3.4 Daylight

The use of daylighting and electric lighting together can both contribute towards the efficient use of primary energy and increase the satisfaction of users. The specification of daylight requirements is covered in *BS 8206* Part 2, and the design of windows is described in the *CIBSE Lighting Guide 10: Daylighting and Window Design.*

The energy saving from daylight use can be estimated from the average daylight factor. The analysis of energy use is described in section 2.4, Energy efficiency recommendations, while information on control systems for electric lighting used in conjunction with daylight is provided in Lighting controls (see CD) and section 3.7, Energy management.

When working on an existing building, or when the window design of a new building has already been fixed, the designer should take the following steps:

(*a*) Check whether any form of shading devices or blinds will be required to control sunlight penetration.

(*b*) Analyse the extent to which daylight will provide general room lighting or task lighting.

(*c*) Design the electric light for daylight hours and for night.

(*d*) Select control equipment to ensure efficient use of electric lighting.

3.4.1 Initial appraisal of daylight quantity

The extent of daylight penetration can be assessed initially using the following guidelines:

(*a*) If the sky is not directly visible from a point in an interior, the level of daylight at that point will be small. The 'no-sky line' (the boundary of the region in the room from which no sky can be seen) gives an indication of the area beyond which daylight may not contribute to general room lighting. Windows can, however, still be important in providing an external view from parts of a room distant from the window walls.

(*b*) In areas of a room adjacent to a side window, the region in which daylight might contribute significantly towards task lighting extends back from the window for a distance of about twice the height of the window head above the working plane (provided that there are not large external obstructions, that there is clear glazing, and that the sill is not significantly higher than the working plane).

3.4.2 Daylight to enhance the general brightness of the room

The use of daylight for general room lighting is described in sections 1.2, Daylight and electric light, and 2.2, Recommendations for daylighting. The extent to which existing windows may give a daylit appearance and also provide the necessary overall brightness of the room can be found by calcu-