Chapter 14: Lighting for hospitals

14.1 Functions of lighting in hospitals

The lighting of hospitals has two main functions. The obvious and most important function is to meet the task requirements in each area of the hospital. Some of the tasks to be carried out will require exacting levels of visual performance. Indeed, the safety of the patients may depend on the level of visual performance achieved. The second and equally important function is to create an environment that is visually satisfying, wholly appropriate and 'emotionally compatible.' Lighting can influence human emotions and feelings of well-being. Good lighting will also help promote an air of quality and competence within the hospital.

Extensive guidance on the lighting of hospitals is given in SLL Lighting Guide 2: *Hospitals and health care facilities* and other publications (Dalke et al., 2003).

14.2 Factors to be considered

14.2.1 Daylight

The provision of some daylight and a view out is much appreciated by patients, so daylighting and access to windows should always be considered when designing the lighting of hospitals. However, care is necessary to limit sun penetration so that thermal and visual discomfort do not occur. Further, the amount of light coming through the windows at night needs to be restricted if sleep is to be undisturbed. This means that windows should be fitted with adjustable blinds. Where daylight makes a major contribution to the lighting of the space, the electric lighting should be fitted with an automatic switching or dimming system so that energy waste is avoided.

14.2.2 Lines of sight

Hospitals differ from many places in that some common lines of sight are unusual. For patients in hospitals, common lines of sight are towards the ceiling and the upper parts of the opposite walls. Such common lines of sight mean that special care is necessary to avoid glare to patients while still providing good visibility to doctors and nurses.

14.2.3 Colour rendering requirements

Skin colour, eye colour and the colour of tissue and fluids can be important guides to diagnosis and treatment. Therefore, there are strict colour rendering requirements placed on the light sources used in the clinical areas of hospitals. Clinical areas include ward units, consulting rooms and operating departments. Ward units include bedded areas, ward corridors, nurses' stations and treatment rooms. All fluorescent lamps within these areas should have a CIE general colour rendering index of at least 80.

In specialist areas such as those used for examination or treatment, a minimum CIE general colour rendering index of 90 is recommended. However, these areas generally do not require the general illumination to be provided by such lamps, only the immediate task area. This task area lighting will usually be provided by dedicated fixed or mobile examination lamps.

It is essential that light sources with different colour rendering or colour temperature characteristics are not used in the same area. If the bed head reading lights are intended to supplement the general illumination for the purposes of patient treatment, then the light sources used in the reading lights should have a CIE general colour rendering index of at least 90.