



**Figure 7.12**  
Splayed  
surround  
to a skylight

Shading devices can be either passive or active. Passive shading devices restrict daylight at all times, active shading devices do not. Passive shading devices consist of light shelves, overhangs and louvres.

Light shelves are formed by a light reflective surface mounted either internally or externally, part way down a window. They are designed to shade the area near the window and reflect daylight and sunlight up onto the ceiling. This action changes the appearance of the space and balances the daylight distribution better. Light shelves do not generally increase the amount of daylight in the depth of a space by any significant amount. Light shelves need regular cleaning if they are to be effective. To ensure that parts of the ceiling near the window do not exceed the recommended maximum luminance ( $1,500 \text{ cd/m}^2$ ) and that sunlight does not penetrate directly into the building through the window above the light shelf, it is essential to examine the geometry of the light shelf in relation to the yearly sun paths.

Structural overhangs shield the windows from areas of high brightness sky and are useful for limiting building heat gain. However, they will not shield the occupants from the low winter sun. To minimise glare, the underside of overhangs should have as high a reflectance as possible.

For maximum effect, louvres are best located on the exterior of a building (Figure 7.13) where they are more effective at controlling solar heat gain. The size and shape of the louvres will be influenced by orientation of the building and its latitude. South-facing facades are best protected with horizontal elements whilst east and west facades are better protected by using vertical elements angled slightly to the north. Roof lights can be protected by shaped cells where the dimensions will be decided by whether all sunlight is to be excluded at all times (Lynes and Cuttle, 1988). Grills are an alternative to louvres for shading a window wall.



**Figure 7.13**  
External louvres