



# SECURITY LIGHTING DESIGN GUIDE

*Navigating how to design a reliable solar lighting solution*





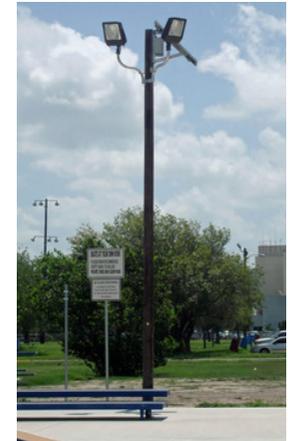
*Security lighting has been instrumental in deterring crime and improving security to the public, business, and residential spaces.*

*Additional lighting reduces crime by facilitating surveillance by authorities and communities after dark and enhances community confidence and increases informal social control.*

*Adequate lighting is key for good visibility and allows for more accurate descriptions and information.*

*Solar helps facilitate this for areas where grid power is unavailable and lighting is required or necessary.*

- *Provide clear visibility of areas from a distance to see anyone moving in or around the area*
- *Remove potential hiding places around routes that are traveled by pedestrians*
- *Provide facial recognition at a distance of about 30'*
- *Assist the use of other safety devices such as cameras in the area*
- *Deter crime against property and people*
- *Increase nighttime pedestrian traffic and the feeling of security*



*The responsibility of providing the security lighting falls on the property owner, business operator, or resident as it is not only assisting the surrounding area but also their own sense of self-security. What is also beneficial in this aspect is that they know the surrounding area and the flow of traffic better than a stranger to the area.*

*Installing security lighting is beneficial to both personal homeowners and business owners in different ways. To a personal homeowner the why is simple, not only does it drastically lower the chance of a break-in or theft of outside property, it also gives a much better chance at being able to identify the perpetrator or catching them on camera. This gives the homeowner a greater sense of control and safety.*

*For the business owner, the same sense of safety and control would apply, but it also brings a sense of safety and security to the surrounding area and the people and employees who frequent the business. Night employees would undoubtedly feel much better about leaving their work if there were safety lights to light up their parked car. Customers who shop at night are also much more likely to shop at a business who has taken the time and care to set up security lights to brighten up their area.*

## Residential Areas

*Residential areas and homes should implement security lighting to deter intrusions and help keep families safe from harm. Landscape lighting is a great way to illuminate areas outside a home and show boundaries more easily. Floodlights that are activated by motion detectors are another way to have the element of surprise while illuminating the area with a bright light for good visibility. Street lights along residential streets help make sure people that are out after dark are safe.*



## Unoccupied Areas

*Storage yards, construction sites, and industrial areas typically employ perimeter lighting to provide added security around the boundaries to prevent trespassers.*

*Container and rail yards have additional lighting between containers to prevent tampering with the shipments or to provide good visibility for workers in the area at night.*



## Office & Commercial

*Entrances are one of the most important locations for implementing security lighting for business owners. This allows people to see others come and go with ease. Parking lots and other areas around an office or commercial building also provides additional security for employees and customers. Finally, it helps law enforcement and business owners watch out for their property with accuracy.*



*They are key points that, in the case of robberies, having them well lit will be instrumental in a successful identification. Also having well-lit entrances and surrounding landscapes make the business much more respectable looking to prospective clients. Parking lots for employees and customers also need to be well lit for the safety of the people traveling to and from the building at night.*

*These are just some of the ways that different people implement security lighting dependent on their particular needs. The location of where you chose to place security lighting is very important and should be thought over carefully so when you chose to place the lighting it works exactly as it needs to so your needs are fully fulfilled. I hope the information in this post helps you on your way to successful security lighting.*

*As you can see the benefit of security lighting far outweighs the initial cost or hesitation of buying the lights. Nothing is worth more than the peace of mind and sense of safety that such a simple thing as lighting can bring to both the property owner and the business operator.*

# Residential Security Lighting

*Residential security lighting comes in many forms such as landscape lighting, perimeter flood lighting, and access lighting. Landscape lighting uses low light levels, but help by showing movement around the residence. Motion detected perimeter flood lights are a great way to secure the outside of a home as well as alert the homeowners of possible movement outside. Finally, access lighting, which is typically installed in doorways, allow the homeowner and visitor to clearly see each other. All of these types of lighting can be purchased from a home improvement store such as Home Depot or Lowes and have easy installation methods, especially when using solar powered landscape and security lighting. If you are working on the home's power, don't forget to turn off the breakers first!*

# Business Security Lighting

*When a business is needing security lighting, they are requiring much larger scale lighting systems. These lighting systems are usually designed by a lighting engineer and require extensive electrical knowledge to install. Businesses that are open after dark need brightly lit walkways, parking lots, and entrances to make sure the employees and customers are safe. After the business closes, the lights sometimes can be dimmed down to lower the power consumption. These lights are purchased through a lighting manufacturer or distributor and require electricians for installation. If solar security lights are being used, the voltage is much less, but hiring an electrician still may be your best option for installation, but is not required.*

*The implementation of LEDs allows for uniform lighting levels between various fixture sets. An old-style flood fixture which used to only produce a round area of light directly out from the fixture can now provide different distribution patterns and allow for lighting of different size signs with uniformity. SEPCO works with Hubbell Outdoor Lighting to provide different distribution patterns for every project maximizing the light output of each fixture.*

*LED lights also provide much better lighting with much less light loss from wasted light. Older style fixtures such as metal halide and high-pressure sodium had a lot of wasted light. The lumens of the lamp gets thrown in all directions and the fixtures were designed to push the light out everywhere with no real task lighting.*

*LEDs provide task specific lighting and are pushing the light in only in the area that requires lighting. This additional efficiency allows for the use of much less power, fewer lumens, and better overall lighting and uniformity.*



# KNOW WHAT GOES INTO DESIGNING A SECURITY LIGHT SYSTEM

*Every security lighting requirement varies from one to the next depending on light level requirements, area of coverage, and operation requirements. Understanding how each security project is designed will help you navigate the process efficiently.*

## **Step 1 – Find the area in need of light**

*The first thing to figure out is the area that needs to be illuminated. Is there a single small area, or a large spread out area? Finally, what fixture is going to work best for this application? Most overhead downlights have more area of coverage than some flood lights. Make sure to get ISO information before settling on one style or the next.*

## **Step 2 – Find out if electric is available**

*Is the electrical grid already nearby or would you need to call the power company to bring in electrical lines? If the electric needs to be brought to the area, how much is this going to cost? Depending on how far the grid electric is from the location of the needed lighting, this can be quite expensive. If the underground grid power has gone bad, look at the costs of trenching and repairing the area.*

### **Step 3 – Determine the lighting requirements**

*How much lighting is needed for the illuminating the area? Is the area located in a high ambient light area? Or is the area in a remote location with no competing light fixtures? Are there specific local codes or IESNA standards that need to be taken into consideration? These questions need to be answered before you can decide on how many fixtures and what wattages are required for completing the project.*

### **Step 4 – Find all alternatives**

*Solar power security lights are an option to traditional electrical lights. Solar area security lights do not need the electrical grid to be brought in as they are self-contained units that provide their own electric. LED light fixtures provide the best lighting solution by using lower amounts of power, better optics, and cost less in an overall solution. The solar unit can be sized to operate a single fixture to multiple fixture setups.*

## **Step 5 – Contact companies for quotes**

*The last step after gathering the above information is to contact companies for quotes. Just like anything else, get multiple quotes and weigh the pros and cons of every company and situation. The lowest quote is not always the best, so make sure to do your research on companies and products before you submit a purchase order.*

*Make sure your quotes come with an explanation of:*

**Battery Backup:** *How much battery backup you are offering based on days? Some solar light manufactures offer 2-day backup which is actually a bad solar system assembly design. SEPCO provides a battery backup which has a minimum of 5 days storage. This lengthens the backup times while prolonging the life of the battery.*

**Photometric Study:** *A photometric layout allows you to see the foot-candle and light distribution for every project. Without the photometric study, there is no representation of the light the systems will produce.*



## USING SOLAR LED LIGHTING SYSTEMS FOR YOUR PROJECT

*Since solar powered security lights are self-contained, the installation will be a snap. Setting the poles, installing the solar power assembly and light fixture with bracket will take less time and will not require additional trenching. This saves on costs and allows for the lighting to be implemented more quickly.*

*Solar lights that are in production for commercial applications such as signs, billboards, etc have a higher upfront cost, but they will pay for themselves immediately when looking at the total costs of installation for new construction or in areas where grid power is not feasible to bring in. These systems provide lighting for specific applications with different runtime settings. They also provide many days of stored power to provide continuous reliability, even during times of inclement weather.*

*Each system is built for the type and wattage lamp that will be utilized for the specific application. Lighting a large area will take much more power than lighting a small boat ramp, entryway, or playground. That makes the commercially manufactured solar lights more versatile to adapt from one job to the next. They range from small one LED fixture to multiple fixture setups to cover larger areas.*

*Solar lighting also has many excellent qualities. It is a green alternative to traditional lighting, it is low cost and practically maintenance free, and there is no power bill associated with utilizing solar since the power is not coming from the grid. Solar is also low voltage which makes it much safer to install and operate. Finally, solar lighting is renewable and promotes sustainability; its only requirement is the sun for operation.*

# THANK YOU FOR YOUR TIME!

*Kindly get in touch to let us know if you have any questions.*

*One of our solar specialists would be happy to help you choose the best option for your Solar Lighting project and provide clean, renewable solar energy!*

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