3.5 Choice of electric lighting systems

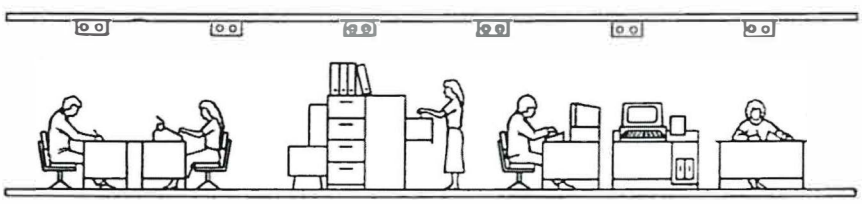
3.5.1 General lighting

Lighting systems that provide an approximately uniform illuminance over the whole working plane are called general lighting systems (see Figure 3.6). The luminaires are normally arranged in a regular layout, and the appearance of the installation is usually tidy but may be rather bland. General lighting is simple to plan using the lumen method (see section 3.5.3, Average illuminance (lumen method)) and requires no coordination with task locations. The greatest advantage of such systems is that they permit flexibility of task location.

If the installation design assumes an empty space between ceiling and working plane, it may be difficult to achieve the recommended uniformity if the area actually contains substantial obstruction or is divided into several small areas. If the degree of obstruction over the working plane is high, or if partitioning is installed, it will probably be necessary to increase the number of luminaires. This will have significant energy and economic implications, especially if a larger number of lower wattage luminaires are required.

The major disadvantage of general lighting systems is that energy may be wasted in illuminating the whole area to the level needed for the most critical tasks. Energy could be saved by providing the necessary illuminance over only the task areas, and using a lower ambient level for circulation and other non-critical tasks.

(a)



(b)

Figure 3.6(a) and (b) A general lighting system employs a regular array of luminaires to provide a uniform illuminance across the working plane