HOME-ZONES

Street Lighting Guidance

The document was devised with the development of the Kings Lynn Home Zone. It is a new estate comprising of a mixture of flats and houses. The principle of Home-Zones have been used following the proven European model of integrating pedestrian, cyclists and vehicles into one road space and providing open shared areas for play.

The concept involves the use of traffic calming in many various forms. The housing has been designed to break up the flow of the road and provide areas of ambiguity for the driver. Road Humps and build outs demarcate gateways and should be highlighted as such by any lighting scheme. The lighting should be an integrated element of the design being used to slow the driver and highlight any pedestrian movement.

No specific lighting guidance is available through the BS or ILE (Institute of Lighting Engineers) technical reports for Home Zones. BS EN13201 – Lighting Standards can be used to define lighting levels and provide guidance for Home Zones. Other Home Zone or ‘woonerf’ schemes in Europe can also be examined for lighting practice to draw comparison.

Woonerf Lighting tends to be column mounted at a nominal mounting height of 4-5m. Post-top lighting is prevalent, often situated between trees but at reasonably close spacing often between 20 and 30m. Where entrances and gateways are used to demarcate shared areas, columns are situated to emphasis a change in priority for the vehicular movement.

Applying UK practice

BS EN13201 discusses appearance both in the daytime and evening. The daytime aspect of a scheme can be positively enhanced by a sympathetic lighting scheme. Where buildings, trees and paved surfaces have been designed to provide interest, the lighting should in the majority of places be unobtrusive (BS EN13201 5.1.2).

Gateways are an area where a higher lighting level and column mounted lighting would be advantageous, maybe even beyond the scale of the surrounding buildings. A combination of Wall Brackets and columns can be used in mixed vehicular and pedestrian areas. Open areas can often benefit from more obvious column lighting at a height of no more than 5m. Good quality post top units can provide warmth that will assist in the perception of security for vulnerable users in these areas. Lighting levels and uniformity can be assisted by small, discrete; wall mounted floodlights if required. This would be especially important if street crime is an issue and CCTV is required. (BS EN13201 10.13) states that this is acceptable for schemes that require in-efficient architectural low-level lighting units for aesthetic reasons.

Lighting throughout the hours of darkness is particularly important as an aid to crime prevention, policing and the general safety and comfort of the community. In some limited situations a lighting installation may be extinguished during certain periods of the night when usage is very low. Where Crime prevention is an important consideration, however, lighting should never be extinguished. (BS EN13201 5.4) The BS clearly gives some latitude for dimming and in (10.13) continues to clarify the position for dimming installations for traffic use, energy and where a higher lighting level is required than can be obtained without detracting from the visual appearance.

Higher lighting levels may be required in the early evening for Home Zones as the concept encourages uncertainty into the use of road space. Children will be encouraged to play in areas that are well lit in the evening and the highest

movement of vehicles/cyclists is also likely at that time. As evening proceeds the need for those light levels will decrease but still need to be maintained to provide a perception of lowering Crime & Disorder issues. Dimming can be carried out when the roads are quiet. This means an evening light level will be in accordance with one standard for mixed usage and a night standard for a normal residential street.

The lighting source should be able to provide excellent colour rendering and facial recognition. Some warmth to the light should be maintained but a good white light source is essential for Crime & Disorder issues. If CCTV is being used a white light source will be crucial to obtain any prosecution. CCTV and Lighting Design should be co-ordinated avoiding glare and 'hunting' issues where cameras switch between monochromatic and colour due to low light levels. The light source should be White light (A minimum of 60 R (a)) to assist drivers to quickly identify vulnerable road users. White light is more inviting for Children to play under, thus promoting the play concept into early evening especially in the winter months.

A balance of columns, wall and ground mounted equipment should be kept. A fully wall mounted scheme could be 'cold' in appearance where a full column scheme could become cluttered. Signs have to be considered especially when they have to be lit. Columns should be placed in areas of adopted highway. This can cause particular issues where adopted boundaries vary greatly with the varying road widths and parking arrangements. Any bracket proposals on buildings are to be complimentary to the column design. A 'design pallet' of materials and styles should be used for all equipment to co-ordinate road and street furniture finishes. Cabling for wall mounted units is to be discrete under eaves or especially designed into the building. All equipment such as feeder pillars columns and wall brackets should be accessible from the adopted areas for maintenance. A point of isolation should be provided for all equipment. A Legal Easement for any equipment placed on private property should be sought and included in the deeds of the developer.

Kings Lynn Home Zones – Lighting Classification Example

BS EN13201 has been used to classify the two different types of use envisaged for the Home Zone.

Daytime & Early Evening Scene

Criteria	Outcome
Speed	*5Kph & less/equal 30Kph*
Main Users	*Motorised Traffic* *Pedestrians*
Others Users	*Slow Traffic & Cyclists*
Exclusions	*No Excluded Users*
Traffic Calming	*Included*
Crime Risk	*Normal*
Facial Recognition Required	*Yes*
Navigational Task	*Higher than normal*
Flow of Pedestrians	*Normal*
Final set of lighting situation	**D1& 2 Category**

With the above Criteria BS CEN13201 would recommend a lighting classification of either

Class	Minimum Maintained (lx)	Minimum
CE 4	10	0.4
CE 5	7.5	0.4

- **CE 5 would be the lowest and most suitable classification for early evening activity.**

Late Evening & Night

Criteria	Outcome
Speed	*5Kph & less/equal 30Kph*
Main Users	*Motorised Traffic* *Cyclists*
Others Users	*Not significant*
Exclusions	*No Excluded Users*
Traffic Calming	*Included*
Crime Risk	*Normal*
Facial Recognition Required	*Yes*
Navigational Task	*Higher than normal*
Flow of Pedestrians	*Less than normal*
Parked Vehicles	*Present*
Final set of lighting situation	**D 3 & 4 Category**

With the above Criteria BS CEN13201 would recommend a lighting classification of either

Class	Minimum Maintained (lx)	(E) Minimum (lx)
S4	5	1
S5	3	0.6

- **S4 would be the lowest and most suitable classification for late evening/ Night activity.**

Kings Lynn Home-zone Lighting Proposals

CE 5 is suitable in many ways to a mixed area of usage where children would be expected to play. It will encourage drivers to be cautious and it will highlight the change in space as well. CE 5 level is fairly high for residential use and should therefore be dimmed to S4 at the earliest opportunity in the evening. 2200 hrs to sunrise, would be suitable times to have light dimmed to S4. This is due to usage being primarily vehicular within those times.

A white light source (R (a) min. 60) and a minimum light level of 1 Lux should be adopted throughout the evening which will perform well and promote a perception of reducing the fear of Crime & Disorder. Any CCTV installations will work well to around 1Lux minimum with good colour rendering giving admissible pictures for prosecution.