

the ceiling is not conspicuous and its contribution to the illuminance on the working plane is usually small. In a big room, the contribution of light reflected from the ceiling to the total illuminance on the working plane is usually large and the ceiling occupies a substantial proportion of the visual field. Achieving an acceptable reflectance for the ceiling cavity requires a white or near-white ceiling. In small rooms a low-reflectance ceiling may be acceptable, although if the room is predominantly lit by daylight from side windows the room may appear gloomy if too low a reflectance is chosen. Where indirect lighting is used, a white or near-white ceiling is essential, regardless of room size.

Wall reflectance is usually unimportant to the lighting of a large room except for positions close to the wall. If low wall reflectances are used, the illuminance in the adjacent areas may be too low. In small rooms, wall reflectance is always important. High wall reflectances will enhance the illuminance on the working plane and increase the inter-reflected component of the lighting, thereby improving uniformity. The importance of having a high wall reflectance is increased when the room is predominantly lit by daylight from side windows. In all rooms, unless a high-reflectance finish is applied to the window wall, the luminance difference between the window wall and the daytime view through the window may be excessive and uncomfortable.

All this suggests that a high-reflectance finish to walls is highly desirable. However, the use of high-reflectance wall finishes should be treated with caution. Large areas of high reflectance may compete for attention with the task areas, leading to eyestrain and feelings of discomfort. Furthermore, if the high-reflectance surfaces are produced using gloss paint, reflected glare is likely to occur. The effective reflectance of the wall finish will be reduced by windows, unless light-coloured blinds or curtains are used. Dark wall hangings, cupboards or other equipment above the working plane will also reduce the effective wall reflectance. Where the perception of people's faces is important, for example in lecture theatres and conference rooms, the brightness of the walls needs to be controlled as these form the background against which people are seen.

Dark floor cavities will tend to make ceilings and walls look underlit, especially when daylight from side windows is used; however, using very light floors tends to create a maintenance problem. Recommendations for room surface reflectance are given in section 2.3.5, Room surfaces, and the effect on installed load is discussed in section 2.4, Energy efficiency recommendations.

1.7.2 Surface colours

Surface colour can be classified by the use of a colour system, which allows colour to be specified unambiguously. For the purposes of lighting design and calculation, information on the reflectance of surface colours is required. Several colour systems exist, some of which can be used to estimate reflectance. Further information on the most commonly used systems is given in *Lighting Guide 11: Surface Reflectance and Colour*. In the Munsell system, for example, each colour is specified by three quantities: hue (whether a colour is basically red, yellow, green, blue, purple etc.), value (the lightness of the colour, related to its reflectance), and chroma (the strength of the colour). This classification forms