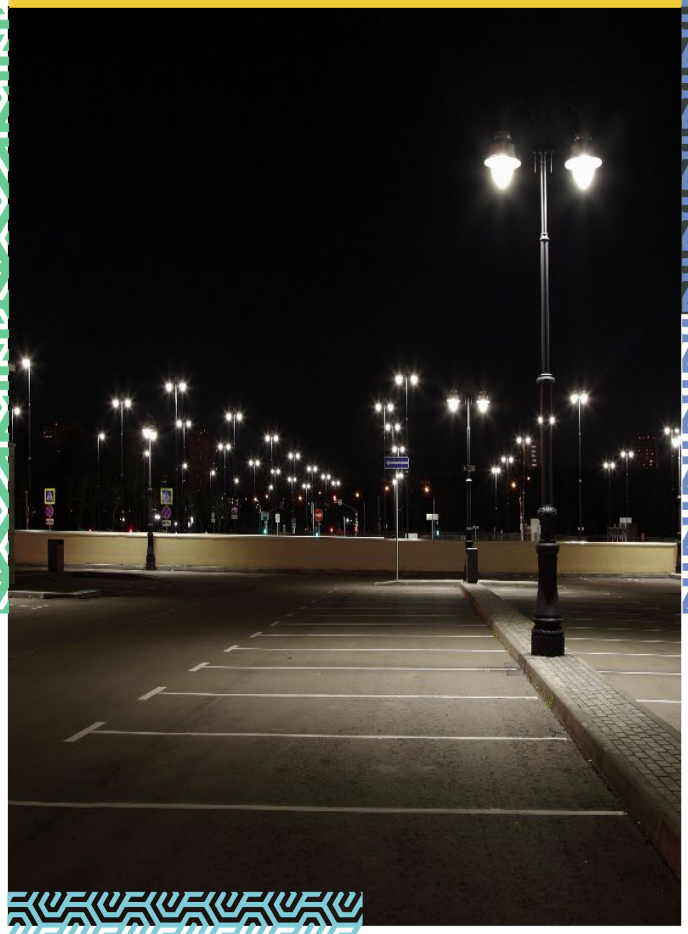
Risk control

Lighting for Car Parks



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Lighting for Car Parks

Introduction

The City & Suburban Electric Carriage Company (City & Suburban) opened the first multi-storey car park in the UK in May 1901. The 19,000 square foot facility had seven floors and space for 100 vehicles and an electric elevator to move the vehicles between floors.

In 1902 City & Suburban opened its second garage in a converted building in Westminster known as Niagara that could house 230 vehicles. At both facilities vehicles were housed, serviced, cleaned, and delivered to owners on request[1]. Today it is estimated that there are between 17,000 and 20,000 non-residential car parks located throughout the United Kingdom.[2]

When people think about car accidents it is likely that they may think about road traffic collisions on motorways or busy roads. However, rather surprisingly, one in five vehicle collisions occur within car park environments, costing an estimated £1.5 billion in car repair costs.[3]

Outcomes of Poor Lighting

Insufficient, excessive or inappropriate lighting can be a significant risk factor in a range of situations including car parks:

— Low light levels may hide wet or contaminated surfaces or changes in floor levels that lead to the UK's most prolific category of serious injury incidents - slips, trips and falls[4].

— Sudden contrasts in lighting can glare, dazzle and momentarily blind drivers and pedestrians causing collisions between moving vehicles and people or with other vehicles and structures.

— Flashing lighting can be distracting or alter visual perception affecting judgements and decision making regarding distance and movement that can result in collisions.

— Dimly lit or dark areas can encourage criminal activity.

Legislation

There is currently no specific piece of legislation relating to the illumination of public or private car parks, however, there are more general legal requirements, general principles and good practice standards in the form of HSE guidance and British Standards that should be taken into consideration by a prudent and conscientious organisation keen to reduce risks within its car park portfolio.

The owners or persons in control of car parking facilities, like other premises, have civil duties under the Occupiers Liabilities Act 1957[5] to take reasonable steps to ensure the safety of visitors to their property. While under the Health and Safety at Work Act 1974[6] employers are required to look after their employee's health, safety and welfare, as well as protect others (non-employees) from undue risk from the work activities and work environments.

The Workplace (Health, Safety and Welfare) Regulations of 1992 and accompanying Approved Code of Practice and Guidance (L24)[7] state that every workplace should have suitable and sufficient lighting, and that every workplace should be organised in such a way that pedestrians and vehicles can circulate in a safe manner. The concept of 'reasonably practicable' in these circumstances in the sense that the owner or controller of the premise must exercise judgment in balancing the reduction of risk against what it costs to achieve the reduction.

The HSE's guidance document - HSG 136: Workplace Transport Safety — An Employers' Guide[8] is a useful resource providing some general principles about safe parking areas.

It recommends that parking areas should:

— Be clearly sign-posted, well lit and easy to find

— Allow clear visibility for both drivers and pedestrians

— Have firm, stable, level, well-drained surfaces that are not slippery

— Have clearly marked parking areas with safe walking areas

— Be located close to where people need to go.

Ultimately, like many risk issues, our legal framework sets rather vague standards to be achieved but rarely dictates precisely how organisations should satisfy their obligations. This is a deliberate strategy to ensure that legislation is flexible enough to allow duty holders with differing risks and resources to find and apply a range of control solutions across a variety of situations, through the use of a risk based approach. For example it would be unreasonable to expect a temporary car park in a field for a summer fete to maintain the same level of safety provisions implemented as a city centre multi-storey car park.

Developers of new car parking facilities are expected to consider relevant standards and regulations at the planning phase of new construction projects and design and implement adequate lighting solutions.

There are two British Standards relating to lighting in either open or covered car parks – BS12646:2014 and BS5489:2013. These standards support the legal expectation that a process of risk assessment is applied that

will consider factors including an estimated level of use by both pedestrians and vehicles in order to establish appropriate levels of illumination.

Assessing Your Car Parks

It falls upon those who own or control car parks to arrange for a suitably competent person(s) to risk assess each car park and decide if the lighting levels are “suitable and sufficient” to allow people and vehicles to circulate safely and that other risks associated with poor lighting or coverage can be managed effectively.

To conduct a suitable and sufficient risk assessment, assessors are likely to need an accurate light meter and consider factors including:

- Is it an open or covered facility?
- The impact of the weather and surrounding features such as trees.
- The position, type and condition of existing lighting units.
- Is ‘borrowed lighting’ available from neighbouring facilities or from street lighting?
- The design and layout of traffic flows, parking bays, available space for manoeuvring.
- Blind spots created by structural elements.
- Are there stairs, steps or ramps for pedestrians to negotiate?
- The materials used in traffic route construction and current condition and colour of surfaces.
- The level of traffic usage and hours of access.
- Any history of accidents and incidents at the site.

If the conclusion of the assessment is that the current levels of lighting are creating potentially significant risk then the duty holder should take reasonably practicable measures to improve the situation. However, when changing or introducing new luminaires into an environment like a car park, care has to be exercised not to introduce additional hazards and risks and specialist advice may be required to select suitable equipment to avoid issues such as:

- Dazzle, glare or flicker.
- Overspill into neighbouring properties that could cause complaints or become a nuisance.
- Disturbance to the local natural environment caused by artificial lighting[9].

The risk assessment should be retained and reviewed periodically and when significant changes to the car park are proposed.

Conclusion

Lighting carparks in the correct manner is essential to provide a safe environment for those stakeholders that utilise them. Having too little or too much light may have a detrimental effect on user experience within the carpark and those adjacent to it.

Good design not only promotes safety for the user, but it is also ecologically sound by lowering the energy consumption. This can be achieved through the use of more efficient lighting products and smart control systems. The financial benefits can not only been seen through lower energy usage, but also through lower maintenance costs due to the life expectancy of the products being greater.

Ensuring you have sufficient lighting levels for the car park may seem straight forward but a large amount of planning is required to make it work. Basing your decision on how busy the car park is, its size, type and location will also assist you to build a picture of the risk. The implementation of inspections will also assist in the process to identify if more needs to be undertaken and if specialised advice should be sort.

References

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