



BUILDING STRUCTURE LIGHTING DESIGN GUIDE

Navigating how to design a reliable solar lighting solution





Building structures require lighting to provide security to people using the building. The buildings can include pavilions, mailbox clusters, restrooms, etc., and can be located in remote areas where electricity is not readily available.

Making sure the area is properly illuminated will ensure the safety of users after sunset.

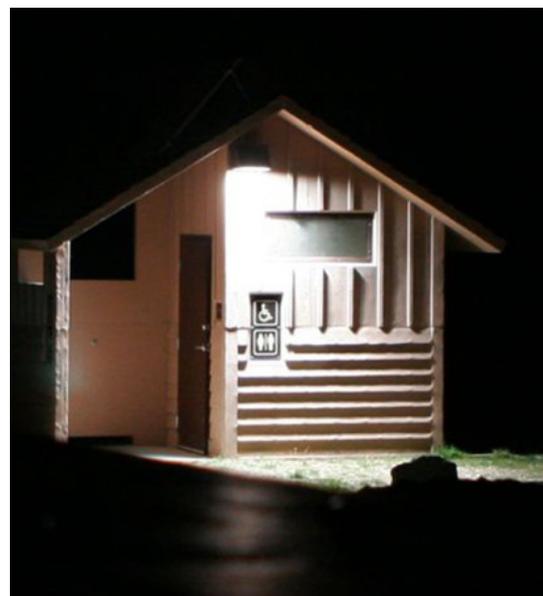
The lights can be motion activated or on all night, depending on the needs of the project. The lights can also shut off automatically after a set period of time, especially in areas where there is a closure or access is removed after a set time.

Different lighting levels, patterns of distribution, controls, operation, and other types of lighting needs should be gathered before purchasing the lighting.

This eBook will explain the why's, where's, and how's of building structure lighting. By the end of this eBook, you will have a better understanding of the lighting of different types of building structures and their requirements, and how solar lighting can fit remote building structure lighting requirements with ease.

Building structures provide shelter from the elements or a place of refuge. Lighting these structures at night will allow the use of the structure after dark. The benefit of lighting different types of building structures includes:

- Parks and other gathering places can stay open later*
- Aid security and police protection*
- Improve the safety of people using the structure*



Parks & Recreation

Parks provide a great gathering place for social events. Most parks have pavilions and restrooms on-site.

Proper lighting is provided for later gatherings and inside closed buildings provides safety and functionality of these types of buildings.

Since parks close after a certain time, the need for dusk to dawn lighting can be reduced in many cases.



HOA's

A lot of HOAs have pavilions and mailbox structures. These structures are used by residences of the HOAs and require lighting for safety and security.

Motion detectors can operate the lights to reduce electrical usage and be more efficient.

These areas are typically also secluded and do not have access to standard electrical power, making solar the most viable option.



High-powered LED fixtures can be used to provide optimum lighting levels for the application. SEPCO works with Hubbell Outdoor Lighting to provide different distribution patterns for every project maximizing the light output of each fixture. Since uniformity is key, creating a lighting layout for the application will provide the necessary information on the number and type of fixture required for the needed luminance for visibility.



KNOW WHAT GOES INTO DESIGNING A BUILDING STRUCTURE LIGHT SYSTEM

Every building structure lighting project requirement varies from one to the next depending on light level requirements, area of coverage, and operation requirements. Understanding how each 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 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 lights are an option to traditional electrical lights. Solar area lights do not need the electrical grid to be brought in as they are self-contained units that provide their own electricity. LED light fixtures provide the best lighting solution by using lower amounts of power, better optics, and cost less of 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 are you offering based on days? Some solar light manufacturers offer a 2-day backup which is actually a bad solar system assembly design. SEPCO provides a battery backup that has a minimum of 5 days of 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 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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