15.2.4 Energy efficiency

Part L of the Building Regulations applies to quasi-domestic dwellings (SLL Factfile No.9, 2006). This imposes limits on the type and amount of lighting equipment that can be permanently installed although there is a useful loophole in that plug loads, such as table lamps, are unrestricted. Further, there are proposals to restrict the supply of conventional incandescent lamps over the next few years, the intention being to increase the use of light sources with higher luminous efficacies, such as tungsten halogen and compact fluorescent. When in the form of recessed downlights, tungsten halogen can pose a fire hazard if not properly installed, as discussed below, and compact fluorescents may not conform to the advice about light source colour properties given above.

15.2.5 Safety

There are three particular aspects of safety that should concern the designer of quasi-domestic lighting. The first involves the use of recessed tungsten halogen downlights. These are an increasingly popular approach to domestic lighting. The problem is that these lamps get very hot with the result that flammable material should be kept well away from them, a fact that is sometimes forgotten once they have been inserted into a hole in the ceiling. Where downlights are installed in a ceiling there is concern about the preservation of the fire barrier represented by the ceiling and the transfer of sound between rooms. The easiest way to overcome these problems is to use downlights with built-in fire and acoustic protection. An alternative approach to minimising the fire hazard is to install covers over the back of the downlights to ensure each downlight is separated from other materials.

The second applies to bathrooms and shower rooms where there are restrictions on the type of luminaire that can be installed in different locations (Table 15.1). These restrictions are designed to minimise the likelihood that someone will get an electric shock while in contact with water. Washbasins are not covered by the regulations but are usually treated as zone 2.

Table 15.1 Zones identified for luminaires in bathrooms and shower rooms by the 17th edition of the IEE Wiring Regulations

Zones	Location and limitation
0	Any luminaire installed inside a bath or shower tray which can hold water should be low voltage (maximum 12 V) and have an IP rating of IPX7
1	Any luminaire installed in the volume above a bath or shower tray to a height of 2.25 m from the bottom of the bath or shower tray or for a horizontal distance of 1.2 m from the center of a shower outlet and vertically up to the height of the shower outlet or 2.25 m, whichever is the higher, should have a minimum IP rating of IPX4 or be of safety extra-low voltage with the transformer beyond zone 2
2	Any luminaire installed outside zones 0 and 1 but inside the volume specified by a boundary set 0.60 m horizontally outside the perimeter of the bath or shower tray and 2.25 m vertically above the floor, should have a minimum IP rating of at least IPX4 or be safety extra-low voltage with the transformer located beyond zone 2

The third requires the installation of an emergency lighting system (see Chapter 8). Emergency lighting is required for the safe egress of residents in the event of an emergency. In some quasi-domestic dwellings, such as care homes for the elderly, some of the residents will almost certainly be physically incapacitated and/or could be mentally impaired.