

6.2.3 Visual amenity

There is no doubt that lighting can add visual amenity to a space which can give pleasure to the occupants but whether this provides a more tangible performance benefit is uncertain (Boyce, 2003). Studies have shown that people respond to the lit appearance of a room on two independent dimensions: visual lightness and visual interest (Hawkes et al, 1979, Loe et al, 1994, 2000). Visual lightness describes the overall lightness of the space, which is related to the average luminance of vertical surfaces. Visual interest refers to the non-uniformity of the illumination pattern or the degree of 'light and shade'. People prefer some modulation in the light pattern rather than an even pattern of illumination, the magnitude of the modulation depending on the application. There is some evidence that visual lightness and visual interest are inversely correlated (Figure 6.2).

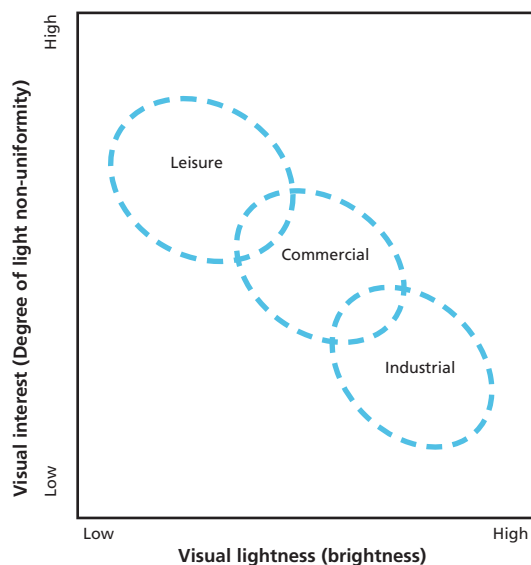


Figure 6.2

Map showing the possible locations of three application areas on a schematic diagram linking subjective impressions of visual interest and visual lightness

Although variation in the light pattern is desirable, it has to be seen as meaningful in terms of the application and the architecture. To provide random patches of light in an uncoordinated way for no reason other than to provide light variation would be a poor design solution. Acceptable examples could be highlighting displays within a retail outlet, or a floral display in a hotel lobby.

There are two further areas of visual amenity that need to be considered and these are in the colour rendering and colour appearance of the lighting. The required colour rendering will depend on the functions the lighting is designed to fulfill. Where fine colour discrimination is required, light sources with a CIE general colour rendering index of at least 80 should be used. Where a natural appearance is required for people and objects, light sources with a CIE general colour rendering index of at least 60 and preferably higher should be used. Where such functions are not important poorer colour rendering light sources can be used. As for colour appearance, a light source with a correlated colour temperature (CCT) ≤ 3000 K will appear warm and if it has a CCT ≥ 5300 K it will appear cool (see Section 1.4.3). Where on this scale from warm to cool the colour appearance should be will depend on the nature of the space. In quasi-domestic situations, such as hotels, a warm colour appearance will be required but in commercial interiors a CCT of around 4000 K is appropriate as it blends reasonably well with daylight. The designer should be wary of the names applied to light sources as these can be misleading and differ between manufacturers. The best way to choose colour appearance is through practical trials.