



CHURCH FLOODLIGHTING

The floodlighting of church buildings has become increasingly popular during the past few years, probably reaching the height of its popularity during the run up to the Millennium. The CPRE (Council to protect Rural England) claims that National Lottery money funded some questionable church lighting schemes, and asks whether it is always appropriate to floodlight country churches. “There is nothing more beautiful than a darkened church spire silhouetted against a full moon.” (*Night Blight* CPRE 2003)

The first question the PCC must address is whether it is actually looking for floodlighting or really needs security lighting, which calls for different considerations and a different design.

It is widely believed that floodlighting a church reduces crime. In reality things are less clear cut.

At this point the PCC may wish to read the DAC advice note on Security Lighting.

As Christians, in deciding whether to floodlight at all, we are bound to consider the questions of light pollution, responsible use of energy and impact on wild life.

❖ **Light Pollution**

- i. One of the glories of creation is the night sky. On a dark clear night you can see some 3,000 stars, and the Milky Way splashed across the heavens, but 55% of the UK cannot see the Milky Way. “90% of people who wish to see the night sky in the UK probably suffer light pollution at least noticeable enough to hinder observation.” (B. Mizon *Light Pollution* 2001)
“Civilization has fallen out of touch with night. With lights, we drive the holiness and the beauty of night back to the forests and the seas; the little villages, the crossroads even, will have none of it. Are modern folk, perhaps, afraid of night? Do they fear the vast serenity, the mystery of infinite space, the austerity of stars?” (Outermost House by Henry Beeston, 1933.)
- ii. Concern has been expressed by the growth of floodlighting and the resulting increase in light pollution by astronomers and research scientists, and by safety experts in the aircraft industry,
- iii. We must take care that church floodlighting does not cause a nuisance to neighbours. “Light Trespass” can harm the quality of life for neighbours and rob them, or their children of sleep.
- iv. Special consideration may be necessary in small villages and on the edge of open countryside in rural areas where ambient light levels are low.

❖ **Energy**

The church must set an example in not wasting energy. Most electricity is produced by burning finite fossil fuels. It is estimated that up to 500,000 tonnes of fossil fuels are burnt each year to produce electricity for exterior lighting across England.

❖ **Global warming and climate change**

From the smoke stacks of power stations flow air pollutants which cause acid rain and harm human health, as well as the carbon dioxide gas which we know to be gradually building up in the earth's atmosphere, trapping heat, changing climates and raising the sea level.

❖ **Wildlife**

There are many potential impacts on wildlife, bearing in mind that many of our churchyards are managed as small nature reserves, and others are close to countryside.

“All living things adjust their behaviour according to natural light. Man's artificial light which is now powerful enough to turn night into day, can create stress and confusion. If not properly controlled, obtrusive light could present serious physiological and ecological problems not just for the present but for future generations.” (*Guidance notes for the reduction of light pollution – The Institute of Lighting Engineers*)

- i. Many animal and plant species are known to be sensitive to the changes in day length. The changing light cues changes in their own lives concerned with growth and feeding, reproduction and migration.
- ii. Some birds use the stars for night time navigation.
- iii. Some nocturnal species are not adapted for activity in bright light.
- iv. Researchers believe that the glare from floodlights round a church draw insects from more than a quarter of a mile in every direction, depriving bats, birds and other animals over an area of a square mile or more of their food source. “An owl and bats used to come to our garden at night. Now they don't come anymore.” (*CPRE volunteer from Nottinghamshire*)

❖ **The next step**

Having taken the decision that the PCC wishes to go ahead with a floodlighting scheme, these are the issues that should be addressed next.

Is it responsible or necessary to flood light the church every night? Floodlighting, or 'decorative lighting' could be reserved for Christmas, Easter, Patronal Festivals, major Saints' Days, Concerts and other special events in the church, and national days of rejoicing. It might

even be a small temporary system set up when needed. Permanent cabling could be installed with discrete, weatherproof, switched sockets into which temporary floodlights may be plugged.

It should always be turned off after 10 or 11 p.m. using electronic timers, unless there is a midnight service.

Avoid over lighting, use the minimum wattage of lamp to achieve the required result (generally 150 watts), fit hoods and shields and angle down where possible to minimise light spillage and pollution, be careful where the light goes, and ensure that the floodlighting will not distract drivers on nearby roads or disturb nearby residents.

Equally disturbing is light reflected from an overlit church. A contrast between the colour used to floodlight the church and the colour of the lighting in the surrounding area is more effective in distinguishing the building from its surroundings than brighter lighting. Additional small and unobtrusive light sources mounted on or in the building, perhaps within window embrasures and door openings, will be all that is needed to define the form of arches and openings, the texture of stonework or architectural features, but care must be taken that a particular feature is not over emphasised.

Metal Halide and Mercury lamps are far more suitable than high pressure sodium lamps, which produce an unpleasant yellow light, although they have a higher light output per watt of energy.

This is the point at which the PCC needs to take the advice of the consulting architect, who could obtain more technical advice sheets from the DAC secretary.

At this stage the PCC may wish to come to the DAC for informal advice, in which case the following information will be required.

❖ **DAC Requirements for Informal Advice**

A statement of need justifying the installation of floodlighting. Full details of the time at which the lighting will be switched off and the number of nights in the year when the system will be used.

Also:

1. A simple drawing showing the position of the luminaries, trenching and the cable routes. The plan should also show relevant features such as trees, paths, gravestones and neighbouring buildings.
2. The point at which the cables leave the church.
3. First thoughts on the type of lamp to be used, the colour of the light and the colour temperature in degrees Kelvin.

❖ **DAC Requirements for Formal Advice**

1. A scale drawing showing the position of the luminaries, trenching and the cable routes. The plan should also show relevant features such as trees, paths, gravestones and neighbouring buildings.
2. Confirmation that MICC cable with PVC sheathing minimum size 1.5mm will be used within the church and PVC/SWA/PCC minimum size 2.5mm for exterior cables, where trenching is needed 450 mm deep with a warning strip.
3. Information about the control equipment.
4. The method of installing cables from interior to exterior. (The committee recommends drilled and bushed 20 mm holes about 150 mm from the ground.)
5. The method of fixing floodlights, on the building and on the ground.
6. The type of lamp to be used, the colour of the light and the colour temperature in degrees Kelvin.
7. Illustration of the floodlights
8. Security measures (e.g. wire protection)
9. Plans for drainage around the floodlights fixed on the ground.
10. The DAC requires that any new electrical items are not fitted to a system that is already overloaded or even dangerous. You should therefore include a current electrical test certificate.

Note

The DAC can provide more technical advice to your architect.