work by a carpenter at an equally significant added expense. Wiring is always best concealed when incorporated into initial construction rather than being stapled on afterward.

Whether you wash the structure with light from up lights or down lights, embed it with strip lighting, string it with bistro lights, or moon light it from surrounding trees, consider how to streamline its incorporation before construction begins. With prior planning, the structure should be an incredibly attractive element within the nighttime landscape. Entertain in your barbecue area after dark by strategically weaving a mounting point for a moon light into the design process. Unique trellis features can be a major focal point in the evening with the appropriate placement of fixtures. Avoid the use of the house flood or security lights, which usually produce too much light for the space and irritate the neighbors!



### 4 PATIOS, POOL DECKS AND WALKWAYS

Moon lighting and path lighting are the two most common ways to provide illumination around a patio, pool deck, or walkway. When a proximal tree or structure is available, moon lighting can take the place of several path lights. Bistro lights can create the opportunity for a more festive atmosphere when installed with an override switch. Develop alluring visual depth by accent lighting tall elements in the surrounding landscape.

For the safety and security of guests and household members alike, coordinate mounting points for illumination of all stairs, landings,

and anywhere one needs to make a change of direction while traversing the outdoor space. Entertainment can be that much simpler! Make sure to select only fixtures that will not shine in your eyes due to an exposed light source. In the case of moon lighting, take into account the position of the shield, aim of the fixture, and the height where it is mounted.

Consider daytime focal points to feature after dark in these living areas. Then during installation, keep in mind the view from lower levels, like spas, pools, and patios. If you do not take these other viewpoints into consideration, you may end up blinding your visitors with a poorly directed moon light that shines directly into their eyes. When illuminating a pool deck, space fixtures slightly closer together. Pavement gets slick when wet, so these areas bring a more urgent need for uninterrupted illumination.

Plantings should not impede a fixture's function during all seasons. Fixtures also do not belong in the lawn. So, design planting beds to allow for even spacing wherever light is needed. If an area warrants a path light fixture, allow room to offset it from the pavement and do not plant light-blocking shrubs in the way of the desired light spread. Stagger the fixtures and space them with an even cadence so that someone can stroll down the walk rather than being flanked with fixtures that create that harsh runway effect.



## 5 HOUSE FACADE LIGHTING

Strategic fixture location is especially vital to achieve the proper effect for façade lighting. Consider how to arrange plantings and adjacent hardscapes to allow enough space to position a fixture so that it can produce an even wash of light. Account for any unique architectural features or textures, stonework, windows or address numbers. The trees and shrubs should allow for the proper placement of the fixtures to provide dramatic, striking shadows without shining directly into the windows. Once façade illumination is installed, gaps and blockages become very obvious. So, it is important to plan the underlying planting beds with landscape illumination in mind. Always make these assessments with the existing house lights on, except for the security floodlights.



## 6 DRIVEWAYS AND MOTOR COURTS

Create an awe-inspiring first impression for guests as they approach the home from the driveway by highlighting key features, trees, colors and textures around the drive and motor court. The effect should be welcoming and never overpowering. Moon lighting is nearly always the ideal treatment for this part of the landscape. Strategically position large, single-leader shade trees around the paved areas to wash large swaths of the landscape and pavement in gentle light. Accent lighting trees within a driveway island also can develop a sense of depth and anticipation!



Path lighting along these heavily trafficked areas is very tricky. If you decide to utilize this application, set them back from the pavement to minimize the likelihood they will be hit by a vehicle. Also, take snow accumulation into consideration. Light from path light fixtures easily can be affected by snow, especially where it is deposited by removal services. Avoid the “runway look” by staggering the fixtures, unless the design calls for formality.

Whichever option you choose, driveway illumination should transition effortlessly into the front walk and front house entry illumination. Again, place plants with consideration for the light spread. In these spaces, take special care that fixtures are high quality for the purpose: extra-durable options with breakaway features. Remember, never install fixtures in the lawn!

## 7 WALLS, PIERS, COLUMNS AND OUTDOOR KITCHENS

Advance planning is essential to allow for the inclusion of sleeving for pipe or wire access during construction. Skipping this step can easily preclude the opportunity to install fixtures in the structure later in the project, a common headache for the client with no simple fix. If you find yourself with a completed structure that hasn't been constructed for power access for fixtures, assess the property for ways to illuminate the structure from the outside with accent, moon, or bistro lighting. Fixture placement — whether integrated into the structure or illuminating from the outside — is important for symmetry, desired lighting effect, and access for repair or service. Always consider the quality and intensity of light

when mounting coach lights to the tops of piers or columns. As a rule, unless it is specifically part of the desired aesthetic, drawing attention to the fixture itself, rather than the effect of the illumination, distracts the eye and produces unwanted glare. Retaining and seat walls offer under-cap lighting opportunities for a welcoming effect and convenience. Outdoor kitchens and grill stations often require multiple convenience outlets. Under countertop lighting can create a dramatic effect around the perimeter of the grilling station to highlight natural stone or brick, back splashes and bar stool areas. Achieve functional task lighting with pergola down lights, bistro lights, coach, or goose neck lights. And if an outdoor TV is part of the vision, take special care to avoid glare sources in the design.





## 8 BISTRO LIGHTING HAS ITS OWN SET OF PARAMETERS

Whether you call them party, string, festoon, or bistro lights, these simple fixtures are versatile. The tranquil mood they produce fits a broad spectrum of settings: indoor or outdoor, residential or commercial, casual or formal. They have the power to transform the atmosphere of nearly any living space. Often, strands of bistro lights are installed so haphazardly outdoors that they serve as a distraction — rather than as a complement — to the space. Improper mounting easily can cause damage to healthy trees or leakage when attached to a house or other building. Other potential damage, safety concerns and ornamental considerations are often overlooked.

Make these considerations before moving forward with bistro lighting:

### 1. SIZE AND SHAPE OF YOUR SPACE MATTERS.

Your layout must be appropriate, so your lighting does not overwhelm nor insufficiently illuminate the area. Your space is unique and so is your design. Would bistro lighting be appropriate under a pergola, gazebo, porch, or arbor? Would you like to suspend them over open space, such as a patio, deck, outdoor seating area, or lawn? What is the desired effect — dim, romantic ambiance or day-like illumination — for your outdoor living space? Any combination is possible, but we must begin with what spaces you have and the overall desired effects.

### 2. STRAND PLACEMENT AND DESIGN OPTIONS.

When hanging bistro lights in a pergola, under the overhang of a porch, or around a patio, one option for an initial phase is to run strands around the outside perimeter of the structure. If

there is considerable distance from the perimeter to the inside seating or dining areas that might require more light, adding the connection of the corners in an “X” shape may suffice. Others may prefer placing the strands in a zig-zag pattern or “V” shape — as opposed to the perimeter — to bring more consistent light to the interior of the space.

### **3. CONSIDER THE AESTHETIC FACTORS.**

Generally speaking, manufacturers choose to space bulbs with lower wattage/lumens on smaller-gauge wire approximately 12 inches apart; for higher-wattage/lumens bulbs, they tend to be spaced about 24 inches apart on heavier-duty wire. As you research the proper choice of lights, consider the space you are working with to determine what best meets your needs. For instance, large, widespread bulbs in a relatively compact space may not achieve your desired effect, while those same strands would be strategic for a broad area with high mounting points.

### **4. PRACTICAL/SAFETY IMPLICATIONS.** Before beginning a design or installation, ask:

- Are you concerned about children or guests being able to reach the lights?
- Do you plan to use the lights outdoors year-round?
- Does your space encounter a lot of wind? Would you prefer heavy-duty, weatherproof cables?
- Are your light strands exposed to the elements? Have you purchased spare bulbs for replacement, since these are essentially unprotected sockets?
- Do you have moving parts to avoid? Gates, doors, outdoor fans, umbrellas and heaters should be factored into strand placement.
- What kind of controls would you like? Can you use a switch, time clock, photocell or sometimes Wi-Fi to control them remotely?

### **5. THE PATTERN AND LAYOUT OF THE BULBS ARE PERSONAL CHOICES.**

Beyond the spacing and size of the bulbs on a particular strand, general layout is a key point in any successful bistro lighting project. They can be spread wide apart or gathered close together, depending on your desired brightness and look. As the ideal pattern is determined we take into account the length of strand that will need to be used as well as realistic mounting points. What are our options to anchor the strands? Are there trees, buildings, posts or cables available for setting hooks or other mounting hardware? Often, the mounting options will affect the overall design. If optimal mounting locations are not available, posts installed strategically might be an option. You can attach multiple strands to a post set subtly off to the side. Posts also allow for a specific shape or design of the light strands. A post’s size and material may depend on its location, the effects of frost on the material, mounting height and number, and length of bistro strands. Posts also help in sheltering the wire connections from the weather.

### **6. AVOID POWER PROBLEMS.**

As a general principle, bistro lights should not be plugged into an extension cord. If you do not have a ground-fault interrupter (GFI) outlet within range, it is worth the investment to have one installed by an electrician. That GFI will provide convenient access as well as a safety guard from power surges or interruptions that will damage your lights and could potentially cause electrocution. It also reduces danger when conditions are wet or when the strands are installed near a water feature. If you are not concerned with dimmability, low-voltage options run off of a transformer and further reduce the danger.

## 7. WATTAGE AND DIMMABILITY OPTIONS.

Another common problem has to do with wattage and dimmability. Incandescent bistro bulbs typically use 15 watts each and LEDs use one watt to two watts each. If you would like to adjust the brightness of your bistro lights, a dimmer is necessary for dimmable 110-volt bulbs, and a dimmer plus a dimmable transformer for 12-volt bulbs.

## 8. LENGTH OF BISTRO LIGHT CABLE RUNS.

As described above, the length of light strands can make or break the vision for your bistro lighting project. Continuous strands of lights simplify power access. Different manufactures have different quality standards and lengths of strand available. Some bistro lighting strands only come in 40- to 50-foot lengths that require several connections to obtain the desired overall

length. Too much left-over strand requires cutting the cable and making safe connections. Otherwise, the extra length is wrapped around a tree or post or left dangling. This looks amateurish. If the bulbs are removed, the empty sockets are dangerous when exposed to the elements. Obtaining bistro lighting strands in 300-foot spools can make most installations possible in a single run, reducing the splices necessary. Generally, the larger the gauge of cable, the heavier duty the strands. The heavier the strands, the further you can run them. If especially long cable runs are necessary or you are trying to form a neat line with no drooping, consider using aircraft cable to support the power line for long-term durability. The wind and other weather will inevitably wear on the hardware, so aircraft cable is an excellent source of insurance.



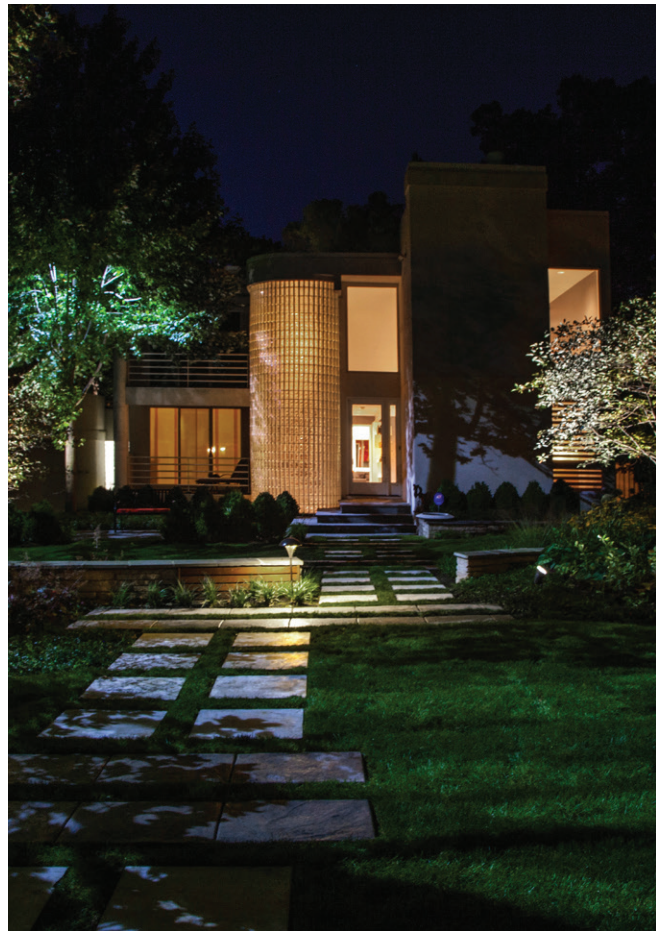
## 9 THE USE OF LED LIGHTING IN THE LANDSCAPE

LED lighting is the norm and replaces incandescent and mercury vapor lights from the previous four decades. It also offers energy savings of nearly 80%. Quality, pricing and availability have been nearly perfected. The classic blue hue that used to hallmark LED lighting is a thing of the past. Now, it covers a full spectrum of colors, or tones.

**The 3 colors that Night Light Inc. recommends are:**

- **Architectural elements:** Should be lit with warm light, or a yellow tone, at approximately 3,000 degrees Kelvin, because most interior lights in and coach lights on the home are warm.
- **Plant material.** Should be lit with clear light, or a white tone, at approximately 4,000 degrees Kelvin, so the plants look their natural color, not a washed out yellow or gold.
- **Moon light.** Should be lit with cool light, or a bluish tone, at approximately 5,000 degrees Kelvin, to mimic the actual color of moonlight, which travels through the atmosphere twice before it lands, casting a blue hue on the earth at night.

LEDs' low energy requirement made 110-volt power obsolete for landscape lighting systems. Large trees that used to require 100, 150 or 250 watts of 110-volt power now can be lit with low-voltage, 12-volt systems with 20-, 30- and 50-watt lamps, respectively.



## 10 LANDSCAPE ILLUMINATION FOR SECURITY

It has been proven and documented by the FBI that a well-illuminated home and property are the best deterrents against intruders. However, that *does not* necessitate blinding floodlights controlled by motion detectors. After all, a security system is only the last line of defense in a layered plan for overall home security. Imagine, instead, an attractive landscape illumination design with a much gentler, less frantic effect. Think of it as preventative risk mitigation, integrated into a holistic strategy beginning at the conceptual phase of your project.

On a macro level, dark spots on a property create degrees of vulnerability. Weaving a plan for landscape illumination into the process exposes any activity to the homeowner and his or her neighbors, all but eliminating the potential threat. Consider sight lines when installing the landscape in the first place, to optimize the view from inside the home. For instance, consider planting trees for illumination during the design phase, in areas where darkness could otherwise shroud a potential intruder. Trees should not provide hiding places for trespassers, but rather opportunities for eliminating them.

People are spending more and more time at home, so clients are increasingly concerned with security from the conceptual phase onward. We have all experienced that “black glass” or “onstage” effect of looking out the window into utter darkness and feeling eerily aware that we are both conspicuous and blind. Why wait for an incident to install security measures? Though security flood lighting can feel like a solution that is worse than the problem, there is an attractive alternative. Landscape illumination exists to create a nighttime oasis for clients who want to enjoy their landscapes in the evening. One integral measure in achieving that end is eliminating the “black glass” effect.

## 11 SLEEVING

Place plenty of sleeves to allow for ease of power access after the hardscape and landscape have been installed. During the design phase, consider placement of sleeves wherever planting or lawn areas will be cut off from one another by pavement. The contractor that installs the hardscaped area should install the sleeves in the gravel base during construction. Note sleeve placement on a plan and permanently mark it in the field, with a light small notch on both edges of the pavement or other marker, to avoid unnecessarily disturbing adjacent landscaped areas in search of the sleeve location.

When providing sleeves for each area, there should be at least two 2-inch PVC sleeves or at least one 4-inch sleeve. But please note, the 4-inch PVC has a higher likelihood of heaving and causing complications under the pavement. Walls and multi-level terraces also should be sleeved with flexible, but not ribbed, PVC pipe that does not have elbows that would impede access for the wire. This rule applies for all patios, pool decks and walks. Many areas will not be accessible if the sleeves are not installed, because they are too wide to push sleeves under them later. This may result in the inability to achieve the client’s desired lighting objectives at all, and will certainly incur additional time, effort, and cost later.



## 12 THE POWER SOURCE

Landscapes today can be effectively illuminated with a quality 12-volt LED illumination system, including trees of over 10-inch caliper and more than 20-feet tall, which once required 110-volt power. Low-voltage illumination requires a transformer to convert the existing 110-volt power at an outlet to 12 volts. Generally, a regular or GFI outlet will work. Make sure to have a professional confirm the viability of any outlets in question. If there is not a viable, strategically-located outlet, whether central on the property or one in each area, then hire a licensed electrician to install one with sufficient amperage available. Select a transformer with the appropriate wattage based on the total amount of power required by the system, including any potential future phases.

Locate the power source centrally to ensure the most efficient wiring to reduce voltage drop that occurs over long wire runs. An additional wire run may help sidestep that issue. The transformer must be accessible from all areas that need to be illuminated. If it will not be accessible through planting or lawn areas, weave sleeves into the plan before hardscape features are installed. Remember, no sleeves, no lights. Lack of sleeving severely limits the client's options. Usable outlets likely are available on the outside of a house or in a garage, so make sure to maintain access to the power as concrete is poured or structures are built. Watch out for holiday lights, refrigerators or freezers, and heavy-duty power equipment that each draw significant power. They often render an existing outlet unusable, so take care not to overload it. The client will end up with a tripped breaker when the illumination system kicks on for the first time.



If a home is under construction, determine the power needs and controls required for the illumination system before closing up the walls. It is *far* less costly to the client if the general contractor does this work while still on site, rather than contracting someone else to do the work retroactively. If you determine well ahead of time whether the illumination is going to be controlled by an integrated automation system, you can ensure circuits and outlets are available and can be controlled effectively. If a swimming pool is being proposed or installed, the pool company or their electrician can easily add additional circuits, outlets and sometimes controls while on site. Each of these proactive considerations work to protect the client's budget and timeline.

When plugging a transformer into an existing outlet, a permit is usually not necessary, but check your local municipality to confirm whether or not the lighting contractor on site needs to be a licensed electrician. When determining power and transformer needs, consider phasing and potential future additions. Upsizing a transformer from the beginning is simpler and more cost-effective than purchasing a larger one later and reducing the number of time clocks and photocells that would be needed. If an additional transformer must be added later in the process, the second set of controls may not perfectly sync with the first set.

Occasionally, the client may want to control the system with a switch inside the house, requiring additional interior electrical work. It is also possible to add a 110-volt time clock and photocell, if necessary. Always ask the client in advance about their preferences for controls. The transformers are designed to be mounted indoors or outdoors. An outdoor transformer is preferable whenever possible to allow for easy access for maintenance, so the client does not need to be home when a crew is on site.



## 13 CONTROLLING THE SYSTEM

A time clock or photocell provides the best control for the power to the illumination system. If individual areas are to be controlled separately, each would require its own transformer. Home automation systems are popular, but simple controls for outdoor illumination are far more reliable and easier to operate. Over all, high-tech controls tend to dramatically complicate the process of maintenance and adjustment. Difficulties arise when outdoor technicians cannot access indoor controls. The home automation company would have to coordinate with the

illumination professional to remedy the situation. Wireless technology for outdoor controls can be unpredictable and inconsistent. Consider separate controls for an illuminated pool area, as it may not be attractive when the pool cover is closed. Another potential scenario for separate controls would be when a client wants the illumination in front of the home to be on longer than the back landscape. Down lights, bistro strands, and task lighting also can run on a separate switch.







## 14 INSTALLATION ISSUES

To ensure timely completion, acquire any necessary permits, obtain Architectural Review Committee approval and meet all codes, requirements, guidelines, and covenants imposed by cities, villages, and homeowner's associations. There are many reasons why illumination should be considered, planned for, and under contract prior to landscape installation. However, the *installation* of the system should take place near to or at the end of the landscape construction process. Make the client aware of any potential damage to existing trees, new plant material, and lawn wherever trenchers are being utilized.

Install the illumination system by hand after the landscape is completed for the best results, provided the crew is horticulturally oriented. If done properly, it will not be necessary for the landscape contractor to return to repair anything. Always leave the site looking as good or better than it began. After all, illumination should be the finishing touch! If the illumination is installed early in the process, wires will be invariably, unwittingly damaged by the irrigation, invisible fence, hardscape, or landscape contractors. If they do notice, they are unlikely to properly repair it, which creates maintenance complications. Frost heaving complicates the use of stake-mounted fixtures in climates where the frost reaches deeper than 3 inches, causing fixtures to lean noticeably or fall over. Hand installation allows the crew to carefully work around the previous work previously completed by landscape contractors. Take care to avoid damage to existing large tree roots. Run wire over, under or around them, rather than straight through them with trenchers

## 15 FIXTURES MOUNTED TO TREES

The cardinal rule of mounting fixtures in trees — either for up lighting the canopy and moon lighting the ground — is “do no harm.” Strapping fixtures to a trunk or limb is very detrimental, as the tree will grow around the straps, engulfing the mount, eventually leaving a wound in the tree’s exterior. Minimize wire use for the same reason. Use only arborist-approved mounting devices to allow for growth to continue unimpeded. Only mount a fixture to a trunk or limb of at least 3-inch caliper. And make sure fixtures are not placed so high as to compromise the effect on the ground.

## 16 SCHEDULING

Choose a reliable illumination contractor who will coordinate closely with the landscape installation. If much time elapses between the installation of the landscape and that of the illumination system, you will have missed your window of opportunity. Once plant materials take hold, they will not tolerate disruption as well as when freshly planted.



## 17 MAINTENANCE

Short cuts taken during the illumination installation phase inevitably bring about frustration and those dreaded callbacks. Any illumination system should receive minor periodic maintenance attention to ensure it continues to function at its full potential year after year. Typical services include, but are not limited to, the following:

- **Overall system review.** While on site, a thorough system review should be performed to ensure the entire system is functioning as originally intended.
- **Pruning.** The illuminated landscape is alive, growing, and ever-changing. Therefore, occasional selective pruning will need to take place to ensure seamless, continual enjoyment of the nighttime landscape. Proper pruning techniques are employed on an as-needed basis.
- **Cleaning.** Throughout the season mulch, insects, and other debris may build up on the fixtures. This can affect the overall appearance and impede the ability of the light to illuminate properly through the lenses. Have fixtures cleaned at least once a year.
- **Adjustment or repair.** Any fixtures, transformers, time clocks, or other equipment may need to be adjusted or repaired due to time changes, storm damage, pets, children, etc.
- **Lamp replacement.** Burned out lamps increase the power input to remaining lamps, so replace them in a timely fashion. This can be done on an as-needed basis or all at once.

A well-designed landscape illumination system, installed in a timely manner, can eliminate short cuts that necessitate frequent repairs or regular call backs to keep the system functioning properly every evening. Not only that, strategizing the work this way ultimately produces the most striking, impactful nighttime experience! So, add your landscape illumination professional to the team as early in your project as possible.





At Night Light everything we do we believe in challenging the status quo. We believe in thinking differently. The way that we challenge the status quo is by providing products and services that are the most efficient, well designed, simple, longest lasting and tailored to the specific needs, budgets and values of our clients. We just happen to provide design-build landscape illumination for those who appreciate the difference.

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