6.2.9 Light trespass and skyglow

Light can be considered a form of pollution. This is implied by the inclusion of light as a statutory nuisance in the Clean Neighbourhoods and Environment Act: 2005. Exterior lighting is the major source of light pollution. Complaints about light pollution from exterior lighting can be divided into two categories, light trespass and skyglow. Light trespass is local in that it is associated with complaints from individuals in a specific location. The classic case of light trespass is a complaint about light from a road lighting luminaire entering a bedroom window and keeping the occupant awake. Light trespass can be avoided by the careful selection, positioning, aiming and shielding of luminaires and by operating a curfew system where lighting is only available during specified times. The Institution of Lighting Engineers (ILE) has produced general guidance on the vertical illuminance that should be allowed to fall on windows, the maximum luminous intensity of any obtrusive light source and a maximum building luminance for floodlighting. These limits are different for different environmental zones. The idea behind environmental zones is that some locations are more sensitive to light pollution than others. Table 6.1 shows the four environmental zones identified by the CIE. The limits recommended by the ILE for limiting light trespass are given in Table 6.2.

Table 6.1 The environmental zoning system of the CIE

Environmental zone	Zone description and examples of sub-zones
E1	Areas with intrinsically dark landscapes: National Parks, areas of outstanding natural beauty (where roads are usually unlit)
E2	Areas of 'low district brightness': outer urban and rural residential areas (where roads are lit to residential road standard)
E3	Areas of 'middle district brightness': generally urban residential areas (where roads are lit to traffic route standard)
E4	Areas of 'high district brightness': generally, urban areas having mixed recreational and commercial land use with high night-time activity

Table 6.2 Maximum vertical illuminance on windows, maximum luminous intensity for obtrusive luminaires and maximum building luminance produced by floodlighting, for four environmental zones

Environmental zones	Maximum vertical illuminance on windows (lx)		Maximum luminous intensity (cd)		Maximum building luminance (cd/m^2)
	Before curfew	After curfew	Before curfew	After curfew	
E1	2	1	0	0	0
E2	5	1	50	0.5	5
E3	10	5	100	1.0	10
E4	25	10	100	2.5	25