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Digest

Obtrusive light from proposed developments

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Most new developments have some form of external lighting. Lighting enables outdoor work and sports to continue after dark, makes roadways and pathways safer and can improve site security and provide decorative effects to enhance the night-time environment. However, unwanted spill light may annoy neighbours, cause glare or distraction or result in sky glow.

This Digest outlines how such obtrusive light can be addressed when a development is proposed. It explains the current guidelines and how they can be applied to different types of lighting. It deals with issues like spill light from floodlighting and from indoor lighting within a proposed building such as an office block. It will be of interest to planning officials, developers, architects and lighting engineers.

Introduction

Obtrusive light, or light pollution, is defined as 'Spill light which, because of the quantitative, directional or spectral attributes in a given context, gives rise to annoyance, discomfort, distraction or a reduction in the ability to see essential information'[1]. It affects people in three main ways:

- upward light pollution, known as 'sky glow'
- light trespass
- disorientation from glare and clutter.

Sky glow occurs when light is shed upwards, either directly by light sources such as street lamps or floodlights or when reflected from the ground or other surfaces. Dust or water vapour in the air scatter the light to give an orange glow above our towns and cities, which obscures stars in the night sky. The orange colour is derived from the sodium lamps that make up most street lighting.

Figure 1: Car park lanterns giving upward and sideways spill light as well as useful downward light

The UK experiences some of the worst light-polluted skies in Europe[2]. More than half of the population is already unable to see the Milky Way in the night sky, and the problem is spreading into rural areas as artificial lighting at night increases[3].

Light trespass is a more localised issue, which occurs where artificial light sources are visible beyond the areas they are supposed to light. Often associated with poorly aimed floodlights or overlighting of areas, light trespass can disturb and annoy people, who may find their bedrooms lit to the extent that they cannot sleep.

Glare occurs when a source of artificial light is so much brighter than the area around it that it causes discomfort and inability to see – something that is very dangerous to road users. A common example is the effect of main beam headlights on an oncoming car when driving along a dark road, but it can also be caused by fixed lighting installations, such as a floodlight that directly faces