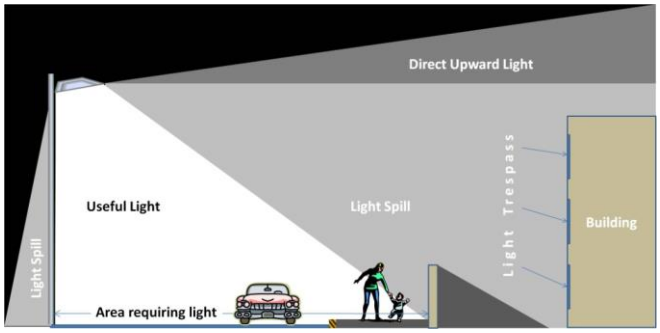
Credit Submission: Design Rating	☐ Narrative describing the type and location of all external lighting provided on the project, and lighting calculations demonstrating that the required illuminances and percentage up-light limits have been met; ☐ External lighting drawings and details of lighting controls and locations of daylight sensors; ☐ Specification and luminaire schedule confirming mounting heights and all information relating to the light output and aiming of each luminaire; ☐ Control Strategy confirming which luminaires will be turned off outside the recommended hours of operation and which luminaries will operate at the reduced levels; and ☐ Specification confirming that the safety or security lighting used between 23.00 and 07.00 complies with the lower levels of lighting recommended in IESNA RP-33-99 and IES RP-8; and Table LS-R4a.
Credit Submission: Construction Rating	☐ Revised Design submission to reflect any changes in the constructed project; ☐ As-built electrical specifications and drawings confirming external lighting (including safety and security lighting) and controls; and ☐ Photographs confirming: ▫ External lighting and controls; and ▫ Cut off luminaires, if provided, have been angled to limit spill light to potentially obtrusive directions.
Calculations and Methodology	Calculations must include all public realm lighting, including safety, security, pedestrian circulation, landscape (functional/accent/feature), external car parking, and external signage and advertising. Lighting schemes requiring the deliberate and careful use of upward light, for example ground recessed luminaires, ground mounted floodlights and decorative lighting may not achieve these limits. In these instances, care should always be taken to minimise any upward waste light by the proper application of suitably directional luminaires, accurate aiming onto surfaces, minimal lamp-source wattage selection and light controlling attachments. Proprietary lighting calculation software must be used to evaluate and demonstrate compliance. Luminaire data sheets must be used to select the correct fixtures and demonstrate appropriate light cut-off angles and visible light source intensities. Figure LS-R4a - Light pollution from street lighting  **Definitions** ▪ **Lighting Zone, LZ1** – Dark (park and rural settings). ▪ **Lighting Zone, LZ2** – Low (residential areas). ▪ **Lighting Zone, LZ3** – Medium (commercial/industrial, high density residential). ▪ **Lighting Zone, LZ4** – High (major city centres, entertainment districts). ▪ **Percentage Direct Up-light** - The percentage of direct upward light (see figure LS-R4a) associated with the total initial designed fixture lumens emitted at an angle