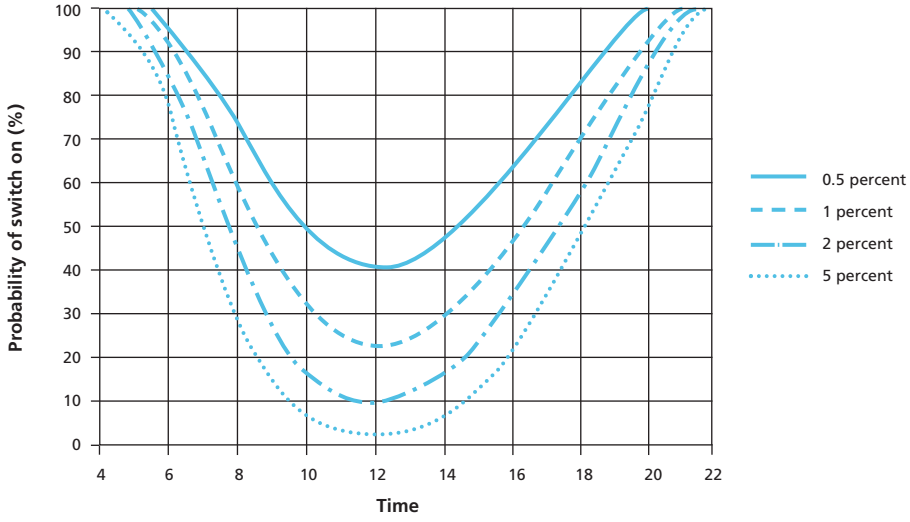

Figure 6.3 The probability of electric lighting being switched on at different times of day for locations with different orientation-weighted daylight factors (from Crisp and Henderson, 1982)

If luminaires are logically zoned with respect to daylight with convenient pull-cord switches for the occupants to use, each zone can be treated as a separate room. The probability of switching will differ from zone to zone, depending on the minimum orientation-weighted daylight factor in each zone. Figure 6.3 will still be applicable but the minimum orientation-weighted daylight factor, and consequent energy savings, must be estimated separately for each zone. If switching is to be relatively unnoticeable to the occupants, the proportion of the electric lighting switched should not be more than 20 percent of the total task illuminance.

Automatic photo-electric controls can be used to switch electric lighting in response to daylight. Figure 6.4 shows the percentage of a normal working year during which the luminaires would be off, as a function of the orientation-weighted daylight factor and of the illuminance at which the luminaires are switched; the 'design' illuminance. These curves assume that 'on' and 'off' switching will occur at the same illuminance. Where this is not the case, where the luminaires are switched off at an illuminance appreciably greater than that at which they are switched on, the mean of the two illuminances should be taken as the 'design' illuminance.

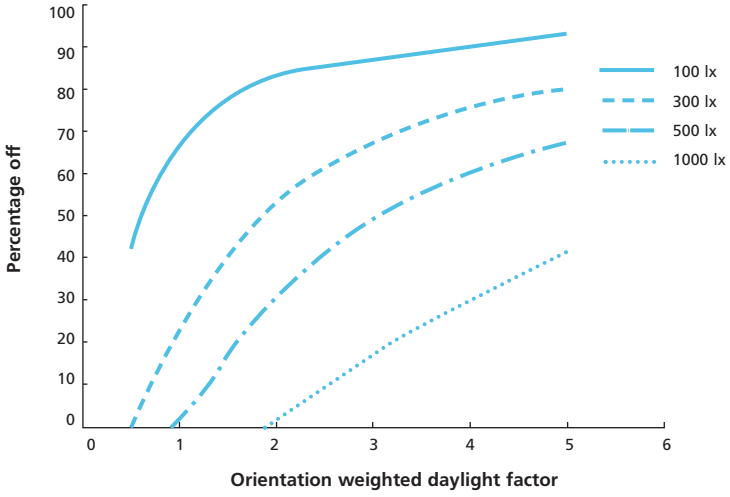

Figure 6.4
The percentage of the working year that electric lighting will be switched off plotted against orientation-weighted daylight factor for different 'design' illuminances, assuming an on/off photoelectric switching system (from Hunt, 1979)