This form of control can be applied to a wider range of lamp types, as long as the run-up and re-strike characteristics (Lamps, see LIF Lamp guide on CD) are taken into account.

3.7.1.4 Automatic control

Automatic control can take a number of forms.

A timer control system may switch the whole lighting installation on and off at predetermined times, or it may be programmed to send signals at certain times during the day (e.g. lunch time) to switch off selected luminaires. If daylight is sufficient, or lights go out over unoccupied areas, it is unlikely that these will be switched on again until needed. This type of system can be used for providing reduced lighting levels early in the morning and before the majority of staff arrive, or in the evening to cover cleaning or security operations. Local manual override switching is essential with this, as with all other automatic controls. Security requirements may also demand a general override control to cover emergency conditions at night.

Occupancy detectors are used to detect the presence of people and to control the lighting accordingly. These can rely upon acoustic, infrared, microwave, or other methods of detection. A time lag must normally be built into the system to prevent premature switch-offs or excessive switching.

Depending upon the size of area and number of occupants, it is desirable to provide a degree of individual control that enables personal choice of lighting conditions. In cellular offices, this could be from a combination of high frequency ballasts controlled by a potentiometer or suitable infrared transmitter, which can be used to select or raise and lower the lighting levels. In larger offices, local controls should not noticeably affect the lighting conditions in, and viewing conditions from, adjoining areas (see sections 3.5.2, Localised lighting, and 3.5.3, Local lighting).

Management control systems can address every luminaire in order to programme the appropriate lighting in individual areas. The main advantage to this system is that office alterations can be made and the lighting simply adjusted via the computer to suit the new layout. Combined with local override control, changes can be made without the need for expensive relocation of luminaires and alteration to switching arrangements.

It is possible to interface between a building energy management system (BEMS) and a lighting energy management system (LEMS) in order to provide certain control commands from the BEMS to the lighting. It is not generally cost-effective to use the BEMS to provide discrete localised lighting control to individual luminaires, but rather to achieve load shedding or zone switching.

3.7.1.5 Maintenance control

Through the LEMS it is possible to check the status of the primary and emergency lighting. The system may be programmed to provide the check at prescribed times automatically, the status of each luminaire being checked and recorded.

3.7.2 Human factors

Control systems that are obtrusive (see section 3.8.1.5, Photo-electric control) are counterproductive and may even be sabo-