

- a local lighting system, sometimes called task/ambient: this uses two separate systems that are inter-dependant; a general lighting installation to provide an ambient lighting condition and a desk or partition mounted task light under the control of the occupant and topping up the ambient lighting illuminance to achieve the required task illuminance.

For exteriors, a general system is the usual choice where work is carried out but much greater degrees of non-uniformity are acceptable where the function of the lighting is essentially decorative.

The second decision to be made will be the choice of light source and luminaire. The characteristics of available light sources and luminaire types are set out in Chapters 3 and 4 respectively. It is important to appreciate that light sources differ in their luminous efficacy, life, colour properties, run-up and restrike times and in their ability to be dimmed. Luminaires differ in the distribution of light and the efficiency with which they emit the light produced by the light source.

The third choice to be made is the type of control system. Switching luminaires used to be the only viable approach to take, but now, with high frequency electronic dimmable ballasts dramatically reducing in price, dimming is a realistic option. For interiors, dimming can be used to save energy even when daylight is absent. This is due to the fact that all lighting is designed for average maintained illuminance, which provides more light to start with than is required. When daylight is present, dimming can be used to balance the electric lighting to the daylight. For exteriors, switching and dimming can be used to match the lighting to the patterns of use, e.g. a supermarket car park does not need to be completely lit at 3 a.m. Any users at that hour will park near the doors.

There are basically two forms of lighting control systems: analogue and digital (see Section 5.2). Analogue systems typically use a 1–10 volt protocol providing continuously variable dimming. The digital systems most widely used are DALI and DMX512 (see Section 5.2.3). Both also provide continuously variable dimming. The advantages of digital over analogue control are many, one of the most important being the facility to monitor an installation through a two-way communication capability. This transfer of information makes preventative maintenance and energy monitoring possible.

Control systems can provide the facility for individual or group addressing, zoning and scene setting. The recording of energy consumption is also highly desirable if the installation is to provide the information for building monitoring required by Part L of the Building Regulations.

Some control systems allow remote monitoring via the internet. This can be of great benefit to companies with large building estates, such as the NHS, education authorities, banks, national retail chains etc. By monitoring centrally in a region or area, preventative maintenance can be undertaken such as the anticipation of bulk lamp replacement from the hours-run data.

6.3.3 Integration

Integration of a lighting installation takes four forms:

- integration within the space, architecture, interior design
- integration with other services
- integration with daylight
- integration with the surroundings.