at any point in the 'core area' of the interior should not exceed 5 : 1. The core area is that area of the working plane having a boundary 0.5 m from the walls (Average illuminance, see CD).

Installations lit by ceiling-mounted arrays of luminaires designed by the lumen method (see section 3.8.3, Average illuminance (lumen method)) following the conventional spacing and layout criteria will usually satisfy the uniformity requirements. It is normal in such installations for the horizontal illuminance at the perimeter to be significantly less than the average value over the working plane. This is particularly marked in interiors having low-reflectance walls (hence the earlier reference to the 'core area'). Local reductions in illuminance, due to shadowing, may also be caused by large items of furniture or equipment that project substantially above the working plane. Both in these areas and at the perimeter of the room, local or localised lighting may be necessary if critical visual tasks are to be performed.

In a localised or local lighting system the normal design method is to establish the highest recommended task illuminance, then to set the average 'ambient' level at one-third of this value or at the requirement of the non-task areas (whichever is greater). The illuminance at the task area is then 'topped up' with localised or local lighting to the appropriate task level, bearing in mind that the usual uniformity requirements for the task area must be satisfied. (Calculation methods are given in the Calculations guide – see CD.)

2.3.4 Luminance and illuminance ratios

Luminance distribution in the field of view controls the adaptation level of the eyes, which affects the task visibility.

A well balanced adaptation luminance is needed to increase:

— visual acuity (sharpness of vision)

— contrast sensitivity (discrimination of small relative luminance differences)

— efficiency of ocular functions (such as accommodation, convergence, pupillary contraction, eye movements etc.).

The luminance distribution in the field of view also affects visual comfort. The following should be avoided for the reasons given:

— luminances that are too high, which may give rise to glare

— luminance contrasts that are too high, which will cause fatigue because of constant re-adaptation of the eyes

— luminance and luminance contrasts that are too low, which may result in a dull and non-stimulating working environment.

Luminance differences may be specified or measured in terms of the ratio between one luminance and another. Suggested targets are: task-to-immediate surround, 3 : 1; and task-to-general background, 10 : 1.

The reflectance and the illuminance on the surface determine the luminances of all surfaces.

Ranges of useful reflectances for the major interior surfaces are given in Table 2.2.