

A Guide for the Design of Lighting Schemes



**North Warwickshire
Borough Council**

September 2003

About this Guide

Artificial lighting is increasingly included in new developments. It can offer the benefits of increased security as in car parks; it can enable 24 hour working for some commercial concerns, it can extend the use of facilities into the evening such as at recreation and sports grounds, and it can be used to spotlight important buildings. However, it too, is being recognised as a form of pollution or disamenity, and in some cases it can be a nuisance. North Warwickshire is a rural area, whose character and distinctiveness arises from the lack of urban developments and characteristics. Lighting is often seen as intrusive, indicative of increasing “urbanisation”. The aim of this Guide is to provide guidance so that lighting schemes better respect their surroundings in North Warwickshire.

It will:-

- provide guidance on the best way to integrate lighting solutions into new development proposals, or when lighting is to be added to existing developments
- offer advice on reducing the negative impacts of lighting schemes, and
- require applicants to provide an assessment of the impacts of a lighting scheme.

Whilst the advice has been adopted by the Council in September 2003, it has also been endorsed by other groups, notably the Parish and Town Councils within North Warwickshire. Alterations to the Guide have been made as a consequence of representations received.

The Planning Control Service will improve the quality of built development in North Warwickshire as a consequence of this Guide. Its use on a day-to-day basis in amending and altering initial proposals will be seen as a measure of the service in adding quality to the built environment.

This Guide will be regularly reviewed.

1 Introduction

- 1.1 Lighting in itself need not necessarily be a problem. However, it can be intrusive where it is excessive, misdirected or poorly installed. The main problems arise from:-

Sky Glow – the glow which occurs when stray or poorly directed upward light, reflects off particles in the atmosphere. It reduces the ability to see the natural dark night sky.

Glare – the uncomfortable brightness of a light source particularly when viewed against a dark background.

Light trespass – the spillage of light when it strays beyond the area which it is designed to illuminate.

- 1.2 Particular concerns arise when it affects drivers, pedestrians or indeed residents in their own houses. It can also have severe ecological implications affecting the diurnal rhythms of both flora and fauna. In addition, there is also a blurring of the distinction between urban and rural areas, reducing the sense of remoteness, and rurality which is valued in countryside areas. Bad lighting too, can impact on the character and setting of Conservation Areas.

- 1.3 However, lighting schemes can bring a range of benefits. It can reduce the fear of crime, increase road safety, as well as enhance community benefits arising from the greater use of facilities, and underpin economic activity.

- 1.4 This suggests that lighting should be carefully directed, sensitively designed, and as such, considered as an integral part of any new development proposal. It is not an additional detail that should be dealt with at a later stage. In addition, the Council wishes to promote a sustainable use of resources. Lighting that is misdirected or wasted is not an efficient use of resources.

2 General Advice

2.1 The Council wishes to encourage thoughtful lighting schemes. The following guidance should be followed in all proposals that include, or are likely to include lighting elements.

Assess the Need for Lighting

2.2 Initial consideration should be given to the extent to which there is a need for lighting within the proposed development. Each application will need to contain an assessment. The following questions should be asked;

- Could the development proceed without lighting?
- Is lighting essential or desirable?
- Do the benefits of lighting outweigh the disbenefits?
- Are there any alternatives to lighting (improved site layout, site security, fencing, infra-red devices, CCTV)?
- What is the impact of the lighting on the local highway network and the local environment?

The Location of the Proposed Lighting Schemes

2.3 The Council will be unlikely to agree to lighting proposals if they are close enough to affect areas of nature conservation importance. Because of the negative implications for wildlife, external lighting will only be permitted in exceptional circumstances. Such areas will include Sites of Special Scientific Interest, Local Nature Reserves and Areas of Local Importance as defined in the North Warwickshire Local Plan 1995.

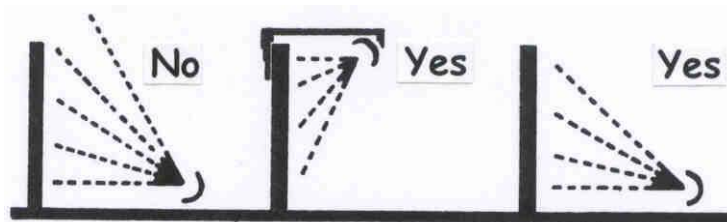
2.4 In order to protect the 'dark skies' of the countryside of North Warwickshire, lighting schemes in open countryside will be unlikely to be supported unless the applicant can demonstrate that the proposed scheme is the minimum needed for security and/or working purposes, and that obtrusive light is minimised to an acceptable level.

- 2.5 To protect the amenity of residential areas in our towns and villages, lighting proposals that are within or adjoining residential areas, will be unlikely to be supported unless the applicant can demonstrate that the proposed scheme is the minimum needed for security and/or working purposes, and that obtrusive light is minimised to an acceptable level.
- 2.6 Within our commercial areas, lighting schemes are more likely to be supported if they can show that they will have minimum impact on surrounding development, reducing glare or light spillage.
- 2.7 Where the location of lighting schemes would be likely to impact on Conservation Areas and Listed Buildings, they will be expected to respect and enhance these assets.
- 2.8 The Institution of Lighting Engineers has produced guidance on acceptable levels of illumination which relate to such locations. The Council will require applications to adhere to that guidance, and advise on how the proposal relates to those locations.

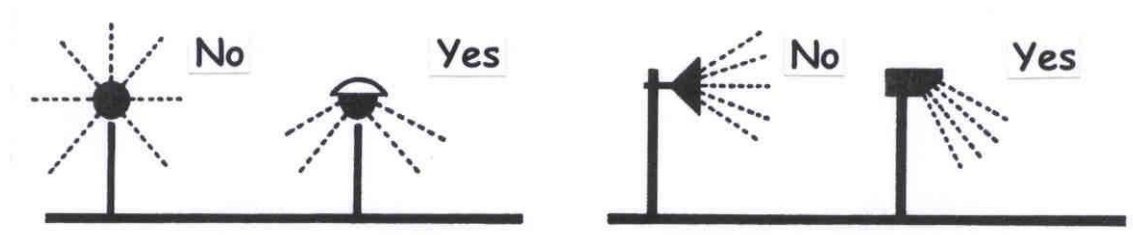
The Design of Proposed Lighting Schemes

- 2.8 The design of lighting schemes plays an important part in contributing to light pollution and thus should be included in the initial planning application as a material consideration. The following steps can help reduce intrusive light:-
- a) **Switch off lights when not required for safety or security.** Much energy is consumed and vast amounts of greenhouse gases are produced through the wasteful use of all night shop advertising and display lighting, the illumination of buildings and permanent domestic and industrial security lights. Conditions may be attached to planning permissions to secure this. As an alternative, infra-red devices do not produce glare or have an off-site impact.
 - b) **Direct lighting downwards** where possible to illuminate its target, not upwards. When buildings are floodlit from the ground, columns of light spray into the sky.
 - c) **Use specifically designed lighting equipment** such as shields and baffles. This helps to minimise the spread of light above the horizontal.

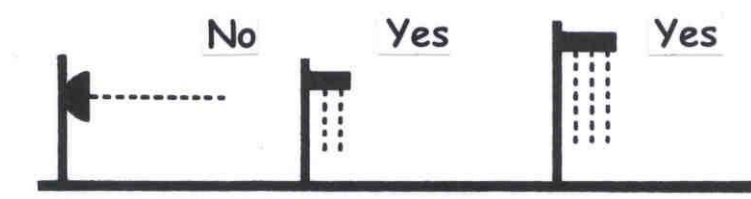
- d) **Do not over light.** It is poor design and a waste of money. There are published standards for most lighting tasks.
- e) To keep glare to a minimum, **ensure that the main beam of all lights is kept as close to 0° to the horizontal as possible.**
- f) Wherever possible **use floodlights with asymmetric beams** that permit the front glazing to be kept at or near parallel to the surface being lit.
- g) **Design lighting to be focussed inwards and not outwards from a site** so as to use the buildings themselves as guards.



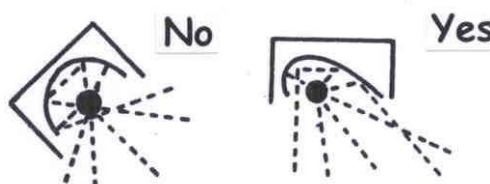
Use specifically designed lighting equipment that once installed minimises the spread of light near to, or above the horizontal.



Do not "over" light. It is a cause of light pollution and a waste of money.



To keep glare to a minimum, ensure that the main beam angle of all lights directed towards any Potential observer is kept below 0 degrees.



Wherever possible use flood lights with asymmetric beams that permit the front-glazing to be kept at or near parallel to the surface being lit.

3. Specific Advice

3.1 Some development proposals warrant more specific guidance.

Signs and Advertisements

- 3.2
- The level of lighting should relate to its surroundings – ie only being visible on its “public” face.
 - External lighting through carefully located spotlights, strip lighting or backlighting are the preferred choices of lighting, particularly for fascias.
 - Only the fascia should be highlighted.
 - Signs need only be lit whilst people are around to view them. It is reasonable to restrict the times of their use.

Sports Lighting

3.3 The use of floodlighting has extended the length of time that sports facilities can be used. However, facilities are often located in areas where the surrounding brightness is low. Careful consideration is therefore required to ensure that the most appropriate lighting schemes are in place.

- Lighting should be specifically directed so as to minimise spillage.
- The number of lights used should be minimised to a level required to ensure safe play.
- Consideration should be given to the relationship between the use of the facility and the interests of conservation, amenity and safety.
- Floodlighting should not be used after 2200 hours.
- Consideration should be given to the daytime appearance of lighting poles and towers. To minimise the impact of their appearance, light colours should be used if the lights will be seen against the sky. Dark colours should be used if the backdrop is vegetation. Matt colours should always be used.
- The use of retractable poles which can be lowered to the ground when not in use should also be considered.

Security Lighting

3.4

- Lighting should be controlled by photo-electric switches and should be set to the minimum setting. Sensors that can be tripped by road or footway users should

be avoided.

- A 150w (2000 lumen) tungsten halogen lamp is more than adequate for domestic security lighting. Lamps of higher intensity create too much light, more glare and darker shadows. For all-night light at low brightness use a compact fluorescent porch light of 9w (600 lumen).
- Develop an integrated approach to security lighting, balancing levels of light with other lighting in and around the site to avoid glare and light spill as well as dark spots.
- Lighting should be directed down and mounted below the property boundary height.

Commercial Developments

- 3.5
- All lighting should have a clear purpose. The use of lights simply to create a presence at night is not supported.
 - Concentrate lights where they are needed and establish a clear hierarchy with minimum lighting around the outer perimeter of the complex.
 - Reduce the scale of street/road lighting, and consider height and spacing of lights in relation to buildings.
 - Position promotional lighting/signs on the public face of the building so that they are not visible on the private side, for instance from open countryside.
 - Consider the design of the overall site to minimise the use of lighting.

Residential Development

- 3.6
- Consider whether lighting is required and where it will be most effective.
 - Keep lighting in new residential areas in balance with that of the settlement as a whole, and lighting on adjacent road junctions.
 - Consider views from the surrounding countryside, and avoid a line of lights, defining the edge of a village.

Farms and Garden Centres

- 3.7
- Mount lights below the roof height of buildings and direct light downwards to where it is needed.
 - Avoid the use of sensors which can be tripped by animals.

- Position lights so that they are shielded by buildings, and are not visible from the surrounding countryside.
- The potential impact of light from glasshouses should be considered at the planning application stage.

Car Parks

- 3.8
- Direct lighting downwards and design equipment to control levels of light spill and glare.
 - Site lighting equipment carefully, making use of the backdrop provided by any existing vegetation and introduce new planting within the car park to help integrate the lighting structures and minimise the visual impact of both equipment and lighting.
 - Consider combinations of columns and lower level lighting.

Petrol Filling Stations

- 3.9
- Canopy lights should be positioned so as to avoid spill from its sides.
 - Avoid internal lighting of the whole fascia.
 - Design and position signs so that they are only visible from the road and not from the surrounding landscape.
 - Avoid large monolith signage wherever possible.

4 The Planning Application

- 4.1 Artificial light is not classed as ‘development’. However, planning permission is likely to be required for the structures and installations associated with lighting, especially if they are substantial and effect the external appearance of a building.
- 4.2 The maintenance, improvement or other alteration of a building that does not materially effect its external appearance, does not require planning permission. This means that planning permission for security lights on houses is not usually required. The installation of lighting for larger developments including car parks, industrial estates, sports fields, shops, signs and light fittings not attached to houses is likely to require planning permission.
- 4.3 Listed Building Consent is required for lighting attached to Listed Buildings as it will alter the character of the building. Other consents may be necessary too depending on the circumstances.
- 4.4 We advise prospective applicants to check with the Council before installing any lighting scheme. When contacting the planning division you should give information on the nature and extent of the proposed scheme, ie - number of lights and their likely output, the height of the lighting columns (if applicable) and the area to be lit. This will enable us to give informed advice.
- 4.5 In addition to the information normally required for the submission of a planning proposal, applications that involve artificial lighting should also include the following information.
- A statement of why the lighting is required; the proposed frequency of use, and the hours of illumination.
 - A site plan showing the area to be lit relative to the surrounding area, indicating parking or access arrangements where appropriate, and highlighting any significant existing or proposed landscape or boundary features.
 - A technical report, prepared by a qualified lighting engineer, setting out the types of lights, intended angles of the light units and any proposed shields, their performance together with the height and spacing of lighting columns, the light levels to be achieved over the intended area, and the site boundaries.
 - An assessment of the likely impact of the lighting scheme on the surrounding area, by that qualified engineer.

Planning Conditions

4.6 Where the Council grants planning permission for a development, conditions controlling the lighting scheme may be applied. These may include:-

- Limits on the hours of illumination
- Lighting levels
- Column heights
- Specification and colour treatment for lamps and luminaires
- The need for full horizontal cut-off
- No distraction to the highway
- Use of demountable columns
- Retention of screening vegetation
- Use of planting and bunding to contain lighting effects
- Erection of demonstration luminaires
- Review of lighting impacts after installation.

The conditions will be applied as necessary by the Council to help minimise the negative effects from the lighting schemes of new proposals, particularly from glare and light trespass, in areas of wildlife importance, historic importance, open countryside and where a residential use is predominant.